1953

Catalog Directory

For the Light Construction Industry
NuTone RECESSED Chimes

Here's modern simplicity in a NEW 2-door chime ... a functional design to blend with any room — any decoration.

NuTone's Model K-15 Recessed Door Chime can be installed flush with wall and ceiling ... or surface mounted. Only 7¼" square, 2" deep. Smart chrome bezel and white grille ... Chime can be painted to blend with wall or ceiling colors.

Gives a loud, clear signal ... Can be used as a single chime for average homes ... or as an extra chime with other NuTone models for 2-floor plans or larger Ranch-type homes. Two musical notes for front door, one for rear.

CAN BE MOUNTED FLUSH IN WALL ... OR SURFACE MOUNTED IF DESIRED.

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NEW bezel and grille ... Contemporary design ... blends with any interior — in keeping with modern appearance of recessed fixtures.

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NUTONE

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Detroit Steel Products Co.,
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Detroit 11, Michigan

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APRIL 1953
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APRIL, 1953

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13 Editorial
14 Washington Newsletter
16 Homebuilding Picture Across the Nation

chapters

73 Concrete, Cement, Mortar, Plaster, Aggregates, and Structural Clay Products
91 Construction Machinery, Equipment, Tools—Power and Hand
131 Lumber, Plywood and Hardboard, Millwork, Stairs and Related Products
155 Windows, Doors and Frames
217 Garages: Doors and Operators
231 Hardware—Builders and Finish
253 Heating, Ventilating and Air Conditioning
291 Wiring, Lighting, Electric Fixtures, Electrically Operated Devices
299 Plumbing—Fixtures and Accessories
317 Prefabricated Structures and Structural Members
329 Metal Building Products
349 Interior Wall, Floor, and Ceiling Materials
377 Glass, Glass Block, Glazing and Caulking
389 Roofing, Sheathing, Siding, Insulation
423 Kitchen Equipment, Home Appliances and Built-ins
455 Paint and Adhesives

directory sections

D-1 Section I—Alphabetical Listing of Building Products and Equipment Manufacturers
D-52 Section II—Alphabetical Listing of Brand Names
D-61 Section III—Alphabetical Listing of Manufacturers' and Association Names and Addresses
471 Index to Advertisers
VULCAN RADI-VECTOR
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...WITH NEW SALES-MAKING FEATURES

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5. Ball joint operates easily and smoothly.

Your nearest Eljer Distributor will be pleased to show you how the Vari-Spray operates. See it today or write to Eljer Co., Box 192, Ford City, Pa. for more information.

APRIL 1953
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The same space-saving convenience . . . the same dependable heating . . . the same operating economy . . . now available in a range of smaller sizes for homes, shops and smaller commercial installations.

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...America's Largest and Most Complete Warm Air Heating Line...

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Join the builders who stand out above the rest because their homes offer more... with complete Hotpoint All-Electric Kitchens and Home Laundries.
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FLUSH DOORS

All Wood. Hollow Core or Solid Core.
For Interior or Exterior Use.

Produced from the finest quality of foreign and domestic woods

As one of the largest producers of plywood in the United States, it is no wonder that the THOMASON PLYWOOD CORPORATION offers a wide choice of beautiful veneers. From Africa, the Philippine Islands, Panama, Honduras, Canada and from America's own Appalachian forests come the rare and rugged woods that go into the production of THOMASON Flush Doors.

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APRIL 1953
"It's open and shut with no work at all..."

**R-W Electric Garage Door Operators**

**These R-W Features**

**ARE IMPORTANT SALES MAKERS**

- **Easy to install**—Completely assembled, with track, in a single carton at the factory.
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- **Safe**—A large friction clutch prevents operational failures with resulting damage to property. In power failure doors may be operated manually.

**And FOR UNBEATABLE CONVENIENCE, IT'S**

**R-W 999 Garage Door Hardware**

Here it is...complete overhead garage door hardware conveniently packed in one box. No. 999-1 for doors up to 9 ft. wide weighing not more than 200 lbs.; No. 999-2 for doors up to 16 ft. wide weighing not more than 375 lbs. Write for folder giving free details.

**Check these two R-W controls, engineered for dependability and efficiency:**

- **No. 1251 Standard Control**—operates from driveway key switch.
- **No. 1504 Radio Control**—operates from dash control button, opens and closes doors within 75 feet. Also operates doors from inside garage.

For complete information on R-W Au-T-o-DoR line, write for catalog number A-87.

**Richards-Wilcox Mfg. Co.**

"A HANGER FOR ANY DOOR THAT SLIDES"

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NATIONAL LOCK COMPANY
makes news with an important new arrival...

watch for announcement
NEXT MONTH

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APRIL 1953
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An original Hall-Mack idea, this new Concealed Toilet Paper Holder is the extra touch of convenience and charm that makes a home more desirable...more saleable! Only the finest materials and craftsmanship go into bathroom accessories bearing the Hall-Mack name.

In Hall-Mack's complete line of bathroom accessories you'll find a number of original developments with the kind of special appeal that sparks up an entire bathroom...and conveys the impression that the entire home is the result of careful thought and planning.

May we send you complete information on Hall-Mack's new Concealed Toilet Paper Holder...and on other exclusive Hall-Mack bathroom accessories?
This Is Your Reference Issue —
Keep It Handy

This 1953 catalog directory issue is a pioneer in its class. Heretofore, issues similar to this have presented an assortment of useful, but generally unrelated material. While some presentations of this kind have grouped information and tabulated material under chapter heads, little or no attempt has been made to achieve continuity. American Builder's 1952 Catalog Directory did strive for continuity by interspersing tables, charts, and graphs with text. The attempt was successful.

This year, however, the publishers wanted a closer relationship of the material with the types of structures in which the materials are applied. As a result, and with a full realization of all the obstacles and difficulties that would have to be met, it was decided to choose a group of typical buildings, and use them as actual examples of the best ways to install and apply.

It was reasoned that only in this way could a vast mass of information be pinpointed and thus given a utility to readers far beyond anything obtainable without actual engineering and application details in structures. While it has been impossible to engineer all of the products discussed in one or more of the buildings used as examples, the work has been done as far as practical.

The publishers believe that this forward step in presenting catalog information makes this 1953 Catalog Directory the most valuable issue of its kind ever published in the light construction field.

It will be noted that the indices of products, manufacturers' names and brand names has been streamlined to include only the more important producers of each class of products. Heretofore an attempt has been made to bracket the entire field of production. The result has been the inclusion of scores of names of minor producers, most of them distributing in limited areas, and without facilities to service inquiries and orders on a national scale. It is felt that such indices waste the time of both readers and the smaller producers.

The indices of products, manufacturers and brand names in this issue include only the more important ones. Marginal and little used product classifications have been deleted. Only the names of manufacturers operating on national or near national scales have been retained.

The Catalog Directory has been stripped of all useless data and listings, and carefully planned as an indispensable reference volume of easily understandable and applicable data for busy builders who want quick and reliable answers to problems.
AB Washington News Letter
For the Light Construction Industry

A special service for American Builder readers. The latest Washington developments affecting the light construction industry assembled by special Washington correspondent and sent by wire to be printed and bound in your American Builder at the last minute before it is mailed. A regular monthly feature.

Washington, March 20, 1953

Albert M. Cole, former Republican Congressman from Kansas, is the man selected by President Eisenhower to become administrator of the Housing and Home Finance Agency. He will succeed Raymond M. Foley.

The Senate confirmed the appointment by a 64 to 18 vote. Some opposition had been expected because of Cole's strong position against public housing while a member of Congress.

A member of the House Banking and Currency Committee since 1947, the new HHFA administrator took an active part in forming much of the nation's housing legislation. This is the law he must now administer.

His first move will be to undertake a "comprehensive study" of the organizations and functions of HHFA. He said the White House asked that he conduct such a study. He thinks emphasis should be placed on keeping activity in the homebuilding industry high.

Appearing before the Senate Banking Committee in connection with his appointment, Cole touched upon many aspects of housing. Here are some of his views:

Slum Clearance: "I think private enterprise can do the job." He said he already has "very definite plans" on this subject, and will make it "my number one project." He denied that he opposes the slum clearance program. His criticism of such legislation in the past, he said, stemmed from his belief that slum clearance was being used as "a vehicle for extraneous legislation." He did not elaborate.

Research: Cole indicated that while he originally opposed giving research authority to HHFA, he no longer has such reservations. He said that as of the present he would not seek changes in this portion of the National Housing Act.

Interest Rates: "I look on interest rates as part of the over-all fiscal policy of the government." Cole's approach to this problem would be to do nothing until "a thorough and complete study" is made, and then only in cooperation with the Treasury and the Federal Reserve. He said he felt no change was needed "at the moment." He defined a "moment" as "30 days.

FHA and FNMA: Cole thinks the FHA program is a good one. He said he has no objection to FNMA as a "secondary mortgage market"; but he expects to "take a look" at FNMA if he becomes HHFA administrator. He agreed with one senator that the government should take the lead in setting up "some program" to take the FNMA load off the government. He said there should be a decrease in direct government housing activity "when conditions warrant.

Public Housing: Cole said personally he opposes "certain aspects" of public housing. He thinks it would take "100 to 200 years" for existing programs in this field to accomplish anything. He said he did not think his opposition to public housing in the past was important to his present situation. He assured the Senate committee he would "administer existing law effectively" even though he might not agree with all aspects of it. And, at one point, he said he was not "unalterably opposed" to all public housing. He said that as HHFA administrator he would not "lobby for or against public housing."
HOUSING FOR LOW-INCOME GROUPS: "I think we have been reactionary, we have been static in our housing program." Cole said the nation must have a "vigorous program" to provide housing for low and middle-income groups. He spoke of 6,000,000 families. But he insisted we must do this job "and still maintain the liberty of the people."

WARRANTIES: Questioned on the matter of compulsory warranties, Cole said he agreed "with the broad general principal." He did not indicate just where he would draw the line.

INDUSTRY REACTION to the Cole appointment has been unanimously favorable. The National Association of Home Builders, for example, called Cole "eminently qualified" for the position — "an outstanding choice."

AN "ENTIRELY ENCOURAGING" OUTLOOK for the remainder of 1953 is seen by Raymond M. Foley, the departing head of HHFA. Foley had headed the agency and the nation's housing program since 1945.

CHIEF PROBLEM this year will be mortgage money, in Foley's opinion. Adequate funds are on tap, he thinks, but the job will come in trying to channel such funds into production of houses in the low-income brackets.

REVIEWING his 18 years in the government housing field, Foley said "one of the most important things" during that time has been the "amazing growth" of the homebuilding industry. He recalled the situation in the mid-thirties and compared it with the present when a million starts a year "is just matter of fact."

ESTIMATES of construction volume so far this year bear out earlier optimism. Dollar outlays for new residential construction are running 15 per cent above last year. Spending for "additions and alterations" to existing homes is up 10 per cent.

CONGRESS HAS APPROVED the $500,000,000 increase in Title I insurance authority for FHA. The timing is good. The action was promptly cleared by the President. It will provide a spark for the "repair, alteration and improvement" business during the spring and summer months.

A "PAY-BACK" CLAUSE contained in this latest Title I legislation points up the financial success of this program. When Title I was initiated several years ago, the government advanced some $8,300,000 for expenses and claims. Since 1944, the program has paid its own way and piled up an $18,000,000 surplus. Beginning July 1 the Treasury will start getting back its original advance.

TITLE I may get more attention from this session of Congress. Several legislators have indicated they would like to see it more widely used for rehabilitation of sub-standard housing. One possibility: setting a five-year term for Title I loans, in place of the present three years.

AGITATION over interest rates, particularly the VA rate, continues. Congress is waiting to see what the new HHFA administrator may do about FHA rates. (Both VA and FHA have authority to raise rates above present levels). Industry groups met recently with a committee of the American Legion to present their case for a "realistic" VA rate.

PRICE CONTROLS are fading fast. Most products and services affecting light construction already are decontrolled. CPR-93, covering construction services generally, is suspended. So are price ceilings on copper, aluminum, paint, lumber and wood products. All price controls will end April 30, when the law expires.

CMP CONTROLS over steel, copper and aluminum are no longer a problem. NPA has "open-ended" CMP. This means that any person who can get materials without the use of so-called "rated orders" may legally do so. Construction of projects which formerly required specific NPA approval may now begin without such approval.

SELF-CERTIFICATION remains a part of the homebuilding picture. But a builder who needs more than his authorized quota of steel, copper or aluminum may go shopping for it in the open market without restriction.

COMPULSORY WARRANTY legislation is in the works. A new bill (H.R. 2745) has been introduced in Congress, and is before the House Banking Committee for study. Hearings haven't been set. This type of law, generally opposed by the industry, has gained new support in Congress since last year's investigations into "defective" VA and FHA housing.

APRIL 1953
A pronounced change in home building trends is indicated in this new American Builder survey, which highlights the necessity for progressive builders to keep posted with the latest available information.

Last minute opinions of home building authorities, received by telegraph a few days ago from every corner of the nation, are revealed here to show their thinking about the future of your business:

Consensus:

The present building scene is puzzling in some respects. Financing has reached a most critical stage. Even the big VA money stronghold, the Northeast, is tightening up in many sections. FHA loans are increasingly hard to find. Generally, Congress is being urged to end the crisis by raising interest rates.

Costs are tending to rise again, principally because of labor demands. Sales resistance continues about the same as three months ago, though a few areas assert they are free of this headache.

Despite these fundamental problems, builders are shooting for a slight increase in starts over those of a year ago, aided by an abundance of manpower and materials. Considerable interest is being shown in the remodeling movement, but it has not yet affected very many of the larger operative builders.

What's the Mortgage Money Situation For New Home Financing?

Northeast: Long Island boasts adequate supply “at no discount”; Westchester, N. Y., and Springfield, Mass., “no trouble.” VA tightening in Boston, Providence, Hartford, Conn.; Schenectady, N. Y., northern New Jersey; also Buffalo, where for first time banks ask 1 per cent service charge. South Jersey needs up to 3 per cent discount. No VA in Washington or Wilmington. Del. FHA limited in Richmond, Va. and Portland, Me. Pittsburgh envisions big market “when we get GI money and 10 per cent down.”

Southeast: Conventional and FHA loans just fair at New Orleans, which finds VA down to rock bottom, along with Miami, Birmingham, Ala., Charlotte, N. C. and Nashville, Tenn. Some VA available at discount in Memph is but getting harder to place at 96 to 97 in Jackson, Miss. For first time, no region listed FHA loans as “adequate.”

Central: All loans fairly tight in Detroit, Milwaukee and Louisville. Chicago says savings and loan groups are loaded with money but VA loans are hard to get at reasonable figures. Peoria, Ill., can get VAs only for 10-year term, while conventionals bear interest as high as 6.6 per cent. To revolutionize picture, generally rated impossible, Cincinnati urges interest boost to 4½ per cent. Cleveland notes mortgage money loosening up somewhat.

Southwest: Conventionals adequate if equities are large. FHA scarce in Arizona, Oklahoma, Texas Panhandle. VA very tight; costs 3-5 per cent brokerage in Houston.

West: VA financing virtually extinct without discount—as high as 5 per cent in San Mateo, Calif. FHA moderate to tough throughout: improving at Spokane, Wash., but becoming progressively worse at Sacramento, Calif.

Is Sales Resistance Increasing? In What Price Brackets?

Northeast: Troublesome brackets include $9,500-$13,000 in Springfield, Mass.; $14,000-$18,000 in Providence, decreasing: $15,000-$25,000 in Philadelphia. Pittsburgh blames financing for general resistance. Little or no sales problems found in Rochester, Buffalo, Long Island and Westchester county, N. Y., or northern New Jersey. Sales stiffen at $15,000 in most other areas.

Southeast: Resistance begins at $15,000 in South Florida, at $10,000 in Birmingham, Ala., and is felt in all price categories elsewhere due to high cash requirements.

Central: Bracket of $12,000-$30,000 sluggish in Chicago, while Detroit finds slow going in $13,000-$19,000 range and Lansing, Mich., $13,000-$16,500. Resistance begins at $12,500 in St. Paul; $15,000 in Des Moines, $25,000 in Louisville, $30,000 in Minneapolis. Selling in all price groups is improving in St. Louis and Kansas City. Lincoln, Neb., finds sales “automatic” below $11,000. Dayton, Ohio, reports buyers object to down payment, not the price.

Southwest: Sales problem increasing over $8,000 in Pampa, Texas, and $12,000 in Houston. Resistance above $10,000 in San Antonio, Texas, and Phoenix, Ariz. Tulsa, Okla., reports no trouble at present in any bracket, but $10,000-$15,000 range is of increasing concern in Oklahoma City.

West: Noticeable sales slowdown above $10,000 in Seattle, $12,000 in Spokane, Wash. and Denver; $14,000 in San Francisco, $16,000 in Los Angeles. High down payments affecting all brackets in Sacramento, Calif, San Mateo, Calif., finds no real resistance to sales, says buyers recognize costs but can’t meet financial terms.

(Continued on page 22)
OHIO WHITE & HAWK SPREAD
Hydrated Finishing Lime

OHIO WHITE
Autoclaved Finishing Lime

OHIO QUICK-MIX Masons Lime

OHIO EVER-READY
Every-Purpose Hydrated Lime
For general use. Packed in single 10-lb. paper bags or in containers of five 10-lb. bags each.

OHIO SANLIME FINISH
Dry-Mix Plaster
For sand-finished interior plastering. All ingredients dry-mixed. Available in white and in colors: ivory, buff, pink, blue, and light green. In 100-lb. paper bags.

Sold only through dealers. Write us for prices and descriptive literature, or ask us to have our nearby representative call on you.

THE OHIO HYDRATE & SUPPLY COMPANY
WOODVILLE, OHIO

Folks look here for wind direction...

Folks look here for builder selection!

Looking in the 'yellow pages' of the telephone directory just "comes naturally" to 9 out of 10 shoppers. It's a national habit that's been building up for more than 60 years.

That's why it makes sound selling sense to promote your services in the 'yellow pages'. They reach new prospects and old customers...work for you 24 hours a day in stores, homes and offices all over town.

The 'yellow pages' will prove a real business builder for you. Let the Directory representative show you how to use them effectively. Call him at your local telephone company.
America's No.1 family of

Numetal WEATHER STRIP

FITS-ALL NO.1 SCREEN DOOR GRILLE

NuCALK HAND SQUEEZE TUBE

Nu-ART LETTERS

SPEED LOAD

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Nu-WAY WEATHER STRIP

TWIN-CUSHION WEATHER STRIP

FITS-ALL 56 SCREEN DOOR GRILLE

Numetal DOOR BOTTOM STRIP

Nu-ART SIDING TRIM

CG-4 SPEED LOADER CALKING GUN

Nu-LUME REFLECTING NUMBERS & LETTERS

Nu-WAY SHELF BRACKET

Nu-ART ORNAMENTAL ALUMINUM

Nu-WAY PUSH GRILLE

ORDER NOW! Your order will be shipped same day received!
## Quality Building Specialties!

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nu-Glaze</td>
<td>Glazing Compound</td>
</tr>
<tr>
<td>Nu-GARD</td>
<td>Automatic Door Bottom</td>
</tr>
<tr>
<td>Nu-ART</td>
<td>Thresholds</td>
</tr>
<tr>
<td>Fits-All</td>
<td>No. 5 Screen Door Grille</td>
</tr>
<tr>
<td>Nu-ART</td>
<td>Numbers</td>
</tr>
<tr>
<td>Nu-WAY</td>
<td>Screen Door Grille</td>
</tr>
<tr>
<td>Nu-ART</td>
<td>Moulding and Trim</td>
</tr>
<tr>
<td>Nu-CALK</td>
<td>Calking Compound</td>
</tr>
<tr>
<td>On-GARD</td>
<td>Weather Strip</td>
</tr>
<tr>
<td>Nu-WAY</td>
<td>Shelf Supports</td>
</tr>
<tr>
<td>Nu-LUME</td>
<td>All-Purpose Signs</td>
</tr>
<tr>
<td>Nu-Phalt</td>
<td>Plastic Asphalt Cement</td>
</tr>
<tr>
<td>Nu-ART</td>
<td>Grille Ornaments</td>
</tr>
<tr>
<td>Noiseless</td>
<td>Sliding Door Equipment</td>
</tr>
</tbody>
</table>

**MACKLANBURG-DUNCAN CO.**

**OKLAHOMA CITY 1, OKLAHOMA**
FOR LOWER INSTALLATION COSTS

WESLOCKS Are Your Best Lock Buy

Here's why WESLOCKS cost you less on the door—

- Factory assembled in three easy-to-install units.
- Self-aligning feature reduces time-consuming adjusting.
- Exclusive continuous-lip strikes eliminate detailed mortising of jamb.
- Job-tested installation aids greatly reduce labor costs.
- Modest first cost without sacrifice of quality.

These features substantially lower your installation costs...increase your job profits. They are reasons why WESLOCKS are your Best Lock Buy. Get WESLOCKS from your JOBBER or write for catalog.
Put the extra sales appeal of G-E Light Conditioning to work in your bathrooms for less than $50

WOULDN'T you rather shave in the bathroom on the right? Of course you would—and so would the prospective "head" of every house you're building!

General Electric Light Conditioning—the right lamp in the right fixture in the right location—makes all the difference. The bathroom on the right is lighter, more comfortable. Light is spread evenly on both sides of the man's face and under his chin. No shadows to dodge. No glare in his eyes. He can see better—shave easier.

EASY TO INCLUDE IN YOUR PLANS
All you need to give your bathrooms all the extra sales appeal of the one on the right above are three fixtures that cost you less than $50.00 installed. But what a difference that $50.00 will make! Just by light conditioning your bathrooms you'll get an extra competitive "edge"—have more value that prospects can see for themselves.

There's a low cost G-E Light Conditioning recipe for every room in the house. For more information, contact your electric service company.

FREE BOOKLET! For your free copy of "See Your Houses in a New Light", the new Light Conditioning booklet for builders, write General Electric, Dept. 166-AB-4, Nela Park, Cleveland 12, Ohio.

THE LIGHT CONDITIONING RECIPE ABOVE CALLS FOR:
1. A ceiling fixture centered above washstand, about 12 inches from the wall.
2. Wall fixtures placed on both sides of the mirror, each 15 inches from the mirror's center.
Use either 15 or 20-watt fluorescent tubes or 60-watt incandescent bulbs with opal glass shades.
Where Are Building Costs Headed In the Next Six Months?

**Northeast:** Rise of 5 per cent possible in Buffalo, Albany, Corning and Westchester County, N. Y.; Philadelphia and Wilmington, Del., 4-5 per cent in South Jersey and of 3 per cent in Portland, Me. Long Island carpenters, seeking boost from $2.90 and $3 to $3.40 an hour plus 20 cents an hour for pension fund, may upset stable cost applecart there. Labor seeking increases of 21/2 to 3 cents an hour in Philadelphia. Land costs moving up in Rochester. Undermined increases also predicted for Syracuse, N. Y., and Reading, Pa., regions.

**Southeast:** Mostly no change, though Miami and Charlotte, N. C., see 3 to 5 per cent increase, and Jackson, Miss., one of 1 to 3 per cent.

**Central:** Detroit and Kansas City fear 5 to 7 per cent rise inevitable; Des Moines puts it at 2 to 5 per cent and Cleveland at 5 per cent. Restrictions have upped average cost of a lot by $300 in Dayton, Ohio. Most other centers expect to hold the line, with fluctuations evening out, unless labor secures big pay increases. Columbus, Ohio, believes costs may be forced up by labor competition of atomic plant.

**Southwest:** Amarillo, Texas, looks for 5 per cent added cost, Oklahoma City a 2 per cent increase and Phoenix, Ariz., and undetermined rise. Otherwise stable.

**West:** 10 per cent boost slated for San Mateo, Calif.; 5 per cent virtually everywhere else; except Denver, which expects to stand pat and Spokane, Wash., with a 2 per cent drop forecast.

Is the Labor Supply Adequate?

**Northeast:** Sufficient manpower everywhere, though Portland, Me., expects tight supply in summer. Carpenters and bricklayers now in 10 per cent oversupply in Washington area. Plumbers somewhat short in Camden, N. J., which notes that general labor supply is adequate, “though skill leaves something to be desired.”

**Southeast:** Adequate supply throughout. Charlotte, N. C., reports surplus. Large non-residential jobs may create shortage in trowel trades and electricians at Miami.

**Central:** No shortages, but Columbus, Ohio, expects atomic plant to draw labor away later this year. General surplus in St. Louis.

**Southwest:** Excess labor at Tulsa, Okla., and Amarillo, Texas. Adequate elsewhere.

**West:** Carpenters “long” by 10 per cent in Sacramento, Calif., 3 per cent in San Mateo, Calif. No shortages.

Are Materials in Adequate Supply?

**Northeast:** Satisfactory quantities available throughout area.

**Southeast:** Surpluses the rule; no problems.

**Central:** Copper tight in Des Moines, Iowa. Materials adequate to plentiful elsewhere.

**Southwest:** Supplies plentiful in all reporting centers.

**West:** Adequate, but Sacramento, Calif., notes slow delivery of some manufactured equipment.
LONE STAR CEMENT CORPORATION

Why the Masons said:
"Yes, Lone Star Masonry Cement Does Make a Smoother, More Plastic Mortar!"

High Water Retention is the basis of workability, plasticity and bond. In Lone Star Research Laboratory, this standard test simulates sucking action of brick. Suction is applied to mortar for one minute. Difference in flow of mortar, before and after test, indicates plasticity and water retention. Write for new Masonry Booklet—address Lone Star Cement Corporation, 100 Park Ave., New York 17—or nearest office, below.

LONE STAR MASONRY CEMENT fits the Masons’ specification like a snug-fitting glove. Because of unusually high water retention, this Mortar remains plastic so brick or block can be properly bedded and good bond obtained. There’s less lost motion—you can go header-high before striking joints—clean, smooth, glossy joints that are the good Mason’s hallmark.

The country over, attractive structures like this well-designed Texas school reflect the quality of Lone Star Masonry Mortar in the hands of skilled craftsmen—Masons who insist on this Cement for economy in quality construction.
In building the NAHB Trade Secrets house, utmost consideration was given to quality materials that were low in cost and could save time and labor. With this in mind, Alex Simms of Dayton selected SONOAIRDUCT and joined the hundreds of other builders who have discovered the "trade secret" of using fibre duct for slab-on-ground perimeter heating systems. Important savings over clay and galvanized pipe!

Light weight SONOAIRDUCT was specifically designed for supply or return lines in loop, radial or lateral systems. Sizes 2" to 24" I.D., up to 24' long. Can be sawed to exact lengths on job. Permitted by F.H.A. Watch for the announcement of SONOAIRDUCT-XP (Exposed) for attic and crawl space.

Important!
Investigate how FHA and VA regard all purpose rooms as 3rd bedrooms with resultant loan advantages.

Add an "EXTRA" Room without adding to building cost!

Illustrated above is one of many examples of how ingenious builders everywhere are using Murphy Beds as the answer to the popular demand for an "extra" room.

The Murphy Bed illustrated is only one of several Recess Models, some requiring as little as 13" depth. Other models include Pivot and Roller types. All are built to receive standard mattresses to assure maximum sleeping comfort.

Send today for complete details on all Murphy Bed Models and Murphy Cabanette Complete Kitchens.

MURPHY BED AND KITCHEN COMPANY, INC.
19 West 44th St., New York 36, New York
Please send free information on Murphy Beds and Cabanette Kitchens.

NAME ________________________________
ADDRESS ________________________________
CITY __________________________ STATE ______

DISTRIBUTORS WANTED—Write for complete details.
**A New Twist...**

**THAT SAVES!** by Sterling

**KORD** is the prefabricated caulking compound designed to reduce labor costs and waste. One of its many uses is to seal sills.

The sketch shows one of the uses of KORD by one of the nation’s leading builders, the Levittown homes, to weatherproof the sills.

---

**STAINLESS STEEL APARTMENT HOUSE MAIL BOXES**

Again pioneering in the development of fine quality equipment for homes and apartments, Auth offers Apartment House Mail Boxes with stainless steel fronts. No other mail box face-metal has the same resistance to corrosion and abuse as satin-finished stainless steel. With a minimum of care Stainless-Steel-Front Mail Boxes will have the same fine appearance many years after installation as they had when installed. Recognizing this fact the Metropolitan Life Insurance Company, the New York City Housing Authority, and many other leading developers of large scale housing have specified and installed Auth Stainless-Steel-Front Mail Boxes in all their recent developments.

Auth Mail Boxes are officially approved by the U. S. Post Office. They are made in gangs of 3 to 13 receptacles to a gang; by joining gangs together any number of receptacles may be installed.

Other outstanding features are a wide one-piece trim, rust-proof lead-coated steel interiors, and extra-heavy reinforced doors. Available with or without push buttons to ring bells or chimes in apartments. In addition to satin-finished stainless steel, brushed brass or sprayed brass finishes are available.

For complete details on Auth Apartment House Mail Boxes, write to the Auth Electric Company, Inc., 34-20 Forty-Fifth Street, Long Island City 1, N. Y., or consult your telephone directory for local office.

---

**NON-ELECTRIC DOOR CHIMES FOR APARTMENTS**

**NATIONAL MODEL No. 850**
A completely non-electric door chime... no wiring. Utilizes a mechanical push button mounted on the outside of the door or door frame to sound two musical notes on the chime mounted on the inside. Handsome push button escutcheon plate is forged solid brass with polished finish. Decorative chime (only $1.00) is finished in ivory enamel. Fits all doors or door frames up to 9” thick. A great money-saver for any home or apartment.

**METROPOLITAN MODEL No. 890**
Similar to the National Model in its operation by a mechanical push button, but with an additional “peephole” feature. An adjustable window in the chime permits the resident to observe a caller through a one-way mirror without, in turn, being observed. Space for name and apartment number on front plate. A beautiful new design, just released, and ideal for apartments.

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**STERLING PAINT & VARNISH CO.**
162 Commercial St. Malden, Mass.

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**APRIL 1953**
ANNOUNCING THE RESULTS OF THE CRANE IDEAS COMPETITION

Crane holds nation-wide contest to stimulate interest in better bathrooms and kitchens

There were so many entries in the Crane competition it required four large, specially built chests to ship them to the judging place. The distinguished Jury of experts consisted of Alan Brockbank, Home Builder, of Salt Lake City, Utah; Royal Barry Wills, Architect, of Boston, Mass.; Glenn Stanton, Architect, of Portland, Ore.; George Dahl, Architect, of Dallas, Tex.; and Henry Dreyfuss, Industrial Designer, of South Pasadena, California.

In order to discover and develop new ideas for bathrooms, kitchens and utility rooms—rooms of increasing importance when it comes to selling houses—Crane has just held a nation-wide architectural competition.

Nearly 500 architects, draftsmen and designers submitted entries, and a distinguished jury picked 32 winning designs to share $23,000 prize money.

You'll see the very best of these prize winners—the newest, most advanced, most practical ideas of all—in forthcoming Crane advertising.

Crane is already building some of these rooms to photograph for publication; and details will soon be yours for the asking. Watch for the announcement!

FIRST PRIZE WINNERS

Bathroom for home costing up to $25,000
J. A. Curtis, Mass. Inst. of Technology

Bathroom for home over $25,000
Charles West Jones, Jr., Glendale, Calif.

Kitchen for home in any price range

Utility room for home in any price range
Donald H. Panushka, Birmingham, Mich.
IN PLASTERING, FOR INSTANCE

**PLASTERER** — The light weight of Permalite/plaster — about ½ the weight of sand/plaster — lifts a heavy load off the plasterer's shoulders... makes plastering easier, faster, better, because Permalite/plaster has excellent workability.

**BUILDER** — Builders like Permalite/plaster for three reasons. Light weight means the job goes quicker—easier to mix and handle on multi-story structures. Light weight, saving as much as one ton of dead weight per 100 sq. yd., also means less settling, less chance of cracks. (Permalite/plaster gives up to 42% greater crack resistance.) And Permalite/plaster also gives increased fire resistance.

**ARCHITECT** — Permalite/plaster simplifies the architect's job on large buildings, because it reduces dead weight, provides easier fireproofing of steel columns and ceilings — saves money which can be better applied to other building features. Architects specify Permalite/plaster in many home-building jobs because it provides more lasting satisfaction to the home owner.

**BUILDING OWNER** — This man gets all the benefits shown above, and, in addition, gets greater comfort, because Permalite/plaster provides him with extra insulation, for more even room temperature.

To get the full story on Permalite's many advantages, send today for your free bulletin on Permalite, the largest-selling perlite aggregate in the world. Write Great Lakes Carbon Corporation, Dept. H-414-612 So. Flower St., Los Angeles 17.

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**Everybody Benefits with Permalite**

If it's

**PECORA!**

Yes, since 1862, PECORA has played its important part in helping America build its better buildings from coast to coast—building with quality materials—material by Pecora. Across the years, across the country, Time has proved the wisdom of depending on Pecora if you're depending on the best!

Manufacturers of Caulking Compounds, Mastics, Putties, Glazing Compounds, Roof Coatings, Maintenance Finishes, Industrial Enamels.

PECORA PAINT COMPANY, INC. — SINCE 1862 —

315 West Venango St., Philadelphia 40, Pa.
**Eagle 3547N Offers double security for Back doors, Cellar doors, Garage doors, Closets, Out buildings.**

You know that Rim Night Latches should be used in every house you build. It is not a question of where, but which latch you choose to install. This Eagle auxiliary lock with a five pintumbler mechanism and solid brass bolt has the style, plus the security that every new house deserves.

There is no rim night latch that can equal the appeal of this 3547N with its glistening streamlined nickeled knob on its rich black case. It is the height of superiority in Rim Night Latches.

---

**NEW LUXURY HEATING NOW COSTS LESS**

New lower cost of Wesix Automatic Electric Baseboard Panels plus new simplified installations means you can equip your homes with perfect, modern perimeter heating at a fraction of former cost.

Ideal for homes with "picture" windows or rambling style, Wesix Baseboard Panels can be installed as total house heating (economical, too, wherever electric power "end rate" is 2c per KWH or below) alone or combined with famous Wesix Wall Furnaces or as auxiliary aid to central furnace systems.

Send your next set of plans and insulation specifications to your nearest Wesix office for free engineering recommendations and operating cost data.
Kaustine Oil Fired Furnaces are ENGINEERED to deliver maximum heat with a minimum of fuel consumption. This is accomplished by Kaustine's unique "TEAR DROP" Heat Exchanger Systems.

Basically this phenomenal ability to develop quick, even heat is achieved by the controlled course of air around the "Tear Drop" Heat Exchanger, the Radiation Sheets and the Economizer Unit. The latter utilizes the heat from stack gases.

Remember too...that Kaustine's reputation for quality is unsurpassed and their prices are competitive.

Write for full information to Dept. AB-4

There is a Kaustine Furnace or Winter Air Conditioner for every type of home.

THE POPULAR JERSEY "75"
The OIL FIRED HIGH BOY Jersey "75" Automatic Forced Warm Air Furnace. Requires only 3½ square feet of floor space.75,000 B.T.U.'s. Chrome steel fire pot liner. Fully automatic controls. Shipped ready to install. Weight 324 lbs.
"We’ve built 4,000 homes with SKIL Saws exclusively... they’ll outwork any make!"

—says Frank Baxter, Cutting Yard Foreman, Blackfield Construction Company, San Francisco, California

Now building another 400 houses, this company specializes in the development of new communities and is the two-time winner of the National Neighborhood Development Contest.

Comments Frank Baxter, "When you build this many houses as fast as we do, you must have saws that take plenty of abuse. Here in the cutting yard, our SKIL Saws are going all day, because we pre-cut most of the lumber in this project. If our saws give out, we’ll have a crew of carpenters idle. We don’t gamble—we use SKIL Saws!"

The fact that they rely on SKIL Saws alone is finest praise for SKIL Saw quality, sturdiness and performance.

See your SKIL Distributor for complete information or call your nearest SKIL Factory Branch


"YOU CAN SEE THE CUT WITH A SKIL SAW!...

says Wyman Hilburn, Blackfield Carpenter, here using Model 77 to notch studs for a wind brace. "What's more," he emphasizes, "two handles make this job easier, safer, more accurate!"

SKIL SAW—Model 77
One of 13 models. 7 1/4" saw cuts 0" to 2 3/8". Bevel cuts 13/64" at 45°. Time-proven SKIL worm gear transmits tremendous power for tough cutting.
INTRODUCING
ANOTHER HAKO WINNER
for '53

Poly-krome
RESILIENT TERRAZZO TYPE TILE

THE MODERNE IN FLOOR TILE

The multi-color brilliance of HAKO POLY-KROME a resilient terrazzo type tile supplies brand new beauty and sparkle for every room in the home. The vari-colored chips in each POLY-KROME tile lend themselves perfectly to practically any commercial and residential room decorative scheme.

POLY-KROME is inexpensive, easy to install; on or below grade, effortless to keep bright as new, and its inherent toughness gives extremely high wear resistance for years and years.

POLY-KROME is genuinely new...and different! It is modern, gay, and beautiful with long-range economy.

HACHMEISTER-INC.
Pittsburgh 30, Pa.

Send full color catalogs illustrating the new Poly-Krome and other HAKO products.

I would like to see a HAKO representative.

Name
Address
City, State
How to Use this Complete and Useful Buying Guide
for the light construction industry

1. **Keep this AMERICAN BUILDER Catalog-Directory on top of your desk for ready reference. Use it often!**

2. **Turn to any of the 16 Product Reference Sections for specific product information. You can solve most building problems by using this valuable “How-to-Use-It” building information.**

3. **Read the Advertisements—they are just as helpful to you as the editorial pages. Manufacturers want you to get the greatest benefit from their products by knowing how to use them properly.**

Here in one handy, easy-to-use volume is the basic information on every type of building product or equipment. Consult the Directory Sections printed on colored stock in this issue. There are thousands of product listings, several thousand brand and trade names, plus names and addresses of hundreds of manufacturers.
These cards are simple to use. Other side tells you how.

Use these cards to get more FREE building information.

These cards are designed to help you get more information, easily and quickly, on products that are advertised, listed in the Directory Sections, or mentioned in any of the 16 Product Reference Sections.

We pay the postage.

Use these cards, postage prepaid, for detailed information from our Advertisers. It's simple and it's easy. Send the card, will forward it to the manufacturer immediately!
"Not just what to do, but HOW TO DO IT" is the underlying theme of this year’s AMERICAN BUILDER CATALOG DIRECTORY. With another record year of building starts well under way, builders and contractors are more than ever concerned with cost-cutting practical data which will help them build—and sell—homes and other buildings.

The first chapter of the 1953 AMERICAN BUILDER CATALOG DIRECTORY contains detailed plans, drawings, and renderings of seven typical structures, including residences, farm, and commercial buildings. These are presented in the same manner as the regular “Blueprint Home Of The Month” in other issues of the AMERICAN BUILDER, and will serve to:

1. Pin-point application of both familiar and new building products to typical structures and construction situations;
2. Highlight most of the common and some less common but important construction techniques;
3. Provide the working basis for specific plans and data sheets in the other chapters in the book—not just “What to do” but HOW TO DO IT throughout.

The readers of the AMERICAN BUILDER comprise the bulk of independent builders in the country—men who are the backbone of a light construction industry which draws its strength from the concepts of private housing and private enterprise. These builders account for the vast majority of homes and small commercial buildings which are erected, and must have at their fingertips specific information of this kind on new products and building techniques as they are developed.

With over 1,000,000 building starts predicted for 1953, and with more new building materials available since 1946 than in the preceding thirty years, builders have more need than ever for such practical, cost-cutting data. AMERICAN BUILDER’S 74 years of publishing experience in the light construction field qualifies this magazine particularly well to provide builders with that information and service in this 1953 AMERICAN BUILDER CATALOG DIRECTORY.

The structures selected to provide typical construction problems and situations include a couple of old favorites and some very new and modern designs. They are:

PLAN (1) A 1-story ranch type house with partial basement and crawl space. No garage, but one is provided for in the plan.
PLAN (2) A modern ranch type house without basement, with attached garage, brick construction.
PLAN (3) Two-story colonial with full basement and attached garage, modern designing throughout.
PLAN (4) Large, luxury ranch type home with attached 2-car garage, brick and field stone construction, double glazing, air conditioning, lots of “extras.”

(Continued on page 37)
Designing a "Ranch" type house for a narrow lot presents a basic challenge which confronts most architects and builders in heavily built-up urban areas. Mr. Anicka solved this with a plan for a house which can be built on a 50-foot lot with adequate driveway at the side and garage either detached at the rear of the lot or located at the side of the house connecting to the utility room.

Privacy at the rear of the lot is increased by the fence running from house to lot line—also by side location of garage if lot width permits.

While the plan shows partial basement and crawl space, the house can be built either with or without basement. Additional flexibility is gained by making it possible to install a stair to an attic over the basement stairs and increasing the pitch of the roof if additional rooms are desired.

Planned with a simple perimeter outline, approximately 1250 square feet of living area is provided in the basic plan. A single load bearing partition through the center of the house simplifies construction, providing a maximum span of joists and rafters of 14 feet.

Wiring is planned to allow for adequate outlets in every room with special attention paid to kitchen and utility rooms where major appliances may be installed.

Plumbing is economically arranged with lavatory and bathroom fixtures located back-to-back.

Room layout provides a minimum of hall area with no waste space. Traffic patterns from room to room and between living areas are simple and direct.

Bedroom No. 3 can be used as a study with an entrance door to this room leading directly to the reception hall instead of to the interior hall as now indicated on the plan.

The architect suggests that the exterior facing of the house can be either plywood, horizontal or vertical wood siding, or a combination of these or other materials.

Popular features of the plan which make for added living pleasure include a natural wood fireplace, efficient kitchen layout, and ample closet space.

"Walls of glass" are provided off the living and dining areas—behind the privacy of the house-to-lot line fence and at the rear of the structure to give a pleasant view of the back yard.

Optional arrangement of utility room provides space for heating unit in case house is built without basement.
1953 American Builder Catalog Directory

(Continued from page 33)

PLAN (5) A modern dairy barn of functional design with feeding and loafing areas, self-feeders, milking parlor and milk house.

PLAN (6) A small, compact, factory building built around the client's manufacturing processes.

PLAN (7) A unique store with provision for two or three tenants, brick construction, effective metal and glass store front treatment.

The 16 fact-packed chapters that follow cover as completely as space permits every modern construction method and building product of particular interest to the builder in the light construction field. Each chapter contains:

(1) Specific product or building applications;
(2) Plans and detail drawings;
(3) Reference charts, tables, data sheets;
(4) How-To-Do-It and How-To-Install information;
(5) Suggested sources of additional specific information;
(6) Cost-cutting suggestions for profitable building.

This issue of the AMERICAN BUILDER CATALOG DIRECTORY, marks several improvements over its predecessor. In addition to the alphabetical directory of building products contained in the back of the book, each chapter is outlined for ease in finding specific information. Supplementing the alphabetical listing of products are several others. One is an alphabetical listing of brand names identified with the producers of those products. Second, is an alphabetical listing of building products manufacturers and their addresses.

In the main reference data section which follows this "lead" chapter, advertising is included in the chapter which treats the products or construction techniques advertised. This association of advertising with reference data not only saves time for the reader in helping him find quickly both technical data and advertising on any particular subject, but gives him a wealth of additional technical information in the many data sheets provided by manufacturers on their various products. This type of make-up is possible only through great cooperation from advertisers, their advertising agencies, and the numerous trade associations who made many valuable contributions of information and illustration to this book.

The importance of this reference data to builders in the light construction field is clear: there is a continuing market for homes which have been started and will be started this year. While rising costs have forced some purchasers to buy a smaller home than they might otherwise wish, and while changes in credit have made some phases of home building uncertain, it is apparent that the mild shift from a seller's to a buyer's market is coming about because through private construction the housing needs of the nation are finally being met.

1953 home buyers are more choosy, shop around more for quality and durability and livability in a house. AMERICAN BUILDER is proud to serve the light construction industry in meeting these needs by providing technical information services such as this in the 1953 AMERICAN BUILDER CATALOG DIRECTORY.

APRIL 1953

16 FACT-FILLED CHAPTERS

1. Concrete, cement, mortar, plaster, aggregates, and structural clay products
2. Construction machinery, equipment, tools—power and hand
3. Lumber, plywood and hardboard, millwork, stairs and related products
4. Windows, doors, and frames
5. Garages: doors and operators
6. Hardware—builders and finish
7. Heating, ventilating and air conditioning
8. Wiring, lighting, electric fixtures, electrically operated devices
9. Plumbing—fixtures and accessories
10. Prefabricated structures and structural members
11. Metal building products
12. Interior wall, door and ceiling materials
13. Glass, glass block, glazing and caulking
14. Roofing, sheathing, siding, insulation
15. Kitchen equipment, home appliances and built-ins
16. Paint and adhesives
This efficiently arranged ranch-type home is designed to bring maximum economy of useful space. Rooms are arranged not only for shortest traffic patterns, but so that the housewife in the kitchen can easily get to either bedroom or the bathroom without passing through the dining and living areas.

Forced warm air perimeter heating is provided with 6-inch ducts in the edges of the floor slab. This fits in economically with this particular house plan, which is designed to permit a maximum number of variations to suit site, client, and other conditions. A combination insulation and moisture barrier is provided all around the edges of the slab floor.

One interesting feature of this design is that the garage is unusually deep. Space is planned for either storage in the end of the garage, or the creation of a small utility room or laundry by simple partitioning.

The solid brick walls are faced on the inside with ½-inch gypsum board with taped joints, furred out from the brick. Heavy insulating board with built-in vapor barrier covers the ceiling.

The window treatment is interesting in that every pane of glass in the house is of the same dimensions. All windows are designed for standard size single or double glazing, making installation and subsequent replacement if necessary an easy matter. The windows themselves are of various types, some being permanently fixed, and others of the awning type to open out.

Exterior siding is a combination of brick, redwood bevel siding, and either field stone or crab-orchard stone. With the numerous variations possible in room arrangement and locating the garage at either end of the house, suitable changes in siding materials easily give each home built on this plan a distinctive appearance.
This basic plan satisfies all the requirements of the “two children one car” small home buyer. The architect, recognizing the advantages of the 28x25 foot two-story Colonial house in simplicity and economy of construction, maintained the over-all shell and developed modern content and design.

Increased glass area is a keynote; another is the open plan of living room and dining area. The forward position of the attached garage and the porch extension are tied to the front elevation by means of the continuous roof line which carries over and forms a canopy over the front windows. The flat garage roof further emphasizes the effect.

An added upstairs feature is the second lavatory; note that all plumbing is on one stack. If second floor lavatory is not required, it could become a cedar closet. Another alternative is presented on the alternative kitchen plan which would provide direct access from the front hall to the kitchen.
Designed for cozy living, this spacious ranch-type home has the kitchen located in the front of the house so that the housewife can easily command both entrances to the building from one spot.

The living area includes space for dining, a large drop-leaf table providing space for formal dinners. Bedrooms are segregated for privacy, with built-ins including wardrobes and storage-wall treatment between bedrooms and baths.

A dramatic sliding glass wall in the study of opaque patterned structural glass admits sunlight from the entrance hall and may be opened for space or closed for privacy. Liberal use is made of tile and glass on bathroom walls.

Lavatories are built-in with laminated plastic tops over dressing table. Plumbing is copper throughout. A 5-ton cooling and heating unit provides gas-fed forced warm air heat in winter and complete air conditioning in summer.

Modern electrical treatment includes safety outlets throughout, cove lighting and strip-lighting behind valance boards over cabinet-work, and pinpoint lighting over dining area.

The two-car garage has a 4-piece sectional door with radio-controlled operator. An automatic sprinkling system waters the lawn and ancient trees which were kept in place through careful site planning.

Literally wrapped in insulation, floors, walls, and ceiling are covered with glass wool. Flooring is varied, with carpeting on plywood over furring strips, cork tiles, and plank oak being used.

The custom-built fireplace has a raised hearth, with woodbox loaded from outside the house. The brown hand-made ceramic tile roof drains into copper gutters. Double glazed windows have large glass areas fixed in place with vent sections at sides or below.
This modern dairy barn is planned for maximum efficiency, utilizing modern concepts of feeding areas, loafing areas, mechanical handling of feed, and convenient milking.

Concrete footings and foundations support concrete block walls which bear 2 x 12 rough cut joists for the loft. The lines of the roof are supported with interior trusses arranged to give maximum open storage space, as well as by interior cantilever hay and wind brace.

Loft areas to segregate kinds of feed have wire fence partitions to allow adequate ventilation. Space is provided for straw and chopped hay storage, with drop chutes located above feeding areas which are also serviced by conveyors from the silos.

The milking parlor and milk house have a concrete floor elevated above the earth floor of the main pens and loafing areas. Milking parlor is reached by gentle ramps which guide the cows through the milking stalls and out the end of the milking parlor through similar movable ramps. The convenient milkhouse provides ample space for storage and cooling facilities.

Two concrete silos are provided to give ample storage for silage, with provision in the plan for mechanical conveyance of silage to the hay and silage self-feeders located below the hay chutes.

Three spacious and removable calving pens are also provided for, as are a paved barn yard, concrete floor in feeding area for easy cleaning, and easily operated hay doors to the loft.
2\(\times\)6" COLLAR BEAM 24° O.C.

SEE DETAIL "B" FOR HAY TRACK

2\(\times\)6" x 12°-0" HAY DOOR TRACK SUPPORT

2\(\times\)6" x 6" DIAGONAL BRACE

TRUSS EVERY 6TH RAFTER

2-2\(\times\)6" PLATE

SEE DETAIL OF WIND BRACE

2\(\times\)4" NAILING GIRTS 16° O.C.

OR 1\(\times\)6" ROOF BOARDS 4" O.C.

3\(\times\)4" LAMINATED RAFTERS 24" O.C. NAILED FROM BOTH SIDES WITH 200 SPIKES 8" O.C.

2\(\times\)6" STUDS 24° O.C.

1\(\times\)6" T&B FLOORING

2\(\times\)12" ROUGH CUT JOISTS 16° O.C.

ANCHOR BOLT TIES TO FOUNDATION AT EACH CORNER.

MILK HOUSE & MILKING PARLOR FLOOR LEVEL

5\(\times\)4" LAMINATED RAFTERS 24" O.C. NAILED FROM BOTH SIDES WITH 200 SPIKES 8" O.C.

10'-0"

PRE-CAST CONC. LINTEL

2\(\times\)6" JAMB

14 COURSES 8" CONCRETE BLOCKS

AND ONE ROW 4" SOLID BLOCK

2\(\times\)6" ROOF NAILING

RIDGE GIRT WITH 1\(\times\)4

2\(\times\)6" BOTTOM NAILING GIRT WITH 1\(\times\)4

ANCHOR BOLT 1/2" x 11"

2\(\times\)6" ROOF PURLIN

2\(\times\)6" COLLAR BEAM

2\(\times\)6" HAY TRACK

DETAIL "B"

APRIL 1953

Adapted from Midwest Plan No. 72310
This compact, modern factory building, designed for a molded plastic products manufacturer, combines a number of interesting architectural features. With overall dimensions of approximately 100 x 90 feet, it incorporates a floor plan for efficient manufacturing operations with flexibility for changes in production layout plus future plant expansion by building additions in the future.

Built around the operations of the client, foundations and footings support a massive concrete slab floor and brick and concrete walls with attractive face brick.

The offices are completely air conditioned, heating throughout being provided by a forced hot water system using convectors. An employees' lunch and recreation room is provided in the upper deck mezzanine over the lobby and main entrance. This two-level section of the building not only adds interest to the ground-hugging horizontal lines of the elevation, but aids structurally in creating two levels of roof to effect greater headroom in the tool and die room and portions of the molding room and machining and assembly departments.

Long-span overhead trusses and joists were used to create wide areas of clear floor space. Large window areas in walls are supplemented by semi-clerestory window treatment in roof elevations to simplify interior lighting.

A structure such as this presents a number of challenges to the small builder, but the modern techniques and materials at his disposal make it possible for him to construct buildings of this type after careful designing and engineering around the production processes and operations of the company they are intended to house.
Because this modern store building was designed to be subdivided into either two or three stores, 3 separate heating plants, toilets, front entrances and rear entrances were provided in the plan. Each store is heated with a ceiling-suspended oil fired warm air heating unit with a blower. Each also has a 30-gallon domestic hot water heater.

Built without a basement, it has a 4-inch concrete slab floor laid over steel mesh. Long-span joists support the roof and give complete freedom of floor space for aisle, counter, and island display arrangement by the store tenant.

The roof decking has built-up roofing laid on top. Ceiling is metal lath and plaster, with walls also of plaster.

The front of the building is key-noted with the unusual corner entrance treatment which not only capitalizes on the building's corner location, but combines ease of entrance with effective display possibilities for the tenant.

The recessed and angled front windows reduce glare and aid modern merchandising techniques of "putting the whole store in the window" for effectively inviting customers to enter the premises.

This is further enhanced by heavy plate glass and metal frames which make a pleasing contrast to the exterior face brick and polished manufactured granite facing.

Floor covering, lighting fixtures, and interior decoration are left up to the desires of the individual tenant and carried out by him, only the wiring outlets themselves being installed in the original building. Careful site planning provided ample parking area for employees' automobiles and deliveries at the rear of the building, and adjacent land provides parking space for customers.

Windows and entrances make customers "stop and shop"

Designed by
Edwin H. Mittelbusher & Edward M. Tourtelot, Jr., Architects
Chicago, Illinois

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The recessed and angled front windows reduce glare and aid modern merchandising techniques of "putting the whole store in the window" for effectively inviting customers to enter the premises.
FIRST FLOOR PLAN

SCALE

APRIL 1953
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The United Nations Permanent Headquarters
Medusa Waterproofed White was used recently for setting and pointing the marble, for back-up brick work, and in the terrazzo in the main lobby of this international landmark.

Washington Monument
Years ago when the Washington Monument was restored, its marble joints were pointed up with Medusa White Non-Staining Portland Cement mortar. The grout was neat cement and water, of a very thin consistency.

When architects and builders are called upon to build or restore historical landmarks the selection of materials must be on a sound basis of proved dependability. Medusa White Portland Cement, the original white cement, is one of those dependable materials that is chosen over and over again to help construct, restore and protect historical buildings like those above.

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types of cement

In addition to the basic portland cement which serves most of the needs of the construction industry, there are many special types for applications where specific properties are needed. High early strength cement permits concrete to be placed in service and forms stripped more quickly. High sulfate resisting cement is used widely in the West where excessive sulfate chemicals are present in the air and soil.

Air-Entraining Cements

Air-entraining cements contain small amounts of soap-like or fatty ingredients ground up with the normal clinker. Concrete made with these cements, or with other air-entraining agents introduced on the job under careful control, contains billions of microscopic air cells throughout each cubic foot of concrete. These relieve internal pressure on the concrete by providing tiny chambers for the expansion of water when it freezes.

Air-entrained concrete with normal aggregates is from three to six per cent lighter in weight than otherwise. There may be some loss in strength with normal cement-water ratios, which require slightly more aggregate. This may be offset by increasing the amount of cement per cubic yard. Air-entrained concrete has less slump than regular concrete. Because there is no difference in price between regular and air-entraining cement, the latter is steadily advancing in popularity with builders.

White Portland Cement

White portland cement is a Portland cement made of selected raw materials and by processes which will introduce no color, staining, or darkening of the finished product. Water-proof portland cement is made by grinding water-repellent materials with the clinker from which it is made.

Refractory Cement

Refractory cement is not a true portland cement, but is a calcium-aluminate hydraulic cement having many properties unlike portland cement. Refractory cement makes possible the use of concrete for many purposes and conditions where ordinary concrete is unsuitable, such as for furnace and kiln linings and chimneys. Refractory aggregates, such as crushed salvage firebrick, must be used in such mixtures.

The cement used by the Romans in ancient times was a volcanic rock of alkaline silico-aluminate composition, called pozzolana. This cement formed a very stable concrete due to a chemical reaction between the free lime and the pozzolana. Similar characteristics are found in fly ash, and research is under way at the present time to determine the effects of the addition of fly ash to cement. Fly ash, suitably treated with alkalis and combined with portland cement produces a concrete of greater compressive strength and sulfate resistance than is obtained by other cements, on the basis of present tests.

AGGREGATES

Although they are usually considered as inert materials acting as fillers, the aggregates compose some 66 to 78 per cent of the concrete by volume. Aggregates must be clean, free of clay, dirt, coal, silt or other matter which would inhibit proper coating by and bonding with the cement paste.
## Typical Mix Designs for Light Weight Insulating Concrete

<table>
<thead>
<tr>
<th>*Dry Concrete Properties</th>
<th>Mix Proportions by Volume</th>
<th>Field Tests of density</th>
<th>Materials Required for One Cu. Yd. of Placed Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>density (lbs/cu ft)</td>
<td>cement (sacks)</td>
<td>water (gals)</td>
<td></td>
</tr>
<tr>
<td>oven dry</td>
<td>Perlite (cu ft)</td>
<td>per sack cement (pints)</td>
<td></td>
</tr>
<tr>
<td>compressive strength (psi at 28 days)</td>
<td></td>
<td></td>
<td>cement (sacks)</td>
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<tr>
<td>thermal conductivity &quot;k&quot;</td>
<td></td>
<td></td>
<td>Perlite (cu ft)</td>
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<td></td>
<td></td>
<td></td>
<td>water (gals)</td>
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<tr>
<td>35</td>
<td>4</td>
<td>9</td>
<td>1</td>
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<td>29</td>
<td>5</td>
<td>11</td>
<td>11/4</td>
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<tr>
<td>26</td>
<td>6</td>
<td>13</td>
<td>1 1/2</td>
</tr>
<tr>
<td>23 1/2</td>
<td>7</td>
<td>15</td>
<td>1 1/4</td>
</tr>
<tr>
<td>21 1/2</td>
<td>8</td>
<td>17</td>
<td>2</td>
</tr>
</tbody>
</table>

*Based on average aggregate density of 8.0/cu. ft. Strength data based on ASTM type 1 Portland Cement.

Both fine aggregates, such as sand, and coarse aggregates, like gravel, should meet the requirements of “Standard Specifications for Concrete Aggregates,” ASTM Designation C33.

The size of the aggregates depends upon the thickness of the section to be poured. All sand should pass through a 1/2-inch mesh. The maximum diameter of coarse aggregates should not be greater than one-fifth of the narrowest dimension of the concrete member in which it is being used.

### Other Aggregates

In addition to sand and gravel, other materials used as aggregates in concrete include cinders, blast furnace slag, burnt clay, pumice, and expanded vermiculite. Cinder concrete is made of cinders, cement, and water; or cinders, sand, cement, and water. In order to be suitable for concrete, cinders should be hard-burned boiler cinders, free from fine ash, and with a combustible content of not more than 35 per cent by weight. Household ashes are too fine and powdery and should never be used.

Cinder concrete is used for certain classes of work such as roof saddles, floors not designed for carrying heavy loads, and the manufacture of cinder blocks.

Blast furnace slag has found an increasing use as a coarse aggregate for concrete. The slag particles are extremely hard, and because of their pitted surfaces are firmly held in the matrix of cement and sand. Generally,blast furnace slag for concrete work should have a weight of 65 pounds per cubic foot or more, depending on the abrasion to which the concrete is subjected.

(Continued on page 73)
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When you design for or build with concrete, it will pay you to consider the special advantages of Atlas Duraplastic, the original air-entraining portland cement.

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Lightweight Aggregates

Concrete made with the usual types of aggregates weighs on the average about 150 pounds per cubic foot. Concrete of a lighter weight can be produced by the use of an admixture which causes swelling of the mix, or by the use of lightweight aggregates. The admixture has been used chiefly for floor and roof fills, giving a concrete weighing about 50 pounds per cubic foot. The strength of such concrete is less than that of normal concrete, but in such uses strength is not an important factor. With admixtures, the swelling occurs after the concrete has been placed, so that allowance must be made for the increase in volume.

Lightweight aggregates are used in some structural concrete and in precast units such as concrete ma
donry, floor joists, and precast roof slabs. Burnt clay, expanded blast furnace slag, pumice, and expanded vermiculite are some of the materials used. Sand is often added as a fine aggregate to improve the workability of the mix. Concrete weights of from 40 to 110 pounds per cubic foot are obtained, depending on the type of aggregate and the use for the concrete. Higher cement factors are required for given consistency and strength with lightweight aggregates than for concrete using ordinary aggregates.

Lightweight aggregates are porous and must be wet thoroughly before being used. A larger proportion of fine aggregates is generally required, because of the rough surfaces and irregular shapes of light aggregate particles.

Prestressed Concrete

In conventional reinforced concrete, the compressive strength of concrete is combined with the tensile strength of steel. This combination places definite limitations on the thickness and weight of unsupported spans, the size of columns required, and the weight of beams.

The basic theory of prestressed concrete is to eliminate or reduce the tensile stresses to which unsupported areas such as roofs, floors, and the walls of tanks and pipe are subjected. This is done by stretching the reinforcing steel so as to superimpose compressive stresses in the concrete.

The strengthening compressive stresses are induced in prestressed concrete in one of two major ways: by pre-tensioning or by post-tensioning of the steel reinforcement. In the pre-tensioning process, the steel is stretched before the concrete is placed or has set, and is anchored by bond within the concrete. After the concrete has hardened around the pre-tensioned reinforcement, the jack or stretching forces are released. As the steel seeks to shrink back to its original length, the tensile stresses are converted into compressive stresses in the concrete.

In post-tensioning, the steel is stretched after the concrete is hardened, and is anchored externally by means of plates or other gripping devices. In this process, the steel is tensioned against the concrete so that the greater the tension on the steel, the greater the compression in the concrete.

Pneumatically Applied Concrete

Concrete may successfully be applied by pneumatic pressure. Graded aggregate, less than 1/2-inch in size, is mixed with portland cement and placed in a pumping machine from which it is fed into a hose at about 35 to 55 pounds pressure. Water is fed to the nozzle at a pressure about 15 pounds higher than that of the dry mix, and is sprayed on to form a homogeneous concrete. Less water is used with this process about 3 1/2 gallons per bag of cement because the impact force expels excess moisture, air, and uncoated cement.

This concrete may be shot against any appropriate sturdy surface, including earth, to a width of several inches without slumping. This method may be used for building swimming pools, for repairing, waterproofing, fireproofing, and for protecting steel. Concrete blocks laid up without mortar or reinforcing, and shot with 3/4-inch covering of pneumatic concrete have developed over three times the tensile strength of conventionally laid blocks.

Precast Concrete

Precast concrete is used mostly in the form of masonry units — concrete block, sill, slabs, etc. The development of the low-cost concrete block has been made possible largely by automatic concrete block-making machines, in which cement, water, aggregate and coloring are all mixed, formed, compacted and delivered for curing. Many of these machines are capable of producing as many as 10,000 units a day. At the other extreme, there are block machines operated by hand for farmers who have the time and suitable aggregate available for casting their own block. Many contractors find that a small concrete block plant is a profitable side-line, in addition to being a dependable source of quality block.
Although these units are made in various sizes, their dimensions are usually modularly co-ordinated to simplify building problems. Actual dimensions are short 14-inch or 1½-inch of normal sizes to allow for mortar joints. Thus, the standard 8 by 8 by 16-inch unit actually measures 7½ by 7½ by 15½ inches. Concrete blocks are an economical masonry unit for houses because they are relatively large, more quickly set than brick, relatively true to size, and more economical of mortar.

Concrete masonry units may be made to have excellent fire-retarding and acoustical properties. Aggregates may be selected to give light weight or extreme density. In addition to sand and fine gravel, aggregates may include expanded slag, pumice, vermiculite, and other materials.

Structural Units

In addition to all of the different types of masonry units, a wide variety of structural units such as joists, slab sections, and wall sections are precast. Many of these sections are of pre-stressed construction, giving them strength with little weight and permitting many new architectural applications and design treatments.

REPAIRING DAMP BASEMENTS

Dampness or leakage in concrete or masonry basements may occur because of atmospheric moisture on wall or floor surfaces, through leakage of water through cracks, or through gradual seepage of moisture from the surrounding soil. The remedies depend upon the cause.

Condensation

Dampness from condensation may be prevented or minimized by either heating the basement air, dehumidifying the air, or ventilation.

Leakage or Seepage

Before making extensive repairs, the drainage system should be thoroughly checked. Many times, correction of obvious faults in the drainage system corrects the damp basement. Relocation of downspouts or construction of gutters to take runoff water away from the walls is essential. If downspouts are not connected to underground drains, they should discharge into leads that will carry the water away from basement walls.

Repairing Walls from Outside—Repairs are most effective and lasting when made to the earth side of the basement wall by digging a trench wide enough to work in, extending to the bottom of the footing. The wall surface should be thoroughly cleaned by brushing and washing to remove all dirt and loose material. If the construction is of masonry, any loose mortar should be removed to a depth of ½ in. If there are cracks in either the masonry or cast-in-place walls these should be cut back to form a V-shaped groove at least 1½ in. wide and ½ in. deep. Both mortar joints and V-shaped grooves should be cleaned of all dust or other loose material and then wetted before being filled with a stiff cement-mortar consisting of 1 volume of portland cement to 1½ volumes of mortar sand. This mortar is mixed to the consistency of moist earth and should be rammed into the crack with a caking tool.

If the basement walls are of masonry they should then be given two coats of portland cement plaster each ¼ in. thick. The plaster should be made in the proportion of 1 volume of portland cement or masonry cement to 2½ volumes of damp loose mortar sand. The wall surface should be dampened before application of first coat. After the first coat is partly set it should be scratched with a piece of metal lath to provide a good key for the final coat. The first coat should be allowed to harden for at least 24 hours and then dampened before application of second coat. The second coat should be cured by keeping its surface damp for at least 48 hours.

Whether the wall under repair is of masonry or cast-in-place concrete, the final treatment to the exterior surface should consist of two continuous coatings of hot bituminous material. These should be brushed on over a suitable priming coat and should extend from 6 in. above the ground line down over the top of the footing. The second coat of hot bituminous material should be applied with brush strokes at right angles to the strokes used for the first coat. The wall must be surface dry when primer is applied and primer should be dry before the hot bituminous material is applied.

new SCR brick

This new brick is a through-the-wall unit needing no backup materials. Conventional in appearance (it looks like standard Norman brick) the unit can replace present 8-inch wall construction in homes of 1½ stories. Every major national building code permits 6-inch masonry walls for single-family one-story residential construction (9-foot walls, 15 feet at gables). FHA accepts such a wall.

Size of the SCR brick is modular but it can be used with non-modular design as well. The brick is vertically cored with holes of 1½-inch diameter to lighten its weight. The unit weighs about eight pounds when made with the usual clays and shales. Smooth or textured surfaces are available in a wide range of color.

SCR brick is designed for use with furring on which the interior surface materials and insulation can be mounted. Two-inch by 2-inch wood furring is solely recommended, as it

(Continued on page 84)
For over thirty years, Brixment has been recognized as the best masonry cement on the market. Government statistics show that it is by far the largest-selling and most widely-used brand. It is universally considered the standard for all masonry cements.

During recent years, of course, a number of somewhat similar products have been brought out in an attempt to compete with Brixment. But none of them can use the same raw materials and the exclusive Brixment process. Therefore, no other masonry cement combines to such a high degree the same plasticity, strength, bond, water retention, and freedom from efflorescence. It is this combination of advantages that makes Brixment superior to other masonry cements, and especially to any mixture of portland cement and lime.

Brixment is easier to mix...

One bag of Brixment and three cubic feet of sand—this is the simple Brixment mix. Nothing else is needed because Brixment combines the characteristics of portland cement and lime, having both strength and plasticity. No water-proofing admixtures are necessary because an air-entraining and water-proofing agent is intermixed with Brixment during manufacture. As a result, Brixment mortar offers greater resistance to the passage of water. Because Brixment requires no soaking or slaking, it is ready to mix and use the minute it is delivered. Neither men nor materials need be sent to the job in advance of actual work.

The mortar can be mixed in large or small batches as the work progresses, to come out even at the end of the day. When Brixment is used, no supervision is required at the mortar box, to secure mortar that is uniform in strength and color.

Brixment is strong...

Brixment exceeds the Type I and Type II strength requirements for masonry cement of both the Federal and the American Society for Testing Materials specifications. Type II is usually specified when high strength is required.

When Brixment mortar is tested in compression between two brick, at 28 days or later periods, the brick frequently crack before the mortar fails.

Brixment is recommended for any kind of masonry—foundations, load-bearing and parapet walls, for free-standing stacks—for every use where strength is required.

Brixment helps prevent leaky walls...

No water-proofing admixtures are necessary when Brixment is used for mortar. Brixment is water-proofed with an effective air-entraining and water-proofing agent which is integrally mixed with Brixment during manufacture.

Strong, durable bond

Brixment mortar assures a strong, durable bond with the brick because:

1. Its great plasticity and its high water-retaining capacity allow a more thorough bedding of the brick, and a more complete contact between the brick and mortar.

2. It hardens slowly enough to permit deeper penetration and more thorough keying into the pores of the brick.

3. Once formed, a bond between brick and Brixment mortar is permanent, because Brixment mortar does not undergo volume changes sufficient to weaken the bond. Because of these characteristics, Brixment mortar makes a better bond.
Because of this water-proofing, and because of its plasticity, its high water-retaining capacity and its excellent bonding qualities, Brixment mortar furnishes as great protection against leaky walls as can be secured from any kind or type of mortar materials.

**BRIXMENT HELPS PREVENT EFFLORESCENCE**

Efflorescence is caused by soluble salts which are present in almost all masonry materials. When reached by water, these salts dissolve and may be drawn, by evaporation, to the surface of the wall.

Brixment helps prevent efflorescence. The air-entraining and waterproofing agent in Brixment prevents water from saturating the mortar and dissolving the small amount of salts that it may contain. Moreover, Brixment mortar prevents water from percolating down through the wall, dissolving salts which may be in the brick, and carrying them to the surface.

**BRIXMENT IS PLASTIC . . .**

One of the most important characteristics any mortar can possess is plasticity. Within certain limits, plasticity is the greatest single factor not only in the economy of the brickwork, but also in its strength, its neatness, and its resistance to the passage of water.

One of the outstanding characteristics of Brixment mortar is its unusual plasticity. For over thirty years, bricklayers all over the United States have agreed that the workability of Brixment is comparable to that of straight lime putty. This exceptional plasticity makes it easy for the bricklayer to secure neat, economical brickwork, with the brick properly bedded, and the joints well filled.

And because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand and still make an ideally workable mortar.

**WATER-RETAINING CAPACITY . . . . . . .**

Brixment mortar has extremely high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore stays smooth and plastic longer, when spread out on the wall. This permits a more thorough bedding of the brick, and a more complete contact between the brick and mortar. The result is a better bond, and hence a stronger and more watertight wall.

**BRIXMENT FOR STucco AND PLASTER . . . . . . .**

The same characteristics that make Brixment superior to portland cement and lime for masonry make it equally superior to these materials for stucco and plaster.

Brixment is more economical, more moisture-resistant, more plastic and more uniform in color than a combination of cement and lime. It has a slower, more convenient hardening time and since it is used in leaner mixes, hair-checking, crazing and shrinkage are reduced to a minimum. Write for recommended mixes.

Brixment stucco and plaster can be applied over any kind of masonry backing (brick, tile, block, concrete, etc.), or over expanded metal lath. The use of Brixment stucco and plaster over any other backing is not recommended.
HOW SYMONS FORMS
Help To Build Better Foundations
—Easily and Economically

Starting at a corner, panels of the outside form are erected. Spreader ties are placed in position and anchored on the same connecting bolt, locking panels together.

Inside panels join projecting ties. Forms are aligned and braced with walers.

To strip wall remove locking wedges and connecting bolts. Pull panels back easily. Break off tie loops with a ½ twist. Wall is smooth, strong and waterproof.

RENT, BUY or BUILD YOUR OWN FORMS
Symons Forms may be rented for one month or more. Rentals apply on the purchase price. Hardware and construction information is available for those who prefer to build their own forms.

Symons will prepare a form layout and a cost sheet for any type forming job—no obligation. Send a complete set of plans with your request.
STUCCO AND CONCRETE COATINGS

Portland cement stucco is typically composed of one part of cement and three to five parts of damp, loose, well-graded aggregate. Hydrated lime up to 10 per cent by weight of the portland cement may be added as a plasticizing agent for better workability. Proportions should be accurately measured and thoroughly mixed. From three to five minutes of mixing time in a drum mixer is about normal. The most common practice is to use white portland cement with white sand to secure a good white finish coat.

Frame buildings to be stuccoed should have sheathing more than eight inches wide. This is covered with a 15-pound building paper, lapped three inches at joints and flashings. A steel reinforcing mesh is applied with furring nails that space out the mesh $\frac{1}{4}$ to $\frac{3}{8}$ inches. Reinforcing joints should lap an inch and be staggered and lapped three inches at flashings. The building is then ready for stucco application.

Another point to consider in the preparation of the structure is the avoidance of concentrated water flows, through the use of overhangs and downspouts. Hangers, fasteners, and other trim should be in place before the stucco is applied. Flashings should be installed around the tops and sides of all openings, particularly around chimneys that are to be stuccoed. Although stucco is occasionally run to the ground level, it is better to stop about six inches above ground to prevent moisture seeping and staining.

Stucco goes on in three coats, each being applied in one direction so that the mortar does not harden at the edges. Stops should be made only at natural divisions in the work. The first or scratch coat is applied about $\frac{3}{8}$ of an inch thick, and allowed to set for 48 hours. A fog spray is applied, and the second, or brown coat, about $\frac{3}{8}$-inch thick, is applied. Both of these coats are scratched to provide bonding for succeeding coats. The brown coat is permitted to moist cure for 48 hours, and should be air dried for about seven days before the final coat is applied. The finish coat should be not less than $\frac{1}{4}$-inch thick, and is applied after the surface of the brown coat has been moistened.
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the jobs you've turned down because no ordinary plaster could successfully cover without costly preparation.

* dry-wall construction materials
* cracked, chipped PAINTED walls and ceilings
* concrete, brick, glazed tile, etc.

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Superior job performances continue to support claims of substantial savings in time, labor and material when employing the use of NU-WALL!

Easy to use
Easy to apply
Easy to sell

Approved
Preferred
Recommended

Restores old walls to original beauty
Converts new dry-wall or dry-wall that has already been painted to a durable plaster finish!

*Complete valuable information given to all inquiries on request FREE.

WANTED: PROGRESSIVE Dealers, Jobbers, Distributors

NU-WALL MFG. CO.
923 North 19th Street, Milwaukee 3, Wisc.

(Dept. A.B.)
This weather-weakened wall crashed during the night — smashing only a couple of parked cars.

Not good . . . but lucky. Money couldn't pay for the damage done by a falling wall during the rush hour.

Are you protecting every one of your building walls against weather-damage with the only wall coping that never wears out? Vitrified Clay Wall Coping seals off your crucial top courses of masonry. Water can't seep down inside — can't cause decay, crumbling or frost damage. No matter how long it's exposed to weather, Vitrified Clay Wall Coping stays sound and impervious to moisture.

Make sure your building walls are solid. Insist on the permanent weather-protection you get from Vitrified Clay Wall Coping.
Types of Structural Clay Products

There are three general types of structural clay masonry units: solid masonry units, hollow masonry units, and architectural terra cotta.

Solid Masonry Units

Solid masonry units are those whose volume of cores, cells, or hollow spaces does not exceed 25 percent of the total for the unit. Brick is included in this classification, and most solid masonry units produced commercially are marketed as a type of brick. Brick falls into two general groups—building brick and facing brick. Building brick (or common brick) is used primarily as a structural material where appearance is not a factor. Facing brick is used both as a structural material and for decorative purposes, where color, texture, and freedom from defects which would detract from appearance must be considered.

Building brick is graded by Specification 62 of the American Society for Testing Materials, which covers three grades based on resistance to weathering. Facing brick is graded by ASTM Specification 216. This specification covers two grades of brick based on appearance and three types of brick based on factors affecting the appearance of the finished wall.

Hollow Masonry Units

Hollow masonry units are those whose volume of cores, cells, or hollow spaces exceeds 25 percent of the total volume of the unit. Structural clay tile is included in this classification, and covers such types as load-bearing tile, non-load-bearing tile, facing tile, floor tile and others.

Load-bearing tile is used in walls designed to carry superimposed loads and is graded by ASTM Specification C34, which covers two grades based on resistance to weathering.

Non-load-bearing tile is used in walls which support only their own weight, such as interior partitions carrying no superimposed load. Non-load-bearing tile is covered by ASTM Specification C56, which includes only one grade, since such units are intended for use where they will not be subject to weathering.

Structural clay facing tile is graded by two specifications, those of the Facing Tile Institute and by ASTM Specification C212. These tiles are produced in two general types—side construction tile designed to be laid with cells in a horizontal position, and end-construction tile designed to be laid with cells in a vertical position.

Architectural Terra Cotta

Architectural terra cotta is a custom-made product and is hand made by molding or pressing, and also made by machine. The latter type, shaped by extruding the plastic clay through a die, is often referred to as ceramic veneer, and is available in large sizes up to 48 inches in one dimension. Terra cotta is used extensively in veneering and ornamentation and is available in an almost unlimited variety of colors, both glazed and unglazed.

Use the Proper Mortar For Structural Masonry

In selecting mortar, evaluate its properties in terms of the situation where it will be used. Properties to be considered include: workability and water retentivity, bond, durability, strength, volume change, and efflorescence. Desirable mortar properties may be found in mortars consisting of a wide variety of ingredients.

Recommended Mortars

TYPE A: one part of portland cement, 1/4 part hydrated lime or lime putty, and not more than three parts sand by volume. This is a high strength mortar suitable for general use and recommended specifically for reinforced brick or tile masonry and plain masonry below grade and in contact with earth.

TYPE B: one part of portland cement, one part hydrated lime or lime putty, and not more than six parts sand by volume. Type B mortar is a medium strength mortar suitable for general use in exposed masonry above grade and recommended specifically for parapet walls, chimneys, exterior walls subjected to severe exposures, and also for load-bearing structural clay tile construction.

TYPE C: one part of portland cement, two parts hydrated lime or lime putty, and not more than six parts sand by volume. This is a low strength mortar suitable for non-load-bearing walls of solid masonry units, for interior non-load-bearing partitions of structural clay tile, and for load-bearing walls of solid units in which the loads developed do not exceed 100 psf and where exposures are not severe.

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Proper use and application of plaster bases is important in the construction of strong and durable finished walls and ceilings. A secure bond between the plaster base and the plaster is essential to develop strength and resistance to abuse, bumps, and cracking.

Gypsum plaster adheres to a plaster base because a bond is developed which virtually makes the two materials a solid unit. A "mechanical" bond is formed when plaster is pressed through the mesh or holes of the lath, forming keys on the other side. The keys actually rivet the lath and plaster together. This mechanical bond results when plaster is applied over metal lath or perforated gypsum or fiber insulating lath.

A "suction" bond is formed when gypsum plaster is applied over gypsum lath, sheet fiber insulation lath and masonry bases. In these cases the tiny needle-like crystals of the plaster penetrate into the surface pores of the base material by suction. When the plaster sets, the base material becomes "welded" to the plaster. When perforated gypsum lath is used, both suction and mechanical bonds are developed.

The gypsum industry calls attention to a comparatively new product in the building field—a two-inch solid gypsum lath and plaster partition. The new partition has attracted attention because it is a good example of how, in a "wartime economy," gypsum products can conserve on lumber and steel in residential dwellings. Another factor which recommends its use in multiple-unit constructions is its space-saving attributes. Engineers have computed that for every 3½ lineal feet, a two inch solid gypsum
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to get business!

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Cast a perfect step every time. Quick-setting, adjustable 1 to 6 feet. Time and labor saved on a few jobs pays for original cost. Recommendations of satisfied customers increase your business. Agents inquiries invited.

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Milwaukee 12, Wis.

'2 Quik-Way' FURRING CLIPS
Cut your FURRING COSTS 30 to 50%

STUCCO APPLICATION DATA
Amounts of Cement and Sand Required

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Parts by Volume</th>
<th>Thickness of Mortar Coat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/4 inch</td>
<td>1/2 inch</td>
</tr>
<tr>
<td>1</td>
<td>1 1/2</td>
<td>336</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>404</td>
</tr>
<tr>
<td>1</td>
<td>2 1/2</td>
<td>472</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>542</td>
</tr>
<tr>
<td></td>
<td>2 1/2</td>
<td>472</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>542</td>
</tr>
</tbody>
</table>

Performance-wise, the two-inch solid partition withstands cracking from repeated impacts of a 60-pound sandbag falling four feet against the partition.

The Bureau of Standards gives the gypsum two-inch solid partition a sound transmission loss rating of 38 decibels, which is approximately the same rating assigned to three-inch gypsum partition tile, plastered on two sides; hollow metal stud par-

One-inch-long length gypsum lath with grooved or square edges is set into the floor runner, and tie-wired or clipped to the ceiling runner. Adjacent laths must be butted tightly.

STUCCO APPLICATION DATA
Amounts of Cement and Sand Required

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Type of aggregate</th>
<th>Wt. of aggregate pers cu.ft. (lb.)</th>
<th>Wt. per cu.ft. of concrete using aggregate (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burned clay or shale</td>
<td>40-60</td>
<td>100-120</td>
<td></td>
</tr>
<tr>
<td>Expanded slag</td>
<td>40-60</td>
<td>90-100</td>
<td></td>
</tr>
<tr>
<td>Cinders</td>
<td>40-60</td>
<td>110-115</td>
<td></td>
</tr>
<tr>
<td>(plus sand)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pumice</td>
<td>30-60</td>
<td>60-90</td>
<td></td>
</tr>
<tr>
<td>Diatomite</td>
<td>30-40</td>
<td>55-70</td>
<td></td>
</tr>
<tr>
<td>Perlite</td>
<td>6-14</td>
<td>40-65</td>
<td></td>
</tr>
<tr>
<td>Vermiculite</td>
<td>6-10</td>
<td>25-50</td>
<td></td>
</tr>
</tbody>
</table>

NOTE—The areas covered by one barrel of cement or one cubic yard of sand, as given below, are calculated for an average sand and without allowance for waste. In estimating, allowance must be made for waste. Openings are not deducted. When figuring for stucco, the loss of mortar forming the keys for the first coat should be taken into account.

Area Covered by 1 Barrel of Cement in Various Mixes

Available from your "SCR Brick" manufacturer, building material dealers or write
PETERSON PRODUCTS COMPANY
P.O. BOX 462 JANESVILLE, WISCONSIN
To give temporary rigidity to the partition laths, temporary braces are secured to one side only. These braces are 1/4 inch channels secured to the lath horizontally at about third-points of partitions up to 9 feet in height. The channels are secured to the lath with tie wires at the vertical joints between lath panels. Tie wires are twisted over nails on the unbraced side partitions, plastered on two sides with stud spaces filled with mineral wool; and wood studs faced both sides with metal lath and plaster.

The partition is now ready for plastering. A scratch coat is applied to both sides. After the scratch coat sets, a brown coat is applied to the unbraced side. When the brown coat sets, the temporary channel braces are removed, and a brown coat is applied to the side formerly held by the braces. Wooden runner serves as ground or screed strip for the brown coats. Any standard plaster finish may be used.

Prefabricated forms save the builder time and money. The units shown above are of rigidly braced metal panels.

... pointers on bricklaying

POOR WORKMANSHIP—likely to leak. Deeply furrowed bed joints and only partly filled head joints with no mortar in vertical or collar joints allows water to seep in and damage structure.

HERE is good workmanship. Bed joint is spread to uniform thickness. Mortar is only slightly furrowed. Head joints are completely filled by buttering end of brick before shoving into place. Slushing partly filled head joints does not do the job.

NOMINAL DIMENSION of masonry unit is equal to standard dimension plus thickness of mortar joint, as shown above. If nominal length of unit is 12 inches, actual length would be 11 1/2 inches if unit is laid with 1/8-inch mortar joint.

PARING between brick and backing offers high resistance to water penetration.
ANOTHER RCS TOOL! Yes, RCS, makers of the famous SUPER SAW now proudly present the RCS KORNER KING . . . the newest, finest right angle drive attachment that simply "snaps on" your drill.

FEATURES 2-SPEED DRIVES!
Now you can triple the range of your present electric drill. No need to carry an awkward ratchet brace for low speed drilling when materials demand. KORNER KING converts 1/2" capacity drill of 2000 R.P.M. to 1000 R.P.M. with 80% more power. And you reverse gear ratio in seconds! . . . doubling your drill's speed for high speed boring operation by snapping KORNER KING off and on!

DRILL IN INACCESSIBLE SPOTS!
Handy, compact design of Korner King allows use of your electric drill in otherwise impossible locations. Drill between joists and studs, or in tight cramped corners. Extend shaft to penetrate any thickness or to drill aligned holes through any series of obstructions. Do a faster, better job!

BUILT FOR LASTING PERFORMANCE!
Like the famous RCS SUPER SAW, the new KORNER KING is precision engineered for rugged, continuous duty and trouble-free service. RCS KORNER KING features full ball bearing supported shafts, hardened steel gears. It's another RCS tool that's built to last and "pay for itself" over and over again.

INTRODUCING NEWLY DESIGNED RCS SUPER-SPEED BITS . . .
Something really new in bits . . . amazing, versatile and inexpensive! Patented curved cutting blades do faster boring job with less horsepower. Set screw secures replaceable blade to 1/8" shank. Adaptable to extension to indefinite length.

REQUIRE MUCH LESS TORQUE, LESS THRUST!
Impartial tests made at the Mechanical Engineering Shops of the University of Illinois proved that RCS Super-Speed bits need less thrust, develop less torque. In the tests, three 1-inch bits were turned at 1335 R.P.M., traveling through solid oak at .004 inch per revolution. The results:

<table>
<thead>
<tr>
<th>Bit Type</th>
<th>Thrust (lbs)</th>
<th>Torque (ft-lbs)</th>
<th>Horsepower</th>
<th>Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCS Super-Speed Bits</td>
<td>20.0</td>
<td>1.42</td>
<td>.362</td>
<td>normal</td>
</tr>
<tr>
<td>Competitor A</td>
<td>56.0</td>
<td>2.52</td>
<td>.644</td>
<td>hot</td>
</tr>
<tr>
<td>Competitor B</td>
<td>75.0</td>
<td>3.94</td>
<td>1.00</td>
<td>very hot</td>
</tr>
</tbody>
</table>

COOL RUNNING, LONG LASTING!
The thin blade design of RCS Super-Speed bits dissipates heat faster . . . razor cutting action reduces friction to a minimum. Made of extremely hard, tempered, blue spring steel. RCS Super-Speed bits drill clean straight holes through any wood . . . cutting small nails, staying sharp longer. When necessary, blades are easily resharpened or inexpensively replaced.

COMPLETE KIT INCLUDES:
KORNER KING with drive and wood bit shafts;
10 RCS Super-Speed bits 1/8" to 3/16" diameter, one 6" and one 12" extension and an adapter to adapt bits up to 1/2" inches for use with extensions.

* decrease R.P.M. for carbide tipped and slow speed drills
* increase R.P.M. for high speed drilling of sheet metal, etc.
* drill up to 2-9/16 inch diameter holes in hardest wood
* drill in inaccessible spots, between joists and studs
* take bit shaft extensions reaching to any distance

WITH THE NEW "INSTANT SNAP-IN" AND AMAZING RCS SUPER-SPEED BITS!

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.
The ever-growing use of power tools and equipment in the building industry has undoubtedly contributed more to cutting costs and increasing production than any other single factor. This increase in the use of power tools is inevitably accompanied by greater accident hazards.

Builders are becoming increasingly aware that SAFE construction practices are also economical, whether it be in tool and equipment operation, the building and use of ladders and scaffolds, or removing nails from loose boards. Accident costs are not always insured; improved safety records are reflected in lower insurance premiums, in fewer lost man-hours, and in equipment and materials savings. If an improperly anchored hoisting tower falls, injuring a worker, the man’s hospital expenses and lost time may be covered by insurance; but the contractor still must replace or repair the equipment, and is short the services of a skilled and experienced worker.

**Safety Is No Accident**

Contractors with good safety records are not “just lucky.” Safety on the job is invariably the result of careful planning and supervision. Management and executives must be safety conscious. Safe equipment must be provided and maintained. Foremen and superintendents must see that all accident hazards are eliminated or guarded. Men on the job should be taught to prevent injuries to themselves and fellow workers. Adequate first aid supplies must be provided and medical and hospital attention should be available with a minimum of delay.

**Safe Operation of Equipment**

Almost without exception, manufacturers “build safety in” in the design and construction of tools and equipment. It will always be found that the proper way is the efficient way and the safe way to use tools. Correct use does the job more efficiently, safer, faster.

**Power Suppliers**

Basic equipment, such as engines, generators, compressors and transformers is used as a source of power to operate other tools or equipment. Safe operation begins with proper inspection of the equipment when it arrives on the job before setting up for use. Guards over gears and belts, safe oiling devices, handholds, and other safety measures should be checked. Equipment which will be installed for the duration of the job, such as hoisting machinery,
POWER SHOVELS, DRAGLINES, etc. (Operation)

1. Do not overload buckets or booms.
2. Do not undercut the bank.
3. Before hoisting track or materials, give a signal and wait until all workers are in the clear.
4. Never swing a load over an engine or a truck until the driver has dismounted and is in the clear.
5. Load trucks or cars evenly so that material does not overhang the sides.
6. Shut off the power and secure all movable parts before you repair or leave your machine.
7. Use the handhold in getting on or off equipment. Do not jump.
8. Keep floors and running boards free of grease, ice, and debris.

A Profitable Tool with Many Uses!

Barco Gasoline Hammer

Here's why owners of the improved Barco Gasoline Hammer are enthusiastically acclaiming it as "A Profitable Tool With Many Uses!"

- Versatile! Use it for Pavement Breaking... Cutting... Digging... Rock Drilling... Frost Breaking... Rod Driving. Ideal for general utility, standby, and emergency service.
- One man operation. No compressor needed. Easy to take to any location.
- New ignition system—quick, easy starting.
- Quick disconnect at handle for battery cable. Thumb controlled switch.
- Powerful, rugged; up to 1550 strokes per minute.
- Economical! Low first cost, low operating expense, low maintenance expense. Quickly pays for itself.

Ask for a demonstration—See for yourself—ask for our nearest distributor to give you a demonstration.

Barco Mfg. Co.
523 E. Hough St.
Barrington, Illinois
A Chicago Suburb

Ask for This New Bulletin 613

American Builder
vices, good electrical insulation, and so on should be noted and given due weight.

A sound procedure in training operators to work safely is to stress the practices that eliminate the most serious and frequent accidents and to require observance of these habits. Operators should know and observe safe load limits of the equipment. Serious accidents have resulted from overturning machines such as shovels, cranes and bulldozers due to overloading. Taking too large a bite when digging may cause the machine to lurch, throwing the operator against the frame or off the machine, with the possibility of serious injury.

Trucks should be loaded evenly so that the material does not overhang the sides. Loads should not be swung over the cabs of trucks unless the driver is off the truck.

Operators have a definite responsibility for the safety of other workmen in the areas in which they are working. They should be observant at all times of the other work being carried on. Also, workmen in the site area should notify the operator if they will be working in places where they may not be seen by the operator. Operators should not jump on or off equipment while it is moving; handholds should be used; stairs and running boards should be free from ice, snow, grease, oil, or debris.

Machines should be shut down. and blades or booms lowered to the ground when making adjustments, repairs, or lubrication. Good maintenance practices will both prolong machine life and efficiency and lessen operating hazards.

NATION-WIDE SERVICE
American Distributors in principal cities furnish quick service by factory-trained men when repairs are needed. Main office of R. N. Forrester, Chicago area distributor, shown here.

More Speed... More Profits
ON EVERY JOB
with American!

Big job or small job—you’ll do it faster and better and MAKE THE MOST PROFIT with an All-American line-up of machines and materials! They’re performance-proved on finest floors... save labor and insure best results from start to finish!

Depend on American Machines and Abrasives to put a beautiful, super-smooth surface on floors with rapid and efficient sanding, steel wooling and polishing. Use American quality finishes and cleaning materials for wood, cork, concrete, terrazzo, asphalt, rubber, linoleum or plastic. Speed up small tool jobs with American belt sanders, and portable electric saws.

Check your needs now!

SCAFFOLD PLANKS—Safe Center Loads
Douglas Fir (Rocky Mountain Region), Sitka Spruce, White Spruce, Red Pine and Port Orford Cedar. Extreme fiber stress of 1300 pounds per sq. in.

<table>
<thead>
<tr>
<th>Species</th>
<th>Nominal size of plank in inches</th>
<th>Span in feet</th>
<th>2x10</th>
<th>2x12</th>
<th>3x8</th>
<th>3x10</th>
<th>4x12</th>
<th>5x12</th>
<th>6x10</th>
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<tbody>
<tr>
<td>Douglas Fir</td>
<td></td>
<td>2</td>
<td>210</td>
<td>265</td>
<td>315</td>
<td>360</td>
<td>405</td>
<td>450</td>
<td>500</td>
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<tr>
<td>Sitka Spruce</td>
<td></td>
<td>3</td>
<td>210</td>
<td>265</td>
<td>315</td>
<td>360</td>
<td>405</td>
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<td>White Spruce</td>
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<td>265</td>
<td>315</td>
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<td>500</td>
</tr>
<tr>
<td>Red Pine</td>
<td></td>
<td>5</td>
<td>210</td>
<td>265</td>
<td>315</td>
<td>360</td>
<td>405</td>
<td>450</td>
<td>500</td>
</tr>
<tr>
<td>Port Orford Cedar</td>
<td></td>
<td>6</td>
<td>210</td>
<td>265</td>
<td>315</td>
<td>360</td>
<td>405</td>
<td>450</td>
<td>500</td>
</tr>
</tbody>
</table>

SPECSIFICATIONS AND NOTES
For other sizes and some other species, safe center loads may be determined by multiplying tabled loads above by constant indicated for each group.

FLOOR SANDERS
Five models, a machine for every purpose. Super 8" drum; Standard—6" and 12" drums; AMR drum; Little American—8" drum.

ABRASIVE PAPER
New improved American Black Demon and American Combination high quality papers are scientifically improved to give longer life, faster cutting.

FLOOR MAINTENANCE
American Deluxe, for all jobs—polishing, waxing, steel wooling, disc sanding, grinding, 1/4", 3/8", 6" and 14" sizes.

BELT SANDERS
Portable... many uses, roughing to final finish. Sandpaper plane is ten times faster than hand plane.

FLOOR EDGERS
Two models, 7" and 11/2" direct edge sanding edges, closets, stairs, small halls.

FINISHES
American finishes are finest quality—complete line for all floors... . . . deals, finishes, waxes, cleaners.

PORTABLE ELECTRIC SAW
9½" blade cuts 1½" plank at 45°, or 3½" straight cut. Motor develops 2½ H.P. Cuts fast, any position, one-handed operation.

LESTO SAW
Portable electric jig or saber saw for scroll work, dovetailing, cutting, opening, etc. Two models—3½" and 5½" capacity. Sold and serviced by American.

50 YEARS OF PROGRESS
Famous American Machines are all engineered, manufactured, sold, and serviced by American.

AMERICAN FLOOR MACHINES + PORTABLE TOOLS

The American Floor Surfacing Machine Co., 511 S. St. Clair St., Toledo 3, Ohio

Please send latest catalog on the following, without obligation:
- Floor Sanders
- Floor Edgers
- Abrasive Paper
- Portable Electric Saw
- Finishes
- Belt Sanders
- Lesto Saw

Name... ...
Street... ...
City... State...
BIG CAPACITY Handling big boards is a sure, easy job on big Atlas working surfaces. **THE TABLE IS 42” LONG!** Fence, itself, is 32” long, 4½” high. Fence quickly removes for surfacing wide boards.

**REMOVABLE CUTTER HEAD** Atlas cutter head removes for sharpening blades without disturbing their setting. An exclusive feature.

**ATLAS PRESS COMPANY**  
401 N. PITCHER ST., KALAMAZOO, MICHIGAN

---

**CONCRETE MIXERS**

**Operation**

1. To prevent tipping, set the mixer level. On a hill, block the wheels. Before you leave the mixer, land the skip, set the brakes, turn the switches off.

2. Before you start the engine, place the control in neutral. Run the engine for at least 5 minutes before you engage the clutch.

3. Make sure everyone is clear before you move the skip up or down.

4. To crank a motor, keep your thumb beside your fingers and pull up one-quarter turn.

5. Mark the mixer with a red cloth flag by day, a red light at night.

6. Keep away from the drum opening when the mixer engine is running.

7. When exposed to cement dust, wear a dust respirator and tight-fitting clothing.

---

**Concrete Equipment**

Safety in the use of concrete mixers, buggies, vibrators and other tools and machinery begins with proper selection. Gear guards, guard rails for loading skips, enclosures for engines, all should be adequate, and checked before the machinery is set up for use.

Mixers should be set level, with wheels blocked. Planning the location of the mixer is necessary for smoothest flow of materials to the mixer and to the job. In urban locations, street traffic must be maintained with safety to both workers and the public.

Mixer operators should be experienced and familiar with the machinery. The skip should be lowered, brakes set, guards closed, and switches shut off and locked if possible before leaving the machine. All controls should be in neutral before starting the engine. If a crank is used for starting, the operator should not place the thumb around the crank handle; it is preferable to use a rope.

No one should put his head, arms or hands in the mixing drum while it is in operation. Only experienced men should clean the drum out at the end of each pour. If concrete is hardened in the drum, goggles should be worn when removing it. The engine must be stopped and locked out of operation if men are working inside the drum.

The motor must be shut off when the tank is being refueled. Extra precautions should be taken in filling if the motor is extremely hot. Fuel tanks should be provided with a shut-off valve as close to the tank as possible in case of fire.

(Continued on page 97)

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**F. L. Randall, builder, “wouldn’t have without an Atlas 6” jointer.” He saves him time and money in finishing out a house by enabling him to do most of the mill work. Randall considers the Atlas “the best jointer on the market” — likes “its accuracy, the big table and fence, and the easy way the fence can be positioned.”**

Randall's experience is typical. Put an Atlas 6” jointer on the job and you cut time-costs and improve accuracy on almost every surfacing operation. The Atlas handles planing, edging, truing, beveling, and rabbeting fast and accurately. It is especially useful on cabinet work, built-in units, doors, windows, screens.

You'll like its size, speed, and smooth performance. Table is 42” long — precision-ground for smooth work feeding. New two-way tilting fence is 32” long, 4½” high — has positive adjustable stops for 45° settings. 2½” diameter cutter head with 3 blades spins 4100 RPM on large, sealed ball bearings. Exclusive features include a timesaving width-of-rabbet scale, and simultaneous blade positioning.

The Atlas 6” jointer can make money for you. Look into it. Send for the latest catalog.
More of what you want in CHEVROLET Advance-Design Trucks — and here are 4 powerful reasons why:

NEW ENGINE POWER—TEAMED WITH LOWER COSTS! The improved Loadmaster engine with a new high compression ratio of 7.1 to 1, now delivers even more power. This great engine is standard on 5000 and 6000 Series heavy-duty and forward-control models—optional on 4000 Series heavy-duty models. In light- and medium-duty models the Thriftmaster engine offers traditional Chevrolet economy.

NEW STAYING POWER—FOR GREATER DURABILITY! Frames are heavier, stronger, more durable in all 1953 Chevrolet trucks. You'll find greater ruggedness and stamina. You'll find these trucks even brawner and sturdier than Chevrolet trucks in past years—trucks that have long been famous for those very qualities. And this heavier construction brings new comfort and freedom from fatigue to drivers, too.

NEW BRAKING POWER—FOR QUICKER, SURER, SAFER STOPS! Two types of brakes on 1953 Chevrolet advance-design trucks provide greater stopping power and greater durability. "Torque-Action" brakes are standard front and rear on all trucks up to 4000 Series heavy-duty models. Extra-large "Torque-Action" brakes in front, "Twin-Action" type in rear are on Series 4000, 5000 and 6000 heavy-duty models.

NEW ECONOMY—LOWERS COST OF EVERY TON-MILE HAULED! Expect greater economy with Chevrolet trucks. New and greater stamina with extra gasoline economy cuts operating costs, maintenance costs in heavy-duty models with Loadmaster engine. And these great trucks list for less than comparable models of any other make! Chevrolet Division of General Motors, Detroit 2, Mich.
Hardware Week Special (April 17-25)

Special Price on BLACK & DECKER UTILITY Saw and Attachment!

NOW! Black & Decker Utility 6" Heavy-Duty Saw PLUS Depth and Bevel Attachment
Both for only $59.50

One BIG Package — One LOW Price — One REAL Value!

Now, you can get the famous B&D Utility 6" Heavy-Duty Saw... the original "Professional Saw at a Popular Price"... PLUS the handy B&D Utility Depth and Bevel Attachment... in one complete package at one low price!

The B&D Utility Saw beats hand sawing 10 to 1: features abundant power, easy handling, maximum safety, job versatility, and quality construction! The B&D Utility Depth and Bevel Attachment permits depth adjustments from 0" to 1\(\frac{15}{16}\)", accurate angle adjustments from 45° to 90°, or a combination of both!

Together, they give you a terrific value that you'll find hard to beat! For a free demonstration, see your hardware or building supply dealer. For free catalog, write: THE BLACK & DECKER MFG. CO., Dept. H-663, Towson 4, Maryland.

Here are two of four other models available!

7" Heavy-Duty Saw
Cuts to 2\(\frac{1}{2}\)" depth. Has built-in depth and bevel adjustment. Only $88.50

9" Heavy-Duty Saw
Cuts to 3\(\frac{1}{2}\)" depth. Has built-in depth and bevel adjustment. Only $117.00

Black & Decker ELECTRIC TOOLS

PORTABLE ELECTRIC TOOLS

AMERICAN BUILDER
Mixer operators subjected to severe exposure to cement dust should wear respirators of an approved type. Suitable ramps and runways must be provided for handling concrete, and should be kept free from grease, ice, snow and debris.

Power operated concrete buggies should be used only by men familiar with their operation. Excessive operating speeds and overloading should be avoided, and special attention should be given to guarding of belts, gears, and other moving parts. Buggies and wheelbarrows should not be used with underinflated tires. Barrows and buggies having weak or broken bracing should be repaired before being put into use.

Vibrators are powered either by gasoline engines or electric motors. Belt guards are necessary. Worn flexible shaft coverings should be repaired or replaced before use. Engines must be shut off when the vibrator is not in use, and electric units should have a non-locking switch so that the vibrator will not run unattended.

Lumber, Heavy Units and Materials Handling Equipment

Straddle carriers and fork lift trucks are becoming more and more a necessary part of the builders' equipment picture. Their speed and ease in handling heavy loads at low cost effect great savings in time and labor. Increased speed of operation and heavier loads carry with them the need for greater safety consciousness. Straddle trucks should not exceed rated loads or speeds, especially on the highways. Proper securing of the load in transit is essential: the load holding mechanism, whether it is of the fork or claw type, chains, wire rope, or slings, should be inspected each day. Much of the efficiency of these units is secured by the proper carrying devices for different types of loads.

Operators of straddle trucks and fork lifts have an extremely high degree of responsibility for safe operation. Men using this equipment should be physically fit, free from erratic tendencies, and well trained in correct safe operation.

Lifting mechanisms require braking devices to permit safe lowering of loads. Positive locks to hold the load in position in transit are necessarily built into all machines of this type, and require periodic inspection. Limit stops are desirable to prevent over-running.

(Continued on page 94)
WANT TO FIND
—use an on-the-job

A new house becomes a Delta saw-shop for cutting all material. An 8-foot roller conveyor section solidly mounted at each side of the saw makes work handling easy.
One man operating a Delta radial saw cuts all the rough material for a house—everything from foundation to trim—in about 24 hours, saving at least $200 per house in "mill time" alone, says Jack Caruana, veteran home and subdivision builder of Buffalo, New York. Saw output includes studding, joists, hip-rafters, door and window frames, cabinet members and the like. All other sawing is practically nil.

Actually Caruana's radial saw pays for itself over and over again every time two more houses go up.

"Stop in any time we're building and you'll find the saw running," says Caruana. "It never gets a vacation—never needs one. Maintenance—none."

This is the new secret weapon with which alert builders are conquering costs: Delta tool installations at the job. Why not find out about it—to your own handsome profit? Ask your Delta dealer, listed in the Classified Phone Book under "Tools" or "Machinery," and send the coupon for the new Delta Catalog.
“Our Dodge "Job-Rated" Trucks do a real, man-sized job for us!”

How new Dodge "Job-Rated" trucks boost your hauling profits

More money-making payloads!—Just put a Dodge to work for you and watch it go to town on those hefty loads of lumber! Ideal weight distribution lets you carry bigger payloads without overloading. And, thanks to shorter wheelbases and wider front treads, an easy-handling Dodge can wheel through deliveries in less time with less effort. Enables you to make more trips per day!

More power-packed performance!—Get the right power for your job with a Dodge "Job-Rated" truck! Big, burly engines—from 100 h.p. to 171 h.p.—let you tackle toughest hauls with confidence! New super-safe brakes in 1-through 4-ton trucks... no-shift Truck-o-matic transmission available in 1/2- and 3/4-ton models! Your friendly Dodge dealer will gladly give you all the money-saving facts... and he'll make you a mighty good deal!

... says Ernest Lane, Co-owner, Berry & Lane, Napa, California

“To transport building materials at a profit, our trucks have to be as dependable as they are economical to operate. That's why we have bought five Dodge trucks in the last year—everything from 1/2-ton to 2-ton. And we're going to keep on buying them, too!

“Our Dodge 'Job-Rated' trucks do a real, man-sized job for us. We haul material as fragile as window glass and as tough as beam lumber with equal ease in them. Believe me, Dodge trucks are certainly rated to our job!”
**Mall Tool Company**

**Best of All**

**Power Tools**

**Model 72**

**Mall Saw**

$64.50

- 7-inch Blade
- Compact Design
- Rugged Construction

Here's one of the many MALLSAWS you can choose from to meet your exact requirements. This 7-inch blade model has a cutting capacity of 2 1/2"—cuts a 2x4 at 45°. Its many features include: automatic telescoping blade guard, precision, heat treated gears, depth and bevel adjustment and rip guide.

**Model 128**

**Mall Drill**

$34.95

- 1/4" Capacity
- Abundant Power
- Lightweight

For holes-in-a-hurry (big or small) this famous MALLDRILL does a real job. Powerful motor—yet lightweight. Geared chuck, interchangeable handle, locking trigger switch, polished finish. Use in wood, masonry or steel. Converts to hole sawing, grinding, sanding, many other applications. Send for full details on Model 128 and the complete line of MALLDRILLS and MALLSAWS for the building trade.

Get More Information NOW!

- Mall Saw
- Mall Drill

Send me more information about

Name

Company

Address

MALL TOOL COMPANY

7732 S. Chicago Ave. Chicago 19, Illinois

APRIL 1953

Above: Mall Bantam Photo

The easy maneuverability of this truck-mounted crane saves time and cuts costs on many construction jobs. Concrete vibrator (above) makes it possible to compact harder and better grade concrete at less expense and with easier access than by old hand-puddling methods. Floor laying is easy one-man job.

(Continued from page 97)

Men working with crane operators should be familiar with the standard crane signals, and crane operators should move loads only upon instructions from the designated signalman where the load cannot be seen clearly from the crane cab. While there is some variation in different localities and companies on crane signals, those shown in the accompanying illustration are generally accepted in construction work.

All clutches, gearing, sprockets, etc. should be guarded in the cab. It has also been suggested that a wire mesh heavy screen be installed between the winding drum and the operator's cab for protection in the event of cable breakage. Cables should be inspected weekly, and replaced when excess wear is evident, as determined by someone familiar with the work, and having authority to direct such changes. Grapple hooks which show any deformation should be discarded and replaced, as the internal structure is weakened by reforming the hook.

**Trucks**

Only qualified drivers should be permitted to operate trucks. In construction work, trucks are commonly of the heavy duty type, and safe operation demands better than average physical strength as well as driving skill. Each driver should know and comply with all local and state laws concerning truck operation. If a chauffeur's license is required, this should be obtained and carried at all times.

Passengers should be carried on trucks only on the seat next to the driver, except under other conditions as specified below. Riding on the running boards, fenders, or...
RESINIZED® SPEED-GRITS®

Floor Sanding Papers

Anytime your sanders can cut more footage per day with less time out for cover changes, you'll show a greater profit on the job.

RESINIZED SPEED-GRITS Papers can do just that for you. Why? Because they're DURABONDED® for extra anchorage strength and RESINIZED for immunity to high speed sanding heat. That means they resist loading and shedding, retain their hard, sharp cutting edges longer than other papers. You get quicker jobs, lower costs, higher profits.

Want proof? Name the time and place of your next job and we'll have a sanding specialist there to give you a free demonstration.

Write for your copy

The "ABRASIVE GUIDE FOR FLOOR SANDING PRODUCTS" is full of handy information, net prices, etc. Address Dept. AB-4.


bumpers of the truck is not to be allowed at any time. If the truck is used for transporting men, fixed-in-place, but readily removable seats should be provided. It has been found that seats running lengthwise of the body are safer than those running crosswise. A tailgate or crossbar at the back of the truck should be high enough so that men may not use this as a seat. If a truck without seats is used for transporting men, men should be seated on the floor of the body, not standing or sitting on the sides.

Truck tires are subjected to severe usage. Tire changing, removing of tires from rims, and replacing and inflating should be done only by men familiar with this procedure. If the driver adds air to the tires during the day's work, he should protect himself against a bursting tire by keeping the face averted from the tire, and by using the fenders or the body of the truck as a shield.

If trucks are fitted with power take-offs, these should be used only by authorized workmen. The same safety precautions covering the general operation of winches will apply to this work.

Scaffolding

Scaffolding of many types is essential to construction work. The use of scaffolds exposes workmen to definite hazards associated with overhead work. Resulting accidents, usually of a serious nature, include falls of persons and damage or injuries caused by falling objects. The importance of preventing such types of accidents is shown by the fact that falls and falling objects account for one fourth of all accidents and one third of total compensation costs.

Good design and construction dictates that a scaffold be designed to carry at least four times the anticipated load. The erection and removal of scaffolds should be done by men experienced in the work, having enough knowledge of design to insure safety in use. The use of make-shift materials such as boxes, barrels or other unstable materials as supports for scaffolding is not allowable at any time. When scaffolds are erected over sidewalks or other pedestrian areas, suitable protection must be arranged. Suitable means of access, such as ladders, ramps or runways are necessary. Portable ladders are not recommended for scaffolds over 12 feet in height. If used, both top and bottom should be secured, and the top of the ladder should extend at least 3½ feet above the scaffold.

Prevention of scaffold accidents includes more than sound design and construction of the scaffold. Accidents occur on the best scaffold if unsafe practices are permitted in their use. For scaffold work, the first rule should be the selection of men physically and mentally suited to high level work. They should be placed under the supervision of alert and safety minded foremen.

During recent years the use of tubular steel scaffolds has greatly increased. They are recommended, especially for heights of five or more stories. They are fireproof, easily erected and dismantled, and have low wind resistance. This type of scaffolding may either be purchased outright or rented. If rented, the rental may include erection and dismantling.
BUILT FOR
"BIG LEAGUE"
PERFORMANCE

One-Hand Control
No chucking problems
or coupling difficulties

Milwaukee
SAWZALL
PORTABLE ELECTRIC HACKSAW

Cutting thousands of square feet of corrugated aluminum sheets used in the construction of Milwaukee's new mammoth Stadium presented a real problem for us... said Mr. G. J. de Gelleke, Jr., prominent midwest acoustic contractor who handled this job.

"Working against time, we were really up against it trying to make progress on this big job... that is, until we bought our Milwaukee SAWZALL. This wonder tool quickly solved our sawing and progress problems... and practically eliminated the element of sawing fatigue. We gang-cut sheets in jig time and the usual difficult job of making intricate cuts for fitting around pipes, ducts, etc., was turned into a simple, easy task with our SAWZALL.

Investigate the 101 time-saving and cost-cutting possibilities the SAWZALL offers in your own operations. It is the type of heavy-duty sawing tool you've long wanted... and one you can't afford to be without.

Call your Distributor or write us for complete information... Ask for Bulletin SW-5.

MODEL 414

$84.50 Complete with Steel Carrying Case and Blades for cutting all materials.

MILWAUKEE ELECTRIC TOOL CORPORATION
5356 WEST STATE STREET • MILWAUKEE 8, WISCONSIN
SAWS • DRILLS • HAMMERS • SANDERS • POLISHER • SCREWDRIVER • GRINDERS
APRIL 1953
BRADFORD
Metalmaster
ELECTRIC SAWS
give you
• EASIER HANDLING
• SMOOTHER SAWING
• FASTER WORK

Model 160—6” Saw
(20 be furnished with blade on right or left side)
Vertical depth of cut 2”
Net weight 10 lbs. 8 oz.

Model 180—8” Saw
Vertical depth of cut 2 29/32”
Net weight 17 lbs. 8 oz.

Bradford Electric Saws deliver the performance that craftsmen like. With their rugged construction, full power, and advanced design, they make the toughest sawing job seem easy. The fine balance and comfortable grip—the light weight of Bradford saws—mean faster work with less fatigue.

Bradfords are built to last. Ball bearings with permanent lubrication are used throughout. Gears are helical cut to give maximum driving power. Powerful 110 volt AC/DC motor drives the blade with quiet, cool-running efficiency.

It pays to handle these highly efficient Bradford Saws. Write for complete details of the Bradford dealer plan.

The
Bradford Machine Tool Co.
654 Evans Street
Cincinnati 14, Ohio
Precision since 1840

Ladders
Ladders should not be used as working bases except for short periods of time for light work, or in case of an emergency. Ladders, whether purchased or made on the job, should be of sound straight lumber, having side rails suitably in proportion to the length, and with strong, securely fastened cleats or steps.

All workers on the job should observe precautions in the use of ladders:

1. Place ladders so that the distance from the wall to the foot of the ladder is about one-fourth of the ladder height.
2. Do not use ladders as a scaffold or runway in a horizontal position. Ladders are not designed to carry loads in this fashion.
3. Never place a ladder in front of a door which may open toward the ladder unless the door is locked, blocked, or guarded.
4. Do not place a ladder against a window sash or pane. Fasten a board across the top of the ladder to give a bearing at each side of the window.
5. Place portable ladders so that both side rails have even footing. Provide solid footing on soft ground to prevent the ladder from sinking.
6. Never lean a ladder against an unsafe support—loose boxes, barrels, or a round object.
7. If you use a ladder on a roof, securely lash or fasten the ladder to prevent slipping.

Hand Tools
Despite the increasing use of power equipment, many building operations are performed with hand tools, which are still the source of countless injuries. When a hand tool is misused or not in good condition, it becomes hazardous, and may cause injury to the user or some other person.

Behind all hand tool accidents there are one or more primary causes:
1. Use of a wrong or improvised tool, such as a file for a pry, or a wrench for a hammer.
2. Use of a defective tool; a chisel with a badly mushroomed head, a dull saw, or a sledge with a split handle.

FREE BOOK!®
LIFE-TIME
SECURITY
YOUR
OWN
BUSINESS

ANDY PHILLIPS SAYS: "MY Belsaw CIRCULAR SAW SHOP GIVES ME BIG PROFITS . . . CAN RUN 35 TO 40 SAWS IN AN 8-HOUR DAY . . . THAT MAKES ME $40 CASH.

You can get your Belsaw CIRCULAR SAW SHOP rushed to you. You can make $1 to $5 an hour in your SPARE TIME, sharpening and setting CIRCULAR SAWS for builders, lumber yards, factories . . . . No Extra Equipment needed, no canvassing . . . . send postcard for your Free Copy of "Life Time Security" today.

BELSAW MACHINERY CO
4503 Field Building Kansas City 11, Mo.

Diesel-powered crawler tractor filling in around basement.
BONUS QUALITY

STRONG...
IT BUILDS BETTER

UNIFORM...
IT LOOKS BETTER

TRUE...
IT GOES UP FASTER

THAT'S WHY LITH-I-BLOCK BUILDING COSTS LESS!

Quality in the concrete masonry you specify is directly measured in dollars and cents saved. And, with Bonus Quality Lith-I-Block, you will achieve the greatest savings, every time for this Prince-among-block gives you three-way superiority that assures a bonus value for every dollar you spend.

Lith-I-Block is accurate in every dimension so that masons can work faster with far better results. It never requires costly and time-consuming cutting and fitting and its smooth, true edges present no handling problems. As a result, you accomplish a savings in labor alone that is reason enough to specify Lith-I-Block for every job. But Lith-I-Block quality doesn't stop there! It has an almost unbelievably uniform texture ... a surface quality that makes the most beautiful wall you've ever laid eyes on. And your Lith-I-Block wall not only excites a craftsmans pride in good work, it also pays an extra bonus in customer satisfaction that builds your reputation and your business.

Another Lith-I-Block bonus that will pay you many times over is its rock-like internal strength. No matter what aggregate you prefer or what type of block your job calls for, you can be sure that your Lith-I-Block manufacturing process agitates the aggregate as it is fed into the mold box so that every nook and corner is properly filled. There are no lumps or voids to create weak spots and cause you grief when the job is done.

Yes, Lith-I-Block is good to look at, easy to handle and thoroughly reliable. It is the quality block that is made to serve best in modern building ... and save you money at the same time.

WRITE FOR THE NAME OF YOUR NEARBY LITH-I-BLOCK PRODUCER

LITH-I-BLOCK

Lith-I-Block is made to rigid quality standards on Machines manufactured by the Lith-I-Bar Company, Holland, Michigan.
LADDER JACKS
- ONE-MAN Ladder Jacks (left) adjust to any pitch on either side of the ladder.
- Weight distributed on three rungs.
- New, rail-type jack (right) uses side rails of ladder for extra safety.

SCAFFOLD BRACKETS
- Erected and dismantled faster than you can build a make-shift wooden scaffold.
- 3 and 3½ ft. lengths—rail carbon steel.
- Nail, studding and bolt-attached types.
- New, rail-type jack (right) uses side rails of ladder for extra safety.
- Attachments to convert any one type to any other type.

Write for Catalog M: complete information on all "Trouble Saver" Scaffolding Accessories.

The Steel Scaffolding Company, Inc.
86 Humboldt Street, Dept. AB, Brooklyn 22, New York
Telephone: EVergreen 3-5510

NEW MODEL 2000 J

DREMEL ELECTRIC SANDER

MODEL 2000 PRICE INCLUDES—
- A full-size case for easy portability to and from jobs. Also 25 assorted abrasive sheets and a shop-keeping pad.
- $24.50

If your Dealer cannot supply, order direct from factory.

DREMEL MFG. CO., 2414-18th St., Racine, Wis.
Write for FREE Dremel Power Tool Catalog.
HERE’S WHY...
"4 OUT OF 5"
BUY CLIPPER

- CUT FASTER
- LAST LONGER
- AT LOWER COST

Clipper Superior Blades are guaranteed to...
"Provide the Fastest Cut...
at the Lowest Cost!"

MODEL C-130
ONE OF 5 MODELS
GAS OR ELECTRIC
POWERED

Clipper Superior Blades are manufactured under rigid control... assuring consistent quality. You are guaranteed peak performance... at the lowest possible cost with every blade.

CLIPPER BLADES to fit
Every Make and Model Masonry — Concrete — Hand Power Saw

Your guarantee of the finest, fastest, most economical masonry and concrete cutting is the familiar Clipper Trade Mark on a Wet Abrasive — Dry Abrasive — "CBR" (Break-Resistant) — or a Diamond Blade.

Nearly 20 Years Experience Behind Genuine CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by nearly 20 years of world-wide experience, the ability to select the finest materials and the "know-how" to put them together.

CLIPPER BLADES...

- Faster Cutting
- Economical

Today!... try the NEW
Faster Cutting—Economical CLIPPER SUPERIOR BLADES

Why guess about performance? Why experiment? Why take a needless loss? At our 24 locations you will find a Clipper Specialist who can tell you exactly which Clipper blade will give you the fastest cut at the lowest cost on your materials.

CLIPPER MANUFACTURING CO.
2608 W. WARWICK • KANSAS CITY 8, MO.
Send FREE Literature and Prices on:
• CLIPPER ABRASIVE BLADES
• CLIPPER "CBR" (Break-Resistant) BLADES
• CLIPPER DIAMOND BLADES—MASONRY
• CLIPPER DIAMOND BLADES—CONCRETE

SOLD ONLY DIRECT FROM FACTORY BRANCHES
BUILD PROFITABLY
and SAFELY with Safway tubular steel scaffolding—first in the field

SAFE SCAFFOLDING MEANS FAST, ECONOMICAL BUILDING. Safway scaffolding is safer in more ways than any other scaffolding you can mention. Thousands—yes, thousands—of construction firms, contractors, industrial firms are using millions of dollars worth of Safway scaffolding to speed their construction projects safely and efficiently.

For more information contact the Safway representative in your city, or write to Safway Steel Products, Inc.

Tower of Strength

Corrosion Resistant

Weather and corrosion won't hurt the Safway scaffolding used in this 185 foot ski slide in Los Angeles. It's corrosion and rust resistant. Special phosphate bath converts surface of Safway steel scaffolding to non-metallic oxide. Baked-on weather resistant paint gives extra protection.

Assembled to Fit Contours

Time-Saving and Safe

No wonder builders like balanced Safway steel scaffolding! It's engineered for structural stamina. Easy-to-assemble units speed erection of scaffolding and make dismantling simple. Pictured here is the lowest cost steel scaffold on the market for loads up to 50 lb. per sq. ft. with heights up to 50 ft.

SAFETY INSTRUCTION CARD No. 188

1. Use only wrenches in good condition, and the right wrench for the job—never a substitute.
2. If working in a tight place, take care that your grip on the wrench will not endanger you. Make sure there is plenty of clearance.
3. Never use an extension on a wrench.
4. Always face an adjustable wrench forward; in this way the handle is to turn. (Note the illustration.)
5. See that the bite of an adjustable wrench is taken near the middle of the jaws, so there will be teeth in front if the wrench slips. Keep the teeth sharp.
6. Do not overstrain a small wrench; never subject any wrench to a severe side strain; use a wrench as a hammer.
7. A bent wrench, if straightened, has been weakened; get a new wrench.
8. Do not attempt to use a wrench on material that is in a machine in motion; stop the machine before working on the material.

SAFETY INSTRUCTION CARD No. 188

Crowsbars. When a crowsbar is needed, the proper shape and size should be obtained. Molds of such as a piece of pipe or reinforcing rod should not be used, as they might slip and cause injury. The crowsbar should have a point or toe of such shape that it will grip the object to be moved, and a heel to act as a pivot or fulcrum. In some cases, a block of wood under the heel will prevent slipping.
6 Jaeger machines that cut your building costs

Jaeger's shorter mixing cycle gives you more batches per day

5 to 7 seconds charging with Jaeger's "Skip Shaker" loader, equally fast discharging with Jaeger's bigger bucket and flight blades, shortens every mixing cycle, gains time for extra batches, bigger yardage every day you work.

No risk of "down time" either, in your busy season. Jaeger mixers roll on chilled Timken bearing rollers and tracks of high carbon steel machined true on the drum. Heavy duty automotive transmissions and bigger engines with power to spare give years of reliable service. Sizes 6S, 11S, 16S. Ask for Catalog M-10.

3½ and 6½ ft. Plaster-Mortar Mixers save labor and plaster

Jaeger "Power Hoe" Plaster-Mortar Mixers, with their multi-blade pug mill mixing action, supply better mixed, easier spreading material that is full strength even when carrying more sand. Equipped with Timken bearing drum shaft with Jaeger leak-proof bearing seals, bigger Wisconsin engines with automotive transmissions and drums of heavy gauge steel. 3½ ft. model is big producer in compact size — only 34" shoveling height, only 29" wide.

3½S Auto Loader produces more yards per day

The "Auto Loader" with Power-Shaker Hopper produces 12 to 15 more yards of concrete daily with no increase in wages. It can be loaded while previous batch is being mixed, then hopper automatically shakes load into drum in a flash. The "Auto Loader" is engineered for long life... machined steel drum tracks, automotive transmission.

Jaeger self-raising "hoister" tower "saves as much as $59 a day"

One contractor tells us of a typical example. He did the work of 10 to 12 hodders with 2 wheelers and his hoist operator.

Assembled on ground, raised by its own power and easily moved as needed on its own skid base, this 1-ton Hoister tower eliminates hodders and scaffolding. It operates either material cage or 1 yard bucket. Standard height is 37', can be extended to 67'. Automatic safety device positively prevents falling should cable break. Send for Bulletin HS-1.

"New standard" compressors

15% to 20% larger capacities (75 ft. instead of 60; 125 ft. instead of 105, larger sizes proportionate). Maintain 90 to 100 lbs. pressure at modern tools, instead of weak 70 lbs. Increase work output 30-40% with same men and tools. Catalog JC-1.

"Sure prime" pumps

Heavy duty construction and big capacity in light, portable small units — ½" and 2" sizes in aluminum or semi-steel, 5100 to 10,000 gph. catalog P-10.

THE JAEGER MACHINE COMPANY

521 Dublin Avenue, Columbus 16, Ohio

Sales, Rentals and Service in 153 Cities of the U.S. and Canada

APRIL 1953
Today — VIBRAPAC Modular Concrete Masonry Units are available in a variety of attractive designs. These designs enable any architect or builder to originate plans that will give a home, or other building structure, both pleasing appearance and individuality.

Besser Super Vibrapac machines are versatile. They make ALL types and sizes of high-quality masonry units on ONE set of Plain Pallets. What's more, the Vibrapac machines are fast and dependable. They set the pace for modern, automatic production and handling devices, producing maximum output of high-quality block with no down time.

Sell your customers on the BEAUTY as well as PERMANENCE of Vibrapac Concrete Masonry for both exterior and interior construction. It assures a lifetime of better, safer, more satisfactory living.

BESSER MANUFACTURING CO., Alpena, Mich., U. S. A.

Front Pallet Feed VIBRAPAC . . . the fully automatic concrete block machine. One man removes finished block with power off-bearing hoist and, with no lost motion, returns empty pallets to the Vibrapac machine.

FREE BULLETIN — Ask for copy of bulletin illustrating the many standard masonry units that can be made on a Vibrapac.
Crowbars not in use should be stood up so that they will not fall, or laid down where they will not create a stumbling hazard.

Jacks. A jack with a high enough rated capacity for the job must be used. It is good practice to block the load being raised, to prevent its dropping if the jack should slip or fall. Jacks should be in good condition, well oiled, and should be set firmly on a solid footing. The jack handle should be removed when not in use, as it might be struck by a passing employee or vehicle, knocking the jack from under the load and causing serious damage or injury.

Wrenches. An adjustable wrench should be placed on the nut with the open jaws facing the user if possible. In this position, the force applied tends to urge the wrench end of the handle. However, when the wrench was reversed, it began to slip with 75 to 100 lbs. of pull. Consequently, the lower jaws on adjustable wrenches are weaker than the fixed jaws. One manufacturer found that a 10-inch wrench used commercially was designed to be long enough to the breaking point. Wrench handles should be applied to that particular wrench.

Too small a wrench will not give a proper grip or leverage. Too large a wrench may break a nut or fitting causing a slip or fall.

The use of a pipe slipped over the handle for added leverage can strain either the wrench or the work to the breaking point. Wrench handles are designed to be long enough for the maximum safe pressure to be applied to that particular wrench.

Screwdrivers. The common screwdriver is probably the most used—and abused—tool. The practice of using screwdrivers as punches, chisels, wedges, and pries should be discouraged. If so used, they will become unfit for the work.

1. Keep the knife sharp. Be sure it has two good handles.
2. Place the material to be cut in a vise, if possible, where it will be held securely.
3. When sawing or trimming with a drawknife, be careful not to cut too large a piece for a vise, make sure that it is clamped securely.
4. Never attempt to brace the piece to be cut with your knees or any other part of your body.
5. When sawing or trimming with a vise, always have the vise jaws or the knife Workbook, where it cannot fall or be touched accidentally.
6. Hold the drawknife steady toward you, taking a moderate cut rather than a deep one. Strains are caused by lumbering with the knife and pulling too hard.
7. Pull the drawknife steadily toward you, taking a moderate cut rather than a deep one. Strains are caused by lumbering with the knife and pulling too hard.
8. When finishing the piece of lumber in the vise, or when stopping work temporarily, lay the drawknife up on the workbench, where it cannot fall or be touched accidentally.
9. After the job is finished, either hang the drawknife up securely, or, preferably, put it away in your kit box or drawer.

Screwdrivers

1. Never use screw drivers with split or splintered handles.
2. Always use a screwdriver that fits the screw.
3. Dress the point if it is right, worn, bent or broken.
4. Use an awl, auger, drill, or driven nail to start each screw. On rough work use a hammer.
5. Place the work on a flat surface; do not hold it in your hand.
6. For electrical work, use screwdrivers with insulated handles.

How To ...... BY MASTER

MARK STUDS FASTER

Insert two identical lengths of glass pipe into the ends of a length of hose. Fasten stakes to each end (as indicated). Fill the hose with water and insert plug into each end. Drive the stakes into the ground to get approximate level. Remove plugs and adjust stakes so level water is equal on both sides.

EASY WAY TO FIT A THRESHOLD

Lay a piece of scrap tarp across the threshold to be fitted. Lay the edge of the door, Grommet, against each end (as indicated), and scribe. Now place sash or frame under the threshold, and scribe so that you can make a perfect cut every time. To get most accurate measurements, plus a rapped blade which tends to groove will not work on any steel tape blade made, try the Master Tufboy. Available in 6, 8, and 10 ft., satin or “Brite Blade” finish. See it at your dealers today.

TUFBOY

- For an inside measurement add 2 inches for Case and Tip.
- Blade replaceable without tools.
- Blade is graduated on both edges.

WHEN YOU BUY YOUR NEXT STEEL TAPE: ask the dealer to show you the new Master Tufboy tape. You get a rugged die-cast case, plus the world’s most accurate and durable tape... and the blade is replaceable too.

AS A SERVICE TO YOU:

Each month as a service to you we will print the finest building short-cuts available. Why not make a scrap book or card index file for handy reference? If you would like detailed literature on the points discussed drop us a card. If you have a short-cut which you feel we can use send it to "HOW TO", care of Master Rule Co., Mulbery St., Middletown, N. Y. and if we use it, you will send you free of charge your choice of any wood rule or steel tape in the Master line. All entries become the property of the Master Rule Co. and will not be returned.

ADDRESS

Please send literature on the Tufboy □
I am enclosing a "HOW TO" □
If you use it please send me □

SAFETY INSTRUCTION CARD No. 255

SAFETY INSTRUCTION CARD No. 257

MARK STUDS 16" APART

MARK STUDS FASTER

MARK STUDS FASTER

Nail marks 16" apart

FOR ACCURATE FOUNDATION LEVELING

STAKe STAKe

BURGUNDY GLASS PIPE

DRAIN PIPE

RUBBER HOSE

"GLASS PIPE?

4 GLASS PIPE"
For Fast Accurate Crane Work...

THE
BUCYRUS-ERIE
22-B

Erecting structural steel, pile driving, placing and removing forms, loading and unloading construction materials and equipment—these are just a few of the many construction applications of a Bucyrus-Erie 22-B crawler crane. And it can do each job for you at considerable savings in time and money. Here's why:

High Maneuverability lets the 22-B work anywhere you want it, whenever you want it.

Independent Boom Hoist permits boom angle to be changed while machine is swinging or propelling, while load is being hoisted or lowered.

Accurate Reliable Boom Control with both raising and lowering full power-controlled by one lever makes it easy to maintain fast operation. A friction clutch on front drum shaft controls hoisting with speed governed by engine throttle. And, an automatic silent ratchet pawl prevents boom from lowering faster than front drum shaft is turning with consequent light service on brake.

Open-Throated Boom makes it easy to rig for 2, 3, or 4 parts of line without taking off sheave guards.

BUCYRUS-ERIE COMPANY
SOUTH MILWAUKEE, WISCONSIN

they are intended to do. Moreover, a broken handle, bent blade, and dull or twisted tip may cause the screwdriver to slip and cause a serious hand injury.

A screwdriver tip should fit the work. A sharp, square-edged bit will not slip as readily as a dull one, and requires less pressure. Tips which are rounded or dull should be filed rather than ground, as the heat from grinding may draw the temper. Insulated screwdrivers should be used on live electrical work—a practice which should be generally avoided if possible.

Hammers. Hammer handles should be securely fastened to the head with wedges or screws. The handle should be of the correct size and length, smooth, and properly shaped to fit the hand. Selection of the right hammer is important. One that is too light is as bad as one that is too heavy—both are hard to control. Carpenters' or claw hammers are designed primarily for driving nails, and should not be used with cold chisels or other hardened tools, as the heads are so tempered that they may chip, causing injury.

Hand Power Tools

The general types of hand power tools include:

1. Abrasive tools such as portable grinders, sanders, polishers, and bench and flexible shaft grinders.
2. Drills.
3. Saws, other cut off tools, routers, etc.
4. Assembly tools such as screwdrivers, nut runners, etc.
5. Hammers.

The selection of the right tool for the job is an important factor in preventing accidents. In addition to selecting tools of adequate capacity for the work, of good quality, other factors which may be considered are:

Motor rating
Spindles, gears, bearings, etc.
Cables, plugs, grounding connections
Chuck
Weight and balance
Other limiting factors, such as the need for working in close quarters, etc.

Portable electric tools are designated as "light duty," "standard duty," and "heavy duty" according to the frequency of use cycle and the nature of the work to be performed.

(Continued on page 116)
Long considered the finest tractor-loader combination in its class, the Oliver-Ware Model "B" is now built for even greater performance. There are now 5 lower track wheels instead of 4, and the front idler wheel is considerably larger. This means you get more track on the ground, greater stability, more traction, easier handling all the way around. It means faster loading cycles, more work done per day, lower costs and more profits for you.

You still get the hydraulically-controlled Ware loader—designed and built exclusively for the Oliver Model "B" Crawler. 110° bucket rotation and 28° "tilt back" give you a full bucket every time. Bucket level is automatically maintained when lifting load, preventing wasteful spillage. You can control speed of discharge. And, even with the "tilt back" action, you still have a 32° (from vertical) dump angle... a control range no other loader can surpass.

For complete information on how the Oliver-Ware Model "B" tractor loader can cut costs for you, see or write your Oliver Industrial Distributor.
The Model 450 Remington Stud Driver is the most efficient fastening method in use today. Its exclusive advantages are unequaled by any other powder-actuated tool.

You get consistently straight driving on every type of fastening job with the long heel cap on all Remington cartridges. It acts as a perfect gas seal and provides extra power. These colored heel caps clearly mark the six different 32-caliber powder loads that are available. You can select the right cartridge for each job quickly and easily.

The Remington Stud Driver needs no separate parts for power control or loading—nothing to lose or break. Just a twist of the wrist opens the Model 450. Insert stud and power cartridge as a unit . . . close and you're ready. Triple safe, this superior tool has a separate lever that must be depressed and held with one hand before and during squeezing of the trigger with the other hand. Two additional devices prevent operation except in proper fastening position.

Completely self-powered, the Model 450 sets up to 5 studs per minute in fastening steel or wood structural pieces to concrete or steel surfaces. Its light weight—only 5 1/2 pounds—makes it ideal for use overhead or in confined spaces. To speed operation further, an exclusive ejector snaps the fired case out of the tool instantly—no fumbling, no tools needed.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by Remington Arms Company, Inc., America's oldest sporting arms manufacturer.
DO NOT USE THESE SCAFFOLDS!

- Shore Scaffold
- Lean-To Scaffold
- Double Scaffold
- Do Not Use

Types of scaffolds which should not be used.

This heavy portable drill may be used for construction and maintenance work. Drill has interlocking reversing switch, can be equipped to do nut-running and lag-screwing.

<table>
<thead>
<tr>
<th>Working Load Limit, in Pounds, for New Heat Treated Alloy Sling Chains (based on manufacturers’ specifications)</th>
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<tbody>
<tr>
<td>Diameter of Link</td>
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<tr>
<td>inches</td>
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<td>5/8</td>
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<tr>
<td>2</td>
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<td>2 1/4</td>
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</tbody>
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Note: If three-leg slings are used, the working load limits given for double two-leg slings may be increased 25 per cent and for four-leg slings 50 per cent, i.e., the working load limit for a new 5/8-inch, three-leg sling at 60 degrees with the horizontal is 14,250 pounds and for a new four-leg sling of the same size and at the same angle is 17,100 pounds.

DEMOUNTABLE DRUM CUSHION CHANGES IN MINUTES

Why let damaged drum cushions tie-up floor sanding 12 to 24 hours? HOLT demountable drum cushion (patented) can be replaced in minutes by the operator right on the job...so sanding goes on almost without interruption.

You cover more floor, too, with HOLT high-speed cutting. Sure-grip clamps keep paper "in." Self-adjusting, double belts stay tight. Correct design and dynamic balance eliminate chatter and vibration... assure smooth, craftsman-like work.

Do floor jobs the easy, time-saving HOLT way. For further information and name of nearest dealer, write your name and address in margin of this ad and mail TODAY.

For floors that make happy home owners, wax and polish with HOLT floor machines.
A portable tool presents many of the same hazards as a stationary machine, in addition to those of handling. Potential results of these conditions are electrical shock, burns, cuts, bruises, falls, strains and explosions due to the ignition of vapors by electrical sparks or friction.

These hazards can be considerably reduced by safe operating practices, choice of safe tools, and proper tool maintenance. Because of the sparks from brushes and commutator, portable electric tools should not be used in any area of inflammable gases, vapors, or dust, unless designed specifically for this work.

PORTABLE ELECTRIC TOOLS

1. Use only equipment that is in good condition.
2. Take good care of it.
3. Do not overstrain the tool, thus overloading the motor.
4. Be sure the tool is properly grounded.
5. Report the following unsafe conditions:
   - Defective or broken insulation on cord.
   - Improper or poorly made connections to terminals.
   - Broken or otherwise defective plug.
   - Loose or broken switch.
   - Brushes sparking.
   - Switches should be guarded to prevent starting by accidental contact with other objects.

Fatal electrical shocks have been caused by failure of the insulation between the current-carrying parts and the frame of the tool. This hazard may be reduced by grounding the frame using three conductor power cord, by using tools having insulated exterior surfaces, by providing supplementary insulation for the operator, or by a combination of these measures.

Switches for portable tools should be well made, as no other part of the tool is probably subject to as much hard wear and tear. Switches should be of the safety type, which will operate only when held in position by the operator, and should be guarded to prevent starting by accidental contact with other objects.

Grinding Wheels. Grinding wheels mounted on the arbors of portable tools are subjected to extremes of abuse. They should be

(Continued from page 112)
Put a HOMELITE CARRYABLE PUMP on YOUR Job and Eliminate Delays

On any repair or construction job, water causes delays. And delays cost money... particularly when men have to stand around idle.

Put a Homelite Pump on the job and watch those delays disappear. In no time it gets to the job... no trucking problems, no planking, no pushing, no pulling. One man carries it and sets it up right where you need it. Quick starting... and with the fastest self-priming... a Homelite will pump up to 15,000 gallons per hour without clogging or trouble. It draws water 28 feet and of great importance it will keep seepage at strainer level automatically.

Figure it out, with the time... which is money... saved by a fast-action Homelite it wouldn't take many jobs to pay for a Homelite. Possibly, one job would be enough. Write for a free demonstration.
BLACKHAWK
A LOW COST, MOBILE VERSATILE, TRENCHER

A Ford or Ferguson tractor mounted, versatile, small trencher with big trencher performance, digs up to 800' per hour, with wide range of depths and widths—up to 7' deep, 20" wide. One man and a Trench Hog do the work of 40 hand laborers. Ideal for builders, plumbers, electrical contractors, utilities, municipalities and pipeline contractors.

- Depths accurately controlled, hydraulically.
- Cutters furnished in 6" to 20" widths. Easily changed to suit the job. Special cutters for tough soils and frozen ground.
- Optional equipment includes one side dirt delivery attachment to deposit spoil on either right or left side of trench.
- Crumbers available to provide clean, smooth, accurate trench bottom.
- Choice of 7 digging speeds.
- Independent wheel control for straighter line trenching and turning corners.
- Boom raises upward about 90° for transport.
- 4' bulldozer available for backfilling.

THOUSANDS IN USE—EVERYWHERE

J. M. J. tile cutters

Tools of quality for quality workmanship. Each J.M.J. cutter is expertly and exactly designed for the types of tile designated.

BLADE RESHARPENING SERVICE

DEALER RENTAL PROGRAM AVAILABLE

Write for bulletin AB-1 and nearest distributor TODAY.

J.M.J. INDUSTRIES INCORPORATED
BELLEVILLE, ILLINOIS

ASSEMBLE STURDY SAWHORSES!

Quickier ... Easier ... Better WITH HEAVY-DUTY DALTON SAWHORSE BRACKETS

Fully Mechanical—Require No Nails, Bolts or Mitering of Legs!

Sizes for 1x4's and 2x4's

Easily put together in jaws and leg sockets. Simply pool lumber in jaws and tighten. No need to stack, fasten, or miter sawhorses, legs, or braces.

BLADE RESHARPENING SERVICE

DEALER RENTAL PROGRAM AVAILABLE

Write for bulletin AB-1 and nearest distributor TODAY.

J.M.J. INDUSTRIES INCORPORATED
BELLEVILLE, ILLINOIS
ANY idea of how long a good electric saw will stand up? Five years? Ten? Guess again!

In Columbus, Ohio, a couple of months ago, we came across a builder who owns one of the first Porter-Cable Saws produced. It's a Speedmatic K-8, built in 1926.

 Asked to comment on his saw's performance, Mr. Kerby O. Kesler told us... "It has been in constant use by my men and myself for more than 25 years. This Speedmatic still cuts fast and accurate, and is capable of more years of service."

See the latest Porter-Cable Saw—Model 508 shown above—at your Porter-Cable dealer's. Check your classified phone directory or write for name of nearest dealer. Send for free 40-page manual on saw operation.

- Like Mr. Kesler's "Oldtimer" shown here, all Porter-Cable Saws are built to last years longer. Each is given a run-in test which checks the precision, assembly and fit of all parts. We guarantee every tool is free of mechanical or electrical defects.
SAVES YOU MORE TIME, RIGHT ON THE JOB, THAN ANY OTHER TOOL IN YOUR KIT!

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or industrial use. Needs no starting hole—has built-in blower—fits any heavy duty 1/2" or 3/4" drill—blades to cut all materials—listed on Federal Supply Schedules, Class 40 Materials.

SEND THE COUPON FOR FULL FACTS

Please send literature to: Bulletin L-4

Name__________________________
Address________________________
City___________________________
State__________________________

(Continued from page 116)

handled with all possible care to avoid cracking the wheel, as a wheel on bursting throws pieces with terrific force. Grinders must wear goggles and keep out of line with the wheel. Manufacturers' recommendations should be followed as to operating speeds and sizes of wheels. All grinding wheels should have guards as far as it is possible to install them.

Circular Saws. There is very little danger at ordinary speeds of circular saws bursting solely from centrifugal force. Principal dangers are from a saw cracking, from striking something, or from a tooth or several teeth breaking away. Operating speeds should certainly not be greater than those for similar size bench saws, and because of the potentially greater abuse given to portable tools, the manufacturers' recommendation of 9,425 peripheral feet per minute should never be exceeded by more than 20 per cent.

The greatest hazard in the use of portable saws is from being cut by the blade. Most tools now on the market are designed with effective guards. The real danger exists, not while the saw is cutting through the work, but at the beginning and completion of the cut. It is most important that the guards provide effective protection as the saw enters the work, and after it leaves the cut.

Powder Actuated Hand Tools. While powder actuated hand tools are not new, they have only recently come into prominence throughout the building industry. All powder operated hand tools use blank cartridges as a source of power. The tools are so designed that the energy created by the burning powder is confined and controlled so that it is not released until it has reached its maximum value. This action delivers an instantaneous high velocity to the pin or stud.

All manufacturers of this equipment provide safeguards against accidental discharge. Both hands are required to operate the device, and usually a spring loaded sleeve must be rotated or held in position before the firing pin can be released. Workmen should not be permitted to operate the tool unless they are trained and authorized to do so. Manufacturers' instructions and recommendations should be carefully followed. In many cases, the manufacturer will train men for proper use in all types of work.
Two Great MONEY
MAKERS For BUILDERS

- Here are two mixers that are real producers. They speed up work, save many man hours a year and are known everywhere for their quality and rugged construction. See your CMC distributor or write for catalogs.

WONDER "SUPER SIX" HOE TYPE MIXER

- Liberal six foot capacity. No finer machine built for mortar or plaster. Available also in lower priced De Luxe model. Smaller and larger hoe type mixers to fit any job condition.

The correct stud and cartridge should be selected for the job. If there is doubt, a test shot may be fired, taking proper precautions to prevent injury to the operator or others nearby.

Studs should not be driven too close to the edge of brick, concrete, or wood surfaces, because of their tendency to crack. Suggested clearance is about six inches, depending on the thickness of the wall.

Masonry and concrete spall can be reduced by firing through a thin metal disc or heavy waxed paper board like a milk bottle top.

The operator should be provided with adequate face and eye protection. Persons should not stand too close to the operator. The tools should never be held horizontally or pointed at anyone, and fingers and hands should be kept from in front of the barrel. These tools should not be used in an explosive atmosphere.

Production Power Tools

Table Saws and Radial Saws. Both table saws and bench saws present a serious hazard from the blade of the saw. This can be minimized in radial saws by the use of guards which cover the blade except for the portion which passes through the work. The carriage of the saw should return to position near the vertical column of the saw after each cut.

Bench or table saws should be at all times fitted with guards which cover the blade except when in use. A splitter in back of the blade will prevent binding of the work, with the danger of boards being thrown back at the operator with serious force.

Blades should be sharp and properly set. The correct type of blade should be used according to the work. It is both unsafe and inefficient to use ripping blades for cross cutting or vice versa, and a thin blade with little set for finish cuts should not be used on heavy rough lumber.

Operators should wear goggles at all times, and may require respirators in enclosed areas. It is better to provide an exhaust system if work is to be performed in an enclosed space for any length of time.

Several models of table saws have the blade mounted on a swinging arm, so that it is normally below the surface of the table, and is raised through the stationary work by a foot pedal or hand lever, providing an additional degree of protection.

Masonry Saws. Saws for cutting tile, cement block, and similar masonry units with abrasive blades are rapidly replacing hand cutting of these materials. It is essential that the correct cutting blades be used and operated at the specified speeds. As these abrasive wheels are of thin section, there is a considerable hazard from flying pieces of shattered wheels. Masonry saws are fitted with rolling carriages that insure feeding the work into the blade without binding, but the rate of cutting must not be excessive, as this wears blades rapidly, and presents a breakage hazard.

Adequate ventilation is necessary because of the large quantities of dust produced. Blowers for exhaust must be set up in any enclosed location, and it may be advisable for operators to wear respirators as well as goggles in some instances.

Pipe Machines, Threaders and Cutters. Operation of pipe machinery should be restricted to properly qualified and instructed workmen, as there is considerable hazard from exposed rotating parts. Reamers, cutters, and stocks should not be held on a rotating pipe with the hands, as the tool may catch and cause serious injury. All gears and other parts of drive mechanisms should be guarded or enclosed.
BOSTROM LEVELS
FOR HALF A CENTURY
Have been the most economical precision leveling instruments on the market. Used and endorsed by contractors and builders everywhere. Sold on guarantee of satisfaction or money back. Carried in stock by distributors from coast to coast. Write today for literature, prices, and name of your distributor near you.

Bostrom - Brady Mfg. Co.
535 Stonewall St., S.W. ATLANTA, GA.

Worker using an electric hand saw to make a pocket cut in a wall panel. Such electric hand saws have proved real money-savers with their ability to cut sections in walls, floors, and other panels where cut must be started on the surface instead of the edge. Use of drill or keyhole saw is eliminated.

The “Improved Handy” ASBESTOS SHINGLE CUTTER

In a class by itself for efficient performance, economy and dependability. Approved and recommended by the Asbestos Shingle Manufacturers.

SPECIALTY TOOL MANUFACTURERS
732 S. Illinois St.
Belleville, Ill.

Amazing DISPOSABLE Blade

HEINEMANN’S New HARD-TIP Saw

Throw Away When Dull
Stays Sharp 5 Times Longer
Sensational Low Price
Reduces Costs 50% to 60%
Cuts Smoother and Faster

Ends Your Saw Troubles

Remarkable . . . this new DISPOSABLE Heinemann “Hard-Tip” Blade. Short teeth, specially hardened, stay sharp many times longer — cut faster, smoother, quieter. Short teeth can’t grab — safer to operate — requires less power. Always round and efficient — never develops cracks. Saws fine on any type machine, all kinds of work. The low price will astonish you — $1.77 for Standard Type 6” inch. Equally low prices on all sizes up to 16 inch.

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At any one of our 3,000 Dealers in U.S.A. or write, wire, phone.

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CANTON 6, OHIO

TEMPO PRODUCTS CO.
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STREET
CITY
STATE

[ ] Dealers — Write for Information

122

AMERICAN BUILDER
GREATEST FORD TRUCKS EVER BUILT!

For faster handling on any job, Ford Trucks have new, shorter turning. New, wide-track, setback front axle provides sharper turning angle—easier maneuvering and parking.

NEW TIMESAVING FEATURES GET JOBS DONE FAST!

Ford Economy Trucks for '53 are completely new from the tires up! New cabs, new chassis, new power, new transmissions... every inch specifically designed to provide fast, economical transportation. New Ford Truck timesaving features Get Jobs Done Fast... at still lower cost per mile!

NEW DRIVERIZED CABS cut driver fatigue!

New one-piece curved windshield, 55% bigger! Wider seat, with new shock absorber. Larger door opening, push-button handles.

NEW LOW-FRICTION POWER!

Choice of 5 engines... V-8 or Six!


NEW TRANSMISSIONS... widest choice in truck history!

Synchro-Silent transmission on all models at no extra cost. Steering post shift on 3-speed transmissions. New Fordomatic Drive or Overdrive now available on all 1½-tonners at extra cost.

4 COMPLETELY NEW LINES over 190 completely new models!

9 Conventional F-Series. Up to 27,000 lbs. G.V.W.; 55,000 lbs. G.C.W. Pick-up, Panel, Express, Stake bodies.

4 Cab Forward C-Series. Up to 23,000 lbs. G.V.W. Up to 48,000 G.C.W.

2 Parcel Delivery P-Series. Bodies up to 12½ ft. Up to 14,000 lbs. G.V.W.

4 School Bus B-Series. For up to 60-pass. bodies. Up to 20,000 lbs. G.V.W.

APRIL 1953

FREE! MAIL THIS COUPON NOW!

FORD Division of FORD Motor Company
P.O. Box 658, Dearborn, Michigan

Please send me without charge or obligation, complete details on new Ford Economy Trucks for '53!

[ ] FULL LINE [ ] HEAVY-DUTY MODELS
[ ] LIGHT MODELS [ ] BIG JOB MODELS
[ ] PARCEL DELIVERY [ ] CAB FORWARD MODELS

Name (PLEASE PRINT CLEARLY)

Address

City State

T-23

Check here if student ☐
How to make BIGGER PROFIT
on every one of these jobs...

DOORS. Cut installation time. Porter-Cable Router and Hinge Butt Template enables one man to fit and hang 6 doors an hour — 20 doors in half a day!

COUNTER TOPS. Build 'em yourself. Router with carbide-tipped bits quickly cuts matching joints and sink openings in Formica and other plastic laminated board.

KITCHEN CABINETS. With a Router your own men can dado for shelves, rabbet doors, chamfer edges — at substantial savings over mill-bought units.

MOLDING. Save money — use scrap lumber. Router converts it into practically any type of simple or fancy molding, panel rails, and lattice, door and window stops, etc.

STAIRS. Nothing slow or difficult about stringer construction — Router and Stair Templet cuts treads and risers 10 times faster — with precision accuracy.

Watch how much faster your houses go up — while your costs go down! — with a Porter-Cable portable Router. Speeds up countless woodworking jobs . . . enables your men to do most of the work now farmed out . . . makes possible the low-cost addition of decorative features home buyers want.

Model 511
8 amps.
$119.00

Model 514
12 amps.
$199.00


Porter-Cable

Quality Electric Tools

MAIL COUPON FOR FREE ROUTER MANUAL

PORTER-CABLE Machine Co.
1004 N. Salina St., Syracuse, N. Y.

Please send your free Router Operating Manual — also name of nearest dealer.

Name ___________________________ Address ___________________________
City ___________________________ Zone ______ State ______

Manufacturers of SPEEDMATIC and GUILD Electric Tools

In Canada write: Strangridge, Ltd., London, Ont.

SAFE LOADS FOR SLING CHAINS

<table>
<thead>
<tr>
<th>Diameter of Link Block</th>
<th>Work Load in Pounds</th>
<th>Double (Two Leg) Sling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.640</td>
<td>10.650</td>
</tr>
<tr>
<td>2</td>
<td>11.600</td>
<td>22.250</td>
</tr>
<tr>
<td>3</td>
<td>23.200</td>
<td>45.500</td>
</tr>
<tr>
<td>4</td>
<td>46.400</td>
<td>91.900</td>
</tr>
</tbody>
</table>

Note: If three-leg slings are used, the safe loads given for double (two-leg) slings may be increased 50 per cent and for four-leg slings 100 per cent. i.e., the safe load for a new 1/4-inch three-leg sling at 45 degrees with the horizontal is 6.156 pounds and for a new four-leg sling of the same size and at the same angle is 9.290 pounds.

In ascending or descending ladders, workers should follow these safe practices:

1. Use both hands going up or down. If material must be handled, use a rope.
2. Always face the ladder going up or down.
3. Be sure your shoes are not greasy, muddy, or slippery.
4. Never slide down a ladder.
5. Do not climb higher than the third rung from the top on straight ladders, nor the second tread from the top on stepladders.

Observation of the following safe practices is also important:

1. Do not use makeshift ladders, such as one made of cleats nailed across a single rail.
2. Be sure that a stepladder is fully open before you use it.
3. Before using a ladder, inspect it for defects. Do not use a defective ladder, but tag or mark it so that it will be destroyed.
4. Do not splice short ladders together.
5. Keep ladders clean and free from dirt and paint which might conceal defects.
6. Do not use ladders in a strong wind except in an emergency, and then only when securely tied or lashed in position.
7. Do not use ladder in aisles or streets without having an attendant guard it, or roping or barricading off the work area.
8. Do not leave ladders unattended, especially outdoors, unless both top and bottom are securely fastened.
9. Do not use ladders as braces, guys, skids, horizontal scaffold members, or for any purpose other than for which designed.

AMERICAN BUILDER
Shopmaster presents the sensational

universal

INDIVIDUAL COMBINATION

POWER TOOL

Here at last, is a woodworking power tool so versatile, so universal in use—it amounts to a complete workshop. The amazing new Shopmaster Universal can not only do a hundred-and-one jobs formerly requiring individual tools—but it can actually perform operations impossible with any other tool! Built to Shopmaster's usual standards of precision workmanship, this new Universal is a power tool worthy of the finest professional craftsmen—yet simple and easy for a novice to operate.

The Shopmaster Universal combines dozens of features to assure top performance and long, maintenance-free life. All moving parts glide on sealed-for-life ball bearings. Matched four-step pulleys make available a range of four speeds. A reversing switch makes left hand drill and router bits unnecessary. Tool changes can be made in seconds.

Complete with saw, drill, disc-and-belt sander attachments, and safety type chuck. Saw attachment is furnished with 8" and 10" blade. Other tool accessories available. Complete unit mounts on special table as shown at the right.

RUSH COUPON FOR DETAILS!

SHOPMASTER, INC. Dept. AB-4
1214 Third Street South, Minneapolis, Minn.
Send information on Shopmaster Universal Power Tool, TODAY!

Name______________  Address________________
__________________________________________
City________________ State__________________

APRIL 1953
The Original

WHIZ SAW

MODEL NO. 2
$130.00

NEW
MORE POWERFUL!
RIPS AND CROSS-CUTS
2 INCH PLANKS

WHIZ-SAW, #2, one of the most versatile cutting tools ever invented, cuts with amazing speed—wood, formica, micarta, bone, plastic, fibre, asbestos board, pressed wood, hard rubber, etc., up to 2 inch thicknesses. Ideal for all craftsmen. The original WHIZ-SAW Model #1 cuts up to 1 inch thickness. ($55.00) WHIRL-SAW, Model #3, 4½ inch circular blade, cuts up to 1½ inch thickness. ($49.00)

If not available at your dealer, write to:

THE Forsberg MFG. CO., BRIDGEPORT, CONN.

Makers of the Famous Whale & Viking Tools

... types of saw blades

Types of rotary saw blades for power hand saws are:
1. Planer blade
2. Crosscut blade
3. Carbide-tipped blade
4. Null cutting blade
5. Combination rip and crosscut blade

Black & Decker Photos

The New MULLER MIXER
— top performance with bottom price and upkeep

The larger drum of the new 3½ cubic foot model has ample capacity for even the lightest materials. Equipped with electric motor or either of the two best air-cooled engines—large enough to stand plenty of overload.

Muller Paddle Shaft Seal for positive bearing protection, guaranteed for life of mixer; power throwout; hinged engine housing, self-lubricating, self-aligning bearings; ball thrust on paddle shaft; new safety grid.

OTHER FEATURES: Muller Paddle Shaft Seal for positive bearing protection, guaranteed for life of mixer; power throwout; hinged engine housing, self-lubricating, self-aligning bearings; ball thrust on paddle shaft; new safety grid.

Prices F.O.B. Factory
1 H.P. Electric Motor. $12.00
2.7 H.P. Briggs & Stratton Engine $30.00
3.1 H.P. Wisconsin Engine 360.00
Also made in 6', 6' to 8' and 9'-Heavy Duty Models. Ask us for name of nearest distributor.

Muller 3½' Tilting Type Concrete Mixer. Prices from $305.00 up, F.O.B. Factory

THE larger drum of the new 3½ cubic foot model has ample capacity for even the lightest materials. Equipped with electric motor or either of the two best air-cooled engines—large enough to stand plenty of overload.

MULLER MACHINERY COMPANY, Inc.
METUCHEN 4, N. J., Cable Address, MULMIX

AMERICAN BUILDER
DEWALT "3 adjustment action" HELPS YOU TO BUILD FASTER... AT LESS COST!

You not only cut framing, jack rafters and bridging faster and more efficiently with a De Walt—but you can make 15 different cuts in less than 15 minutes!

Where most machines require at least 4 adjustments, De Walt's "3 adjustment action" makes it possible to position the saw for any desired cut in seconds!

This flexibility speeds up cutting, reduces operator fatigue, and enables a De Walt to turn out as much work in ten minutes—as other machines will in fifteen.

De Walt offers you unmatched precision, speed and versatility—you rip, cross-cut, plough, rabbet, tenon, bevel, miter and make many other cuts—a total of 15—in far less time than it takes ordinary saws.

Economize by making your own cabinets, special trim or window frames. Cut costs by as much as $200 a house! It's easy—and you get perfect results every time.

Find out for yourself how De Walt's "3 adjustment action" saves you time... saves you money. See your De Walt dealer or mail coupon below.

De Walt Inc., Dept. AB-4, Lancaster, Pa.

MAIL THIS COUPON TODAY!

HAVE YOU TAKEN THE DE WALT TRAINING COURSE?

De-Walt Inc. invites all its dealers and distributors to Lancaster, Pa., to take a week's course of instruction in the application and uses of De-Walt Radial Power Saws.

It will be well worth your while. You'll learn new techniques of operation that will enable you to give more convincing demonstrations and more help to your customers.
Size of Extension Cable for Portable Electric Tools
Based on current equivalent to 150 per cent of full load of tool and a loss in voltage of not over 5 volts. This table is for 110-volt tools. For 220-volt tools use wire size corresponding to an extension length of one-half the contemplated length.

<table>
<thead>
<tr>
<th>Full-load ampere rating of tool</th>
<th>0.0-2.0</th>
<th>2.10-3.4</th>
<th>3.5-5.0</th>
<th>5.10-7.0</th>
<th>7.10-12</th>
<th>12.1-16.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of cord</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 ft.</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>50 ft.</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>75 ft.</td>
<td>18</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>100 ft.</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>200 ft.</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>300 ft.</td>
<td>14</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>400 ft.</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>500 ft.</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>600 ft.</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>800 ft.</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1000 ft.</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTE—If voltage is already low at the source (outlet), have voltage increased to standard, or use a much larger cable than listed in order to prevent any further loss in voltage.

... erecting safe scaffolding

Tubular steel scaffolds erected along one wall should be securely anchored to the wall at suitable intervals, approximately once every 20 feet of height, and every 30 feet of width. Free standing towers, such as hoist towers should be guyed at every 30 feet of height as the erecting of the tower progresses.

Tubular scaffolds are frequently mounted on casters for ease in moving about as the work progresses. It is important that the base section be rigidly braced to hold the bottom sections together when casters are used. Casters should be securely locked before the scaffold is used, and a rolling scaffold should not be moved about while men remain on the scaffold.

Scaffolding lumber should be inspected carefully before use. Pieces should be reasonably straight grained, free from large knots, splits, dry rot, and wormholes. Planks should not be less than 2 x 10 inches. Lumber selected for scaffolding should be given careful storage, and not used for other purposes.

Scaffolds are not designed for material storage. Material should be delivered as needed, for current requirements only. Hoisting equipment should be located so that there is no possibility of material in movement striking the scaffold.

**TABLE 1**

<table>
<thead>
<tr>
<th>Minimum Dimensions of Side Rails for Two-Section Extension Ladders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douglas Fir or Equivalent**</td>
</tr>
<tr>
<td>Thickness (inches)</td>
</tr>
<tr>
<td>Up to and including 14-1/2</td>
</tr>
<tr>
<td>Over 14-1/2, up to and inc. 18-1/2</td>
</tr>
<tr>
<td>Over 18-1/2, up to and inc. 20-1/2</td>
</tr>
<tr>
<td>Over 20-1/2, up to and inc. 24-1/2</td>
</tr>
<tr>
<td>Over 24-1/2, up to and inc. 30-1/2</td>
</tr>
<tr>
<td>Eastern or Sitka Spruce or Equivalent**</td>
</tr>
<tr>
<td>Thickness (inches)</td>
</tr>
<tr>
<td>Up to and including 28-1/2</td>
</tr>
<tr>
<td>Over 28-1/2, up to and inc. 32-1/2</td>
</tr>
<tr>
<td>Over 32-1/2, up to and inc. 36-1/2</td>
</tr>
<tr>
<td>Over 36-1/2, up to and inc. 40-1/2</td>
</tr>
<tr>
<td>Over 40-1/2, up to and inc. 44-1/2</td>
</tr>
<tr>
<td>Over 44-1/2, up to and inc. 50-1/2</td>
</tr>
<tr>
<td>Over 50-1/2, up to and inc. 56-1/2</td>
</tr>
</tbody>
</table>

**See ASC Code A4 1-1948 for Group 2 woods.**

For hard-on-the-job use, the Lufkin "Leader" is your best buy. Figures and graduations are bonded to the line—can't wear off. Multiple electro-plating further strengthen the fine tape steel from which the line is made.

Jet-black markings stand out sharp and clear against the chrome-white surface. The line is all metal—won't crack, chip, or peel—most rust and corrosion resistant—will outwear painted lines many times. Tough maroon-colored vinyl case. 25, 50, 75 and 100-foot lengths, with or without hook ring.

FOR ON-THE-JOB DURABILITY
One Steel Tape Leads Them All

**LUFKIN**

"Leader"

Chrome-Clad Steel Tapes

EASY TO READ MARKINGS THAT ARE DURABLE

For on-the-job use, the Lufkin "Leader" is your best buy.
Your invitation to savings

Save Time and Money!
with BOSTITCH BUILDER'S TOOLS

TRY 'EM! Look for the new Bostitch try-it-yourself display at your dealer's. Test the three handy tools you'll find there — the TS Tacker, the H4 and H2B Self-feeding Hammers. Feel them to get their "feel." Drive staples with them to discover their speed, their ease of operation. Prove to yourself that Bostitch "fastens it better and faster and at lower cost with wire!"

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Westerly, Rhode Island

Fill in the reply card and mail it today for complete literature.

BOSTITCH
AND FASTER
fastens it better with wire

BUSINESS REPLY CARD
First Class Permit No. 34, Sec. 34.9 P. L. & R., Westerly, R. I.

BOSTITCH
824 Mechanic Street
Westerly, Rhode Island
3 good reasons for a switch to Bostitch

"It's wonderful to have tools that require so little service, do such a good job, save so much time!"
—ROOFING CONTRACTOR

1. BOSTITCH TS TACKER
Light, compact, easy to operate, the famous TS Tacker is a favorite with builders. Loads fast. Gets into tight spots. Drives staples all the way into hard woods with powerful action. Three models. Twelve staple sizes. SMALL NOSE permits you to place staples within 1/16" of cleats or inside corners.

2. BOSTITCH H2B HAMMER
High-speed, self-feeding stapling hammer, the H2B is ideal for tacking and light nailing. Loads easily from front. Holds 160 sturdy staples. One-hand, one-blow operation speeds job by freeing other hand for better balance or positioning the work. Builders like its long reach, its gloves-on operation, its light weight and balance, its rugged reliability. Two models. Three staple sizes.

3. BOSTITCH H4 HAMMER
This heavy-duty hammer drives nail-size staples as fast as you can strike it. Scientifically balanced to give extra power to natural swing. Staple legs spread inside wood for added holding power, will not vibrate loose. Easily loaded with strip of 50 staples. Staples are made of galvanized, heavy-gauge wire.

BOSTITCH, B24 Mechanic Street, Westerly, R. I.
Please send me bulletin and prices on:

☐ Bostitch T5 Tacker
☐ Bostitch H2B Hammer
☐ Bostitch H4 Hammer
☐ Bostitch machines to fasten...

(NAME MATERIALS)

Name ____________________________

Firm ____________________________

Street __________________________

City ____________________________ Zone ______ State ______

TYPICAL REPORT . "Stapling is 50% faster than hammer and nails for installing ceiling tile. No danger of marring the edges either."—Lumber Dealer

TYPICAL REPORT . "For installing insulation, Bostitch is not only faster, it does a better job. And it cuts the cost way down."—Builder

TYPICAL REPORT . "We've saved nearly one-third of our labor cost on roofing and siding with the Bostitch H4 Hammer."—Construction Company

MANY USES . . . installing batt, blanket and reflective insulation . . . putting up ceiling tiles . . . fastening screening to frames . . . applying cornerite, sheathing paper, flashing paper . . . putting up mesh for tiling.

MANY USES . . . installing batt, blanket and reflective insulation . . . laying roofing paper . . . applying cornerite and metal lath . . . applying wooden undercourse shingles on outside walls (H2B1/2) . . . applying felt and waterproof paper to outside walls prior to siding.

MANY USES . . . applying asphalt shingles . . . applying metal lath to studding . . . applying corrugated paper to studding for installation of blow-type rock wool . . . stapling of metal discs for built-up tar and gravel roofs . . . laying plywood underflooring.
Lift Up Materials
At Lower Cost...Get

MULKEY
All-Steel Portable
ELEVATOR

Keeps profits up...labor costs down. Fast! Moves 32 blocks per minute! One man can handle and operate. Basic unit 24 ft. - 17½ ft. lift. Extensions available for up to 28 ft. lift. Easly trailed up to 35 m.p.h. Foolproof patent clutch and brake assembly. Write today for FREE literature & prices.

SAMS MULKEY CO.
1621 AB-4 Locust St. Kansas City, Mo.

10 Day Trial
WARREN-KNIGHT
TRANSIT-LEVEL

This instrument is made for the Engineer or Contractor who knows that he can work more efficiently with up to date equipment. This instrument gives you what you have always wanted in a low priced instrument—high power, easy to use, durable. You can buy other instruments for less. But what do they do? They never last. Return them within ten days for full purchase price plus delivery charge on arrival.

Warren-Knight & Sons Co.

SIMPLEX
IMPROVED ONLY
LEVEL $14.85

For setting door jamb and window frames! No other like it. 4 Plumb, 2 Levels. Use either end or edge up. Weighs only 4½ lbs. 1-Beam type—non-warp. Direct from factory. Patented

SIMPLEX LEVEL CO., INC.
4919 Cadillac Blvd. Detroit 14, Michigan
HARBOR PRODUCTS are known throughout the industry as the royalty of Douglas fir plywood. Dealers and users are agreed that Harbor products deserve their world-wide reputation for durability and extra quality. They are carefully manufactured to exceed accepted standards of construction and performance. They have proved their reputation by the toughest of tests in every type and size of structure—water tanks, sea-going clippers, railroad cars, billboards, concrete forms, and for hundreds of interior uses. For dealers Harbor products mean steady, repeat business. To users, they offer assurance of top performance always.

SUPER-HARBORD
SUPER QUALITY WEATHERPROOF DOUGLAS FIR PLYWOOD WITH FOUR EXCLUSIVE FEATURES

1. All Heartwood Veneer. The exclusive use of heartwood, the prime wood of a tree, in SUPER-HARBORD assures a stronger, better panel.

2. Solid Inner Plys. Selected heartwood stock is used for inner plys as well as face veneers in SUPER-HARBORD. Carefully patched, it eliminates troublesome core gaps.

3. Edge-Jointed Inner Plys. Solid inner plys are machine edge-trimmed and carefully butted. Every saw cut reveals the solid core construction.

4. Re-Humidified. During manufacture, wood moisture is inevitably reduced. After SUPER-HARBORD panels are bonded, they are re-humidified to minimize dimensional change or warping.

SUPER-HARBORD PLYCRETE
A finished SUPER-HARBORD form panel for multiple re-use on concrete work demanding a relatively high architectural finish.

SUPER-HARBORD GIANT PANELS
SUPER-HARBORD standard panels joined with a 1 to 12 ratio scarf joint. Produced in any length with a maximum width of 9', or in any width with a maximum length of 9'.

Harbord Interior-type Douglas fir plywood of Commercial Standard quality.

Harbord GIANT PANELS
Super-Harbord standard panels joined with a scarf joint. Panel especially made for concrete form work on average jobs where limited re-use is required.

Harborite One or both sides plastic faced over SUPER-HARBORD core. Makes excellent paint base for exterior finish.

Giant-size Harborite panels with overlay faces manufactured by joining standard panels with a scarf joint.

SALES OFFICES AND WAREHOUSES

EXECUTIVE OFFICES, P. O. Box 940, Aberdeen, Washington
ABERDEEN, WASHINGTON, Harbor Mercantile, Port Dock
ATLANTA, GEORGIA, Harbor Plywood Corporation, 1161 Ridge Avenue, S. W.
CHICAGO, ILLINOIS, Harbor Plywood Corporation, 1444 W. Carneal Road
CINCINNATI, OHIO, Harbor Plywood Corporation of Indiana, 511 Baymiller Street
INDIANAPOLIS, INDIANA, Harbor Plywood Corporation of Indiana, 1001 E. New York St.
JACKSONVILLE, FLORIDA, Harbor Plywood Corporation, 2335 Dennis Street
LOS ANGELES, CALIF., Harbor Plywood Corporation of Southern California, 235 S. Alondres St.
OAKLAND, CALIFORNIA, Harbor Plywood Corporation of California, 901 King Street
PHILADELPHIA, PENNSYLVANIA, Harbor Plywood Corporation, 3701 North Broad Street
SAN FRANCISCO, CALIF., Harbor Plywood Corporation of California, 3095 Third Street
TAMPA, FLORIDA, Harbor Plywood Corporation, 802 North Rome Avenue
ordinary construction lumber is graded on the basis of quality in two main classes—select lumber and common lumber. Select lumber has but very few minor objectionable characteristics, is smoothly finished and can be used as a whole for finishing purposes or where large, clear pieces are required. The selects are divided into two main groups: A and B grades, suitable for natural finishing; and C and D grades, which have blemishes somewhat greater than those in the first class, but blemishes which can be covered with paint.

Common lumber may contain numerous characteristics which do not permit its use for finishing purposes but which still permit its use for general utility and construction purposes. The two principle classifications here are boards and dimension. Boards are graded as No. 1, No. 2, No. 3, No. 4 or No. 5. These grades are not equivalent in all species. Dimension is graded as No. 1, No. 2 or No. 3. The characteristics of these various grades are described briefly in the table on yard lumber.

Size Standard
Lumber sizes are based on its rough, green dimensions. For example, although described as 4 inch by 4 inch, which is the “nominal” size, a piece which has been dried and dressed on four sides is actually 3¾ inch by 3½ inch. The first figure quoted in lumber dimensions indicates nominal thickness; the second, width; and the third, if there is one, is the length. Lengths on common lumber normally are in multiples of two feet.

Common boards, or boards, are a general purpose item available at all lumber yards in one or more of the kinds of wood most frequently used in building. The standard nominal widths are 4, 6, 8, 10, 12 inches or wider. Although the grades shown are from No. 1 through No. 5, the very lowest grades of any species are almost never available in retail yards. Their use is mainly for special industrial purposes. Boards are produced with square edge, dressed and matched (tongue-and-groove), or with a shiplap joint. The largest uses for common boards are subfloors, sheathing, roof boards, barn boards, rough siding and concrete forms.

Dimension Lumber
Dimension is primarily framing lumber, used for joists, rafters and studding. Strength, stiffness, and uniformity of size are essential requirements. Dimension is nominally two inches in thickness dressed to 1¾ inches. Widths are usually nom-

(Continued on page 134)
DOUGLAS FIR
PLYWOOD and DOORS

100% HOT PRESSED, interior and exterior types

For uses requiring long durability, for versatility in all types of construction, there's no better product than Douglas Fir Plywood manufactured by the Coos Bay Lumber Company. Here's a quality plywood—a superbly processed product cut from the finest virgin timber available on the Pacific coast. With years of plywood manufacturing experience behind it, the Coos Bay Lumber Company is prepared to meet your every need for plywood and doors.

SOON!
COOS BAY HARDBOARDS

The ultra-modern Coos Bay Hardboard Plant at Coos Bay, Oregon, will soon be operating, producing hardboards of the finest quality.
for squeak-free floors

trade-marked plywood sheathing

No matter how sound the construction of your houses, a floor that squeaks can change a buyer's "yes" to "no sale".

For any finish floor you plan, Valley Ply panels assure you of a solid, squeak-free base. You'll build stronger, warmer, drier with Valley Ply...and at a better applied price than boards. For extra savings, use Valley Ply first for concrete forms, then for subfloor.

Choose from Valley Ply sheathing...plugged solid ...or touch-sanded underlay. Call your supplier for more information.

VALLEY PLYWOOD COMPANY
Box 789, Eugene, Oregon
Telephone 5-8491
TWX-EG 147
WHERE TO USE PRESERVATIVE TO COMBAT CONDENSATION

CONDENSATION WITHIN WALL SPACE causes rot, swelling and paint peeling. CUPRINOL HELPS PROTECT THIS AREA.

BACK PAINT WITH CUPRINOL TO REDUCE DAMAGE.

Liquid wood preservatives, applied before painting or varnishing, increase the useful life of floors and beams, joists, and siding, particularly in climates where moisture or termites make special problems, and in modern homes where heating, air conditioning, and laundry devices may increase moisture content of air.

WOOD PRESERVATIVES repel termites, prevent decay, protect wood from moisture in areas shown in diagram.

(Carried from page 131)

form frame is often referred to as the western framing method, or western frame.

Good Framing Practices

The use of good framing practices cannot be over emphasized. Enough supporting members of proper size must be used, not only to support ordinary loads but to impart sufficient strength to the entire structure. Good framing practices are necessary to give floors and entire structure good stiffness; a most important factor to a well built house. On these pages are shown detail drawings for joists, bridging, subflooring, studs, openings, framing around chimneys, sheathing, roof framing, trussed rafters, fire-stops and partitions.

THE MODERN BRACED FRAME is in every way adaptable to modern needs, but must not be slighted in assembly

AMERICAN BUILDER
We are happy—and regretful. Happy because the acceptance and demand for this decorative fir plywood has been so spontaneous. Regretful because we can't seem to catch up with orders. It may seem odd that in a market of plywood plenty, there is, by comparison, so little Sea Swirl available. Yet this is understandable when you realize that only the most select panels qualify for this three-dimensional product that captures the romance of soft ocean beaches and of tideprints in the sand.

We suggest that you write for a color booklet illustrating the many uses of this wonder wood. While you are studying it, and planning on the use of Sea Swirl for modernization and new construction, we will be increasing production facilities on this popular plywood.
is essential in farm structures. Where a load-bearing post supports a girder on which either joists or rafters rest, an angle iron or similar device should be used to tie the post, girder and members.

1. Arkansas Soft Pine contains no pitch to bleed through and discolor paint, enamel or stain finish.

2. It is seasoned to correct moisture content (6 to 8 per cent) in automatically controlled dry kilns.

3. This process shrinks the wood before it is machined. Thus “pull” between summer and winter ring growth, which is the cause of raised grain, is completed while the wood is in the rough. Seasoned material is then machined to patterns of stabilized size and satin-like surface.

4. Priming coats are evenly absorbed, becoming integral with the wood’s fiber. Final coats thus are applied to uniform surface, immune to bleeding and raised grain, to provide finished woodwork of lasting beauty. These are dependable qualities in Arkansas Soft Pine which answer your question, “How will this trim look five years from now, or 25?”

Available at your local lumber dealers in A.L.A. approved contours and standard 8000 Series patterns. Complete information, including grades to specify, stress tables, trim patterns, painting and finishing instructions are contained in this free Handbook for Builders. Write for your copy.

FRAMING LUMBER, TOO —

in dimension, sheathing, siding, jamb and outside trim. The soft texture and paint-holding qualities of Arkansas Soft Pine insure your workmanship and reputation as a builder of better homes. Look for the trade-mark at your lumber dealers — stamped on all genuine Arkansas Soft Pine.

ARKANSAS SOFT PINE

BUREAU

452 Boyle Building

LITTLE ROCK, ARKANSAS
STAIRWAYS SHOULD BE FRAMED with not less than three horses and of stock wide enough to leave 3 1/2 inches of material behind each cut. Landing must be carefully supported and the stair braced against thrust. Accurately cut horses or stringers are important.

Stairway Framing

Stair layout and building is a phase of construction confined largely to millwork manufacturing firms who employ professionals to help builders with these problems.

Never underestimate the value of good framing around stair openings. Doubled and sometimes tripled joists with well-selected, properly fitted and adequately fastened headers are of utmost importance to achieve strength and rigidity. Firmly secure stair horses against header of stair opening. In no case hang them from it.

It is recommended that risers be 6 1/4 to 7 inches and treads be 10 1/4 to 10 3/4 inches. Slight variations in these dimensions may be made, but in all cases have tread and riser measurements total about 17 1/4 inches. Between 30 and 36 degrees is the proper, safe, over-all stair flight angle.

(Continued on page 140)
1. Flexible Storage Wall. Simplicity of construction, adaptability mark this striking fir plywood built-in. Provides compact storage in small space. Box-like drawer, desk and cabinet units are interchangeable. Sections can be altered, added or subtracted to fit wall space. Cost of fir plywood to build unit shown... $105

2. Under-Eave Storage makes good use of usually wasted space in expansion attics. Unit can be made to fit any ceiling slope. Fir plywood to build it costs... $95

WAYS to put extra with low-cost

Here are eight new ideas you can use to build your sales-story right into the house. For even the most modest home can be lifted above the ordinary... given extra sales-appeal with low-cost fir plywood built-ins.

Fir plywood built-ins far more than pay for themselves. They sell houses faster—and at better prices. See how little you pay* for fir plywood for each of these built-ins.

And when you plan with plywood, you make the built-in fit the house—exactly! No bothersome juggling of "stock" units. Fir plywood is easy to cut, fit, fasten. Paint it with popular modern accent colors to compliment your interiors... or use light stains to feature the real wood grain.

Get detailed plans for each of these eight sales-clinching built-ins from your local lumber dealer—or write Douglas Fir Plywood Association, Tacoma 2, Washington. Please order plans by number.

Douglas fir Plywood

This trademark identifies quality-tested PlyPanel®—the versatile "one-side" grade of Interior fir plywood. Other grades include "two-side" panels for uses where both sides of panel will be seen. For outdoor use, specify Exterior-type fir plywood.

*Please order plans by number.
3. Shelf-Door Wardrobe combines features of roomy closet, dresser and chest of drawers. Use it to help sell your house faster. Can be used in any room. Build it with fir plywood for only $35.

4. Sectional Storage Units can be combined to form shoulder-high storage wall for living room or den. Sections can be pre-built, installed on job. Fir plywood you'll need to build it costs $90.

sales-appeal in your homes

fir plywood built-ins

6. Island Entry Wall at right defines entry and living areas without confining either. Adds feeling of spaciousness. Saves building costs by replacing conventional wall and entry closet. Fir plywood to build it costs $100.

7. Odds and Ends Cabinet will appeal to your women customers. Use it to reclaim waste space above water closet or hang in kitchen or utility room for extra storage space. Get fir plywood to build it for only $8.

8. Demountable Music Wall is ideal for custom homes built for music lovers. Simple, interchangeable fir plywood boxes are stacked on low plywood table. Holds radio, record player, albums, TV. Fir plywood you'll need to build it costs $60.

*Based on latest available Chicago retail sales for fir plywood compiled by leading trade magazine, prices may vary throughout nation depending upon location and source of supply.
(Continued from page 137)

recommended height for permanent handrails is 36 inches above the treads. Minimum headroom distance between nose of treads and soffit over stairway, in a line parallel with the horses, should be 6 feet, 8 inches for main stairs and 6 feet, 4 inches for basement and service stairs.

**Millwork**

Millwork consists of building items which are fabricated at the factory by the use of some type of machinery. For specific information on millwork relative to doors, windows and stairs refer to directory section titled windows, doors, frames, and stairs.

Millwork may be either assembled at the factory or delivered to the builder knock-down. Included in the many items referred to as millwork are balustrades, scroll work, bent work, casework, cupboards, mantels, mantel shelves, columns, colonnades and a wide variety of moldings. While some standardization of size exists, designs may be unique with each manufacturer.

Mouldings, however, can be purchased by reference to a standard numbering system, generally adopted by moulding manufacturers, which indicates the size and design of the specific type of moulding. In addition to this accepted standard system of identification, certain stock mouldings have become standard within certain sections of the country. For example one might purchase a NY 116 in New York City or a DC 98 molding in Washington, D. C.

Shown on these pages are some accepted standard stock mouldings from the “8000” series standard.

(Continued on page 148)
The continued prosperity of my business depends upon the satisfaction of my customers, and I can keep that satisfaction only by building well and by using first class materials. Because WOODLIFE protects wood against swelling, shrinking, warping, grain raising, and guards it against decay and termites, it safeguards my customer's investment and strengthens my reputation as a quality builder. Many costly call-backs often needed to repair sticking doors and windows, squeaking floors, etc., are eliminated by WOODLIFE.

WOODLIFE, water repellent preservative, has been nationally advertised since 1935, and because it has user acceptance, more and more builders and architects find that WOODLIFE protected homes sell faster. It gives a "plus" value that marks a good builder—and at little extra cost.

Many lumber dealers supply WOODLIFE treated lumber and millwork items, and stock WOODLIFE in quart, gallon, 5 gallon and 55 gallon containers for on-the-job treating.

Write for literature and name of nearest distributor.

Protection Products Mfq. Co.
Research Laboratory and Plant KALAMAZOO, MICH.

April 1953

Silent Salesman for New Homes

A proven fact! Ask any builder who installs BILCO Doors. He'll tell you it's the best selling feature he ever used. Home buyers sign up fast when basements are useful, livable and safe.

Don't "date" your homes — investigate America's fastest growing building product... the BILCO metal Celladoor.

Give your customers these BILCO benefits
- WEATHER-TIGHT
- FIRE-PROOF
- TROUBLE-FREE
- ATTRACTIVE
- BURGLAR-PROOF
- ECONOMICAL

See us at the NAHB Convention — Chicago — Booth 603-A

The BILCO CO., 108 HALLOCK AVE., NEW HAVEN, CONN.

Gentlemen: Please send me more facts about this selling feature for new homes.

Name
Address
City State
Fancy scalloped frame around built-in shelving with ornate valance contrasts effectively with simplicity of plywood wall panels joined with V-joints and vertical scoring.

**Disappearing Stairs**

A number of manufacturers fabricate disappearing stair units which are designed for use with attics without taking up the space normally required for a finished stairwell. No vertical or horizontal clearances are required in the attic or loft; all that is needed is to cut a rough opening and install the unit. Some models move by counterweights, some are of one-piece construction on the stringer, others have a semi-extensible feature to save more space. Safety treads, an insulated ceiling-door panel, and rigid construction are features of several models.

**What's Cooking in the Kitchen?**

**WE HARDBOARD TWINS STIR THINGS UP**

Turn us loose in a kitchen... that's the recipe for pleased customers.

We back cabinets, partition drawers, fill in corners and serve in dozens of helpful ways that any good builder knows and understands.

**STAN** is the Weldwood® Standard Hardboard twin... and **TEMP**, the Weldwood Tempered Hardboard member of the team, treated with oil and plastic so it's permanently weather-resistant.

**Both** Weldwood Hardboards can be cut, sawed, drilled, bored, planed or worked by any standard or ordinary hand tool. Both, being lighter than average in color, can be painted, even with pastel pigments. Both serve builders in any room in the house. Order today from your Weldwood supplier.

**WELDWOOD® Hardboard**

Manufactured by Abitibi Power and Paper Company
Distributed Exclusively By
UNITED STATES PLYWOOD CORPORATION
World's Largest Plywood Organization
55 West 44th Street, New York 36, N.Y.
Branches in Principal Cities * Distributing Units in Chief Trading Areas

**DOUGLAS FIR PLYWOOD**

*Stock Thicknesses, Widths and Lengths*

| INTERIOR A-A, INTERIOR A-B, FLYPANEL and PLYBASE Sizes: |
| Thicknesses: 1/6, 1/4, 1/8, 1/2, %, 1/8, 1/2 inch |
| Widths: 20, 42, 48 inches |
| Lengths: 60, 72, 84, 96, 108, 120 and 144 inches |

| EXTERIOR A-A, EXTERIOR A-B, PLYSHIELD and UTILITY Sizes: |
| Thicknesses: 1/6, 1/4, 1/8, 1/2, %, 1 and 1/2 inches |
| Widths: 30, 36, 42, and 48 inches |
| Lengths: 60, 72, 84, 96, 108, 120 and 144 inches |

| SHEATHING and PLYSCORD Sizes: |
| Thicknesses: 1/6, 1/8, 1/4 and 1/2 inch |
| Width: 48 inches |
| Length: 96 inches |

| CONCRETE FORM Sizes: |
| Thicknesses: % and % inch |
| Width: 48 inches |
| Length: 96 inches |

To meet all your requirements: both Standard and Tempered Grades of Weldwood Hardboard come in three popular thicknesses: 1/8", 3/16" and 1/4". In sizes: 4'x6', 4'x8', 4'x10', 4'x12' and 4'x16'. Panels up to 4'x12' are wrapped six to a package. Weldwood Tempered Tile Board is available only in 1/8" thickness and sizes 4'x4', 4'x8', 4'x12'. Call your Weldwood salesman for Weldwood Hardboard or Tile Board today.
WHEREVER A TOP IS NEEDED -- THERE'S A USE FOR
GENERAL ELECTRIC TEXTOLITE*

General Electric Textolite plastics surfacing comes in dozens of exclusive patterns and colors. It is used wherever a durable surface is needed — tables, counters, work surfaces of all kinds — in homes, stores, restaurants.

A variety of gay patterns and solid colors makes General Electric Textolite as pretty as it is practical. Textolite's beauty lasts and lasts. It's scratch and heat resistant, withstands boiling water, scalding greases, even resists burning cigarettes. General Electric Textolite is stain resistant, sheds fruit juices, alcohol, ordinary household chemicals and acids without a trace. It's easy to keep Textolite tops clean. Just a swish with a damp cloth restores the original sparkle and luster.

MONOTOP...NEW ONE PIECE MOLDED PLASTIC TOP

The G-E Monotop was developed by General Electric in answer to the demand for a simple, one-piece, molded, seamless plastic top that would fit over cabinets without metal trim or separate back splash.

The newest thing in plastic work surfaces, the G-E Monotop is molded all in one piece, with a 4" high back splash and a raised, rounded, no-drip front edge. There are no joints or cracks to catch dirt.

Installation is simple and requires little carpentry. The Monotop is self-supporting, being 3/16" thick, and can be installed over an old top or directly on base cabinets. Ask for illustrated installation booklet.

Five decorator colors in the popular cross current pattern are available.

G-E TEXTOLITE READY-BONDED TO RODDISCRAFT PLYWOOD

For your added convenience Roddiscraft warehouses have engaged leading fabricators in each warehouse community to bond G-E Textolite to Roddiscraft Plywood. G-E Textolite professionally bonded to Roddiscraft Plywood can be cut and installed by carpenters with ordinary tools. No gluing or clamping necessary. Ask your Roddiscraft dealer about G-E Textolite Ready-Bonded Tops.

AVAILABLE WHEN YOU WANT IT

A nationwide warehouse service makes delivery of G-E Textolite fast and reliable. For complete information — patterns, prices and prompt service get in touch with your nearest Roddiscraft dealer.

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 29, Mass. ....... 239 Vassar St. Miami 38, Fla. ....... 255-315 N.E. 73rd St.
Charlotte N. C. .......... 123 E. 27th St. Milwaukee 6, Wis. ...... 4601 W. State St.
Chicago 32, Ill. ........... 3865 W. 41st St. New Hyde Park, L. I., N. Y.
Cincinnati 1, Ohio ........ 836 Depot St. 1756 Plaza Ave.
Cleveland 4, Ohio ......... 2717 E. 75th St. New York 55, N. Y.
Detroit 14, Mich. ........... 11855 E. Jefferson St. 290 E. 149th St.
Kansas City 2, Kan. ...... 35 Southwest Blvd. New York 55, N. Y.
Los Angeles 38, Calif. ..... 2620 E. Vernon Ave.
Louisville 10, Ky. ....... 1201 S. 15th St. St. Louis 16, Mo.
Marshfield, Wis. ........ 115 S. Polk St. 3344 Manchester Road

Dealers exhibiting this display can show you a wide selection of G-E Textolite colors and patterns.


APRIL 1953 143
Those who are working with West Coast Hemlock know it is strong, easy to cut and fit, and remarkably free from checking and splintering. In comparison with other species, this ability wood also is distinguished for its fine texture, straight grain and freedom from pitch. These qualities—and other features—make West Coast Hemlock one of our finest, most popular soft woods.

Fortunately, there are abundant stands of this superb ability wood on the West Coast... in a climate which produces superior Hemlock. Properly kiln-dried, and carefully manufactured by Weyerhaeuser, 4-Square Hemlock has great merit as a dependable soft wood. It is manufactured in bevel siding, bungalow siding, flooring, framing, ceiling, drop siding, sheathing, boards, paneling, moulding and other items. These products are used interchangeably with other multipurpose, softwood species.

Because Hemlock is such a remarkably versatile wood, many builders are using it with great success in many places. Literature describing the characteristics and use value of Weyerhaeuser 4-Square West Coast Hemlock, the abundant ability wood, will be mailed to you on request.
No other stairway offers so much!

EASY TO OPERATE—The cleverly engineered counter-weights operate on LIFE-TIME ROLLER BEARINGS and silently raise or lower the stairway with practically no effort.

HYDRAULIC SAFETY-CHECK—Prevents slamming on both opening and closing and assures you that the stairway will shut tight and noiselessly.

RUGGED & STRONG—Construction of No. 1 kiln dried lumber throughout. Brackets, rocker arms and hinges cast of special aluminum alloy. Trim furnished on door panel only. All parts are numbered and interchangeable. Frame is made to fit 26” x 54” opening in ceiling.

INSULATED PANEL—Panel is insulated with Cellufoam and protected with tough chip board.

SAFETY TREAD—Each step is covered with full-width composition safety treads. Adds to appearance as well as safety.

FITS ALL CEILINGS—The stairway fits any ceiling from 7 feet to 9 feet 9 inches figured from finished floor to finished ceiling. Runners are graduated to facilitate cutting off at different heights. Two standard sizes: 8’9” fits from 7’ to 8’9” ceiling, 9’9” fits from 8’9” to 9’9” ceiling.

EASY TO HANDLE—Shipped in 1 package assembled. Precision Stairways are packed completely in one heavy carton, assembled complete with jamb and ready for installation, which offers a considerable savings over other attic stairways. Shipping weight 130 pounds.

NO ADJUSTMENTS—NO SPRINGS—REQUIRES NO ATTIC SPACE. Full height above attic floor is only 36”. Folds completely into 26” x 54” opening in ceiling.

CAN BE INSTALLED IN ONLY 30 MINUTES—1. Bolt brackets to frame. 2. Place stairway in opening, wedge in, square and nail in place. 3. Bolt connecting link to lever arms, place weights in rocker arms and tighten and stairway is ready to operate.

Accepted by F.H.A. Listed in Sweets. Specified by leading architects. Sold by more than 12,000 dealers in U. S. A. and Canada.
and now...

MASONITE SIDING
—the newest member of the Presdwood family!

- Makes every home—new or old—more attractive, modern looking. Improves resale value, too.
- Gives homes the charm and character of lap siding in new, modern widths.
- Available with specially-designed Shadowline wood strips to create a deep, distinctive shadow. Permits smaller overlap.
- Out-waters the weather! Permanent protection against rain, snow, heat—even hailstones. Won’t rot or corrode.
- Smoother! Has no knots or grain to rise and disturb the finish. Takes less paint, holds it better and longer. Repainting is extra years away!
- Stronger! Resists dents, bumps and scrapes. Won’t split, splinter or crack. Won’t push nails out.
- No short lengths. Packaged in full, true-cut 8', 10' and 12' lengths.
- Choice of widths: Conventional 12", wider 16" and extra wide 24". In 1/8" and 1/4" thicknesses.
- Corners may be of wood or metal. Use sheathing and building paper if necessary. Use same type of finish as you would on wood.

Now! All the beauty and charm of traditional lap siding—plus more durability, faster application and better paint-retention. That’s what you can offer your customers with grainless Masonite siding—an all-wood hardboard. Tested for years both in the laboratory and in actual use.

Specify Masonite Siding on your next job. It pays off in dollars and in satisfied customers!

VERTICAL SIDING, TOO!

Looking for the unusual? Masonite Tempered Presdwood in the regular 4' width makes an excellent vertical siding material, with batten strips. 8' or 12' lengths will cover most applications in today’s new homes.

It’s New!

MASONITE PRESDPLY
—the Presdwood-Plywood Panel that smooths out the tough jobs!

- For every job requiring a strong, rigid and thick panel with smooth and durable surfaces that are easy to finish.
- Core made of at least 3 layers of well-seasoned plywood and outer plies of tough, super-smooth Masonite Presdwood.
- Interior grade. For all interior uses except in cases of high humidity or hard usage.
- Exterior grade. Completely waterproof adhesives. Presdwood facings are tempered to even greater moisture resistance. Out-waters the weather.
- Both types in easy-to-handle 4' x 8' panels. In 1/2", 3/4" and 5/8" thicknesses.

Now! Masonite Presdwood and plywood have been “married” to offer you the best features of both. In Masonite Presdply you have a strong, super-smooth, rigid panel that has scores of uses: In the home for cabinets, built-ins, wardrobes, walls, closet doors, etc. In stores and restaurants for fixtures, counter-tops, displays and shelving. In industry for work-benches, tables, shelves and partitions. Often used as forms for exposed concrete construction where smooth surface is required.

Send coupon for complete information about Presdply.

MASONITE LEATHERWOOD

- A tempered Presdwood Product with one side richly embossed to simulate Spanish-grain leather. Other side smooth.
- Offers many interesting decorative possibilities—including handsome two-tone effects.
- For wainscots, dens, libraries, cabinet panels, etc.
- Popular in homes, restaurants, theaters, offices and wherever a distinctive, luxurious setting is desired.
- In 1/4" thickness only. Apply over solid backing.
- 4-ft. panels up to 12 ft. long.

MASONITE TEMPRITILE

- A tempered Presdwood Product with smooth, clean score lines to create an attractive tile pattern on one side. Other side is smooth.
- Easy to paint or enamel. Use striping tool in score lines to create interesting contrast.
- Highly resistant to moisture and temperature changes.
- For bathrooms, kitchens, laundries. Also used in hospital laboratories, stores and restaurants.
- In 1/4" thickness only. Apply over solid backing.
- 4-ft. panels up to 12 ft. long.
featuring

- A type and thickness for every application—33 in all!
- Quality control through constant laboratory testing and
careful inspection.
- Nation-wide distribution—available through your local
building materials dealer.
- Application instructions in each package.

MASONITE STANDARD PRESSEDWOOD
- Our basic Standard Presdwood...tempered for extra hardness, durability and weather resistance.
- More than six times as resistant to surface injuries.
- Highly resistant to changes in moisture and temperature.
- For all exterior applications, including farm structures.
- For all applications where extra strength, extra surface hardness and moisture-fight-
ing ability are required.
- One side is extra-smooth; other side has screen impression.
- Like all Presdwood Products, it can be sawed, drilled, punched, routed, planed, beveled, bent and sanded. Fastens with
tails, screws, bolts and various types of adhesives.
- Choice of natural, brown or black.
- In thicknesses of %", %", 3/4" and 1 1/4".
- 4-ft. panels, up to 12 ft. long.

MASONITE TEMPERED PRESSEDWOOD®
- The original member of the Presdwood family.
- An all-wood hardboard made of exploded wood chips that are re-bonded into a hard,
dense, grainless board equally strong in all surface directions.
- Smooth surface on one side; screen impres-
sion on other.
- Easy to work and to finish.
- Can be bent to graceful curves.
- In thicknesses of 3/4", %", 3/4" and 1 1/4".
- 4-ft. panels, up to 12 ft. long.

MASONITE PANELWOOD®
- Similar to Standard Presdwood, but has less density.
- Fine for interior walls and ceilings, soffits, porch and breezeway ceilings.
- Attractive smooth surface. Finishes beauti-
fully.
- Easy to cut and fit.
- Thicknesses of 3/4", %" and 3/4" only. Can be applied over solid backing or studs 16" o.c.
- 4-ft. panels, up to 12 ft. long.

MASONITE UNDERLAYMENT
- Similar to 3/8" Panelwood, but is planed on
screen side to a uniform caliper of .215 inch.
- For use over wood floors or wood sub-
floors.
- Provides a smooth, flat surface for linoleum, asphalt tile, rubber tile, cork tile or
carpeting.
- Easy to install. In 4' x 4' or 4' x 3' panels.

MASONITE CONCRETE FORM PRESSEDWOOD
- A specially-tempered Presdwood for maxi-
mum efficiency in concrete form work.
- Insures a smooth surface, virtually elim-
inating hand rubbing.
- Can be used again and again.
- In thicknesses of 3/4" and 1 1/4".
- 4-ft. panels, 8 or 12 ft. long.

Better Hardboards for Better Building

MASONITE CORPORATION
Dept. AB-4, Box 777, Chicago 90, Illinois

Please send me complete information and technical data about the Masonite Presdwood family.

Name..........................
Address..........................
City...................... Zone.....
County....................... State..........................

"Masonite" signifies that Masonite Corporation is the source of the product.
**Recommended Maximum Spans**

For Douglas Fir Plywood

<table>
<thead>
<tr>
<th>PANEL</th>
<th>PLYWOOD CONTINUOUS OVER</th>
<th>AS SIMPLE BEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>THICKNESS</td>
<td>2 OR MORE SPANS</td>
<td>OVER 1 SPAN ONLY</td>
</tr>
<tr>
<td></td>
<td>20 psf</td>
<td>30 psf</td>
</tr>
<tr>
<td>1/4” rough</td>
<td>23.0</td>
<td>20.0</td>
</tr>
<tr>
<td>1/8” rough</td>
<td>27.5</td>
<td>24.0</td>
</tr>
<tr>
<td>1/32” rough</td>
<td>34.3</td>
<td>30.0</td>
</tr>
<tr>
<td>1/32” rough</td>
<td>43.0</td>
<td>37.5</td>
</tr>
<tr>
<td>5/32” sanded</td>
<td>47.0</td>
<td>41.0</td>
</tr>
<tr>
<td>3/16” rough</td>
<td>53.0</td>
<td>46.5</td>
</tr>
</tbody>
</table>

* Face grain parallel with span. Deflection limited to 1/360th of span. If deflection of 1/270th of a span permissible, spans may be increased by 10%.

Note: For roofs with flat decks or pitch not steeper than 3 in 12, and subject to walking traffic, use 1/2 inch minimum thickness on 24 inch rafter spacing or 5/32 inch plywood on 16 inch centers. Where blocking is used at panel joints, use 1/4 inch on 24 inch centers and 3/16 inch on 16 inch centers.

**Approximate Minimum Bending Radii**

For Douglas Fir Plywood

<table>
<thead>
<tr>
<th>PANEL THICKNESS</th>
<th>APPROXIMATE MINIMUM RADIUS ACROSS GRAIN</th>
<th>APPROXIMATE MINIMUM RADIUS PARALLEL TO GRAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4” Inch</td>
<td>6 1/2 Inches</td>
<td>10 Inches</td>
</tr>
<tr>
<td>1/8” Inch</td>
<td>15 Inches</td>
<td>24 Inches</td>
</tr>
<tr>
<td>5/32” Inch</td>
<td>36 Inches</td>
<td>54 Inches</td>
</tr>
<tr>
<td>1/32” Inch</td>
<td>6 Feet</td>
<td>8 Feet</td>
</tr>
<tr>
<td>1/32” Inch</td>
<td>8 Feet</td>
<td>10 Feet</td>
</tr>
<tr>
<td>1/32” Inch</td>
<td>10 Feet</td>
<td>12 Feet</td>
</tr>
</tbody>
</table>

Note: It should be recognized that an occasional panel may rupture at somewhat longer radius than indicated because of characteristics of the wood (such as short grain) in the particular panel.

**Sound Insulation**

<table>
<thead>
<tr>
<th>PARTITION CONSTRUCTION</th>
<th>SOUND TRANSMISSION LOSS IN DECIBELS</th>
<th>FREQUENCY CYCLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4” Douglas Fir plywood, both sides</td>
<td>31.1</td>
<td>128</td>
</tr>
<tr>
<td>1/8” gypsum plaster, metal lath, both sides</td>
<td>33.2</td>
<td>256</td>
</tr>
<tr>
<td>1/4” gypsum plaster, wood lath, both sides</td>
<td>33.4</td>
<td>512</td>
</tr>
<tr>
<td>SINGLE SHEETS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4” Douglas Fir plywood</td>
<td>22.4</td>
<td>1024</td>
</tr>
<tr>
<td>1/8” fibre board A</td>
<td>22.2</td>
<td>2048</td>
</tr>
<tr>
<td>1/8” fibre board B</td>
<td>21.8</td>
<td></td>
</tr>
</tbody>
</table>

**Sound Deadening**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SOUND ABSORPTION COEFFICIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>***Plaster, gypsum or lime, smooth finish on plywood</td>
<td>0.03</td>
</tr>
<tr>
<td>***Plaster, gypsum or lime, rough finish wood paneling</td>
<td>0.12</td>
</tr>
<tr>
<td>Linoleum, asphalt, rubber, or cork tile on concrete floor</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**Nail Bearing Loads**

Ultimate Loads at Standard Plywood Edge-Distances for Laterally Loaded Nail Joints. (For stud edge-distances one inch or greater.)

<table>
<thead>
<tr>
<th>PLYWOOD THICKNESS</th>
<th>6d COM.</th>
<th>8d COM.</th>
<th>10d COM.</th>
<th>16d COM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load</td>
<td>Load</td>
<td>Load</td>
<td>Load</td>
<td>Load</td>
</tr>
<tr>
<td>1/4”</td>
<td>335#</td>
<td>420#</td>
<td>500#</td>
<td>620#</td>
</tr>
<tr>
<td>1/8”</td>
<td>345#</td>
<td>470#</td>
<td>575#</td>
<td>675#</td>
</tr>
</tbody>
</table>

(Continued from page 142)

Plywood is an engineered panel material made up of three or more layers of veneers bonded together with glue, with the grain direction of each ply at right angles to that in the adjacent ply. An odd number of plies is nearly always used to obtain balanced construction. While plywood panels are produced in a wide range of both soft and hardwoods, over 90 per cent of all plywood used in light construction is supplied by the Douglas fir plywood industry.

**Sheathing, Subflooring, Roof Decking**

Plyscord is the recommended grade of plywood for sheathing, subflooring and roof decking. Certain veneer defects not affecting its serviceability may appear on both surfaces. It has moisture-resistant bonding.

Plyscord 1/4-inch thick is recommended for use as roof sheathing over rafters 16 inches on center under both wood and asphalt shingles. Wood shingles, however, must be applied with nailing strips unless 1/4-inch plywood is used. The rafters may be spaced 24 inches on center when 1/4-inch plywood is used.

The minimum thicknesses of Plyscord when used for wall sheathing are 1/4-inch for 16-inch stud spacing and 5/32-inch for 24-inch stud spacing. Corner braces in house framing may be eliminated when 4 by 8-foot sheets of plywood are nailed with 6d nails, 6 inches on center on all edges and 12 inches on center at intermediate bearings. When 1/4-inch plywood is applied as wall sheathing, wood shingles may be fastened directly with ring-barbed nails. If barbed nails are not used, nailing strips must be employed.

One-half inch plywood is permitted as a base for wood finish and all composition types of flooring when the following application methods are followed: (a) joist spacing not more than 16 inches on center; (b) blocking installed under all panel edges at right angles to joists and (c) nailed securely 6 inches on center at all edges and 10 inches on center at intermediate framing members. Further, joist spacing may be increased to 20 inches if 5/32-inch plywood is used and to 24 inches if 3/16-inch plywood is used when requirements (b) and (c) above are followed. Lay panels with outer grain across the joists.

In all cases correct nailing techniques must be followed for fastening the plywood and other components of...
Coming in with a ROAR to make your sales SOAR!
...the new Weldwood® Panel

**Priced For Business . . . And Profits!**

Surfwood is priced for any building budget! Its picturesque, natural appearance...its ease of installation...freedom from maintenance...appeals to both the builder doing luxury installations and the man who wants something special but must have low cost materials.

Its rustic air of informality will create a big demand for use in such diversified places as ranch and summer homes, offices, country clubs, rumpus rooms, cocktail lounges.

Ride in on SURFWOOD to greater sales and profits! Get in touch with your nearest Weldwood distributing unit today!

This handsome, new paneling duplicates all the weathered surface details, color and charm of wood aged by long exposure to the sea. This effect even includes open and sound knot-holes...which add greatly to the natural appearance of Surfwood.

Here is a panel that will weather the sea of time...will always stay beautiful...always remain a big hit with your customers.

Surfwood is Weldwood Fir Plywood, bonded with the amazing new L-1R adhesive which not only resists moisture but also withstands mold.

Surfwood is made in 48" x 96" size, 5/16" thick.

*W. M. Registered*
customers can choose from 3 Ez-Way units

Ez-Way's 3-unit line means easy sales...

Three outstanding stairway units in the EZ-Way 1953 line completely cover your market when you're selling customers the way to "more room for living". There's no excuse for waste attic space on any purchasing level with EZ-Way's 3-way selection.

EZ-WAY Folding Attic Stairway
Ideal for remodeling or new construction, the EZ-Way Folding Stairway converts waste attic or loft space to living or storage quarters at the lowest possible conversion cost. Shipped completely assembled.

- Touch controlled, balanced spring action
- No counterweights
- Sturdily built
- Softi-Walk steps
- Decorative styling

SPECIFICATIONS
Model 18 Model 22 (heavy duty)
Rough opening . . . 26"x34", . .30"x62"
Stringers . . . 4"x6" . . 5"
Steps . . . 4x18", . . 5x22"
Rise . . . 6" . . 9"
Rise . . . 6" . . 9"

EZ-WAY Economy Ladder
Costing only slightly more than a large step ladder, the EZ-Way Economy Ladder can be installed with no alteration to the attic scuttle hole. Rigidity and sure-footing are designed into the Economy Stairway. Easily operated by a woman or child.

SPECIFICATIONS
Model 15
Any opening 18" x 24" or larger—
(a) Maximum floor to floor height 9'2"
(b) Minimum vertical clearance in attic 4'7"
(c) Clearance on attic floor . . . . 4'4"

EZ-WAY Sliding Stairway
Developed especially for the mass housing market, this inexpensive stairway serves two needs—when not in use as a stairway, it is easily demounted for use as a utility ladder around the home and farm. Simple, most effective stairway available in this price range.

SPECIFICATIONS
Model 20
Finished opening . . . 24"x36"
Stringers . . . 1¼x3½" Rise . . . 10"
Steps . . . 4½x15" Maximum floor to floor height . . 9'
Maximum vertical clearance in attic . . 4½'
Clearance on attic floor . . . 6½'

Save Time and Money . . . Avoid Mistakes . . . Use SIMPLIFIED CARPENTRY ESTIMATING

HERE IS EVERYTHING YOU NEED to know to "take off" a bill of materials from set of plans and specifications for a frame house. Saves you time figuring jobs, protects you against oversights or mistakes that waste materials and cost money. Nothing complicated—just use simple arithmetic to do house carpentry estimating with this easy-to-use ready reference handbook.


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Name

City State

SAVE. Send $3.75 with your order. We pay postage, handling. Some trial terms.
floors, walls, and roofs. For nailing 8- and 10-inch Plyscord, 6d common nails should be used. The 5¢-inch Plyscord should be fastened with 8d common nails. Nails should be spaced not more than six inches apart at the edges of panels and not more than 12 inches apart on other bearings when plywood is used for sheathing or subflooring.

**FOR EXTERIORS**

For exterior use, only the exterior grades of plywood, with waterproof adhesive bonding, should be applied. Plyshield is specifically produced for use as siding; one face is sound veneer and ready for any type of finishing.

The minimum thickness of plywood recommended for siding is 3/4-inch, although, for economy in some types of construction, 5¢-inch panels are used successfully. For construction of single-wall structures, such as warehouses, 7/8-inch or thicker Plyshield siding has been used with success and economy.

Exterior plywood siding should be applied with non-corrosive nails. The common, hot-dipped galvanized type is satisfactory. Nailing should be with 6d common or with 6d box nails for 3/4-inch siding and 8d for thicker siding. When full-size 4 by 8-foot or longer panels are used, fastenings should be spaced not more than six inches on center at panel edges and 12 inches elsewhere. When narrow 12- to 24-inch panels are installed as lapping, nailing at panel ends should be not more than four inches on centers.

All edges of plywood siding, no matter whether butted, veed, covered, or exposed, should be beveled in a thick lead and oil paste or other suitable compound. This is knifed on as the panels are applied. Filler or bedding specifications are: 100 pounds of paste white lead, one and three-quarters gallons of raw linseed oil and one pint of dryer. Reduce dryer to one-half pint if boiled linseed oil is used.

If plywood is installed as lapped siding, the lap should be at least two inches and bedded in paste. The vertical joint should be backed with narrow strips of wood shingles tacked to the studs. The vertical butt joints may also be flashed by a strip of asphalt-impregnated building paper tacked over the shingle and lapped just over the course below. Horizontal edges of plywood used as lapped siding should be beveled slightly so water will drip from the outside edge.

**FOR INTERIORS**

Plypanel is the grade of fir plywood designed for finishing walls, ceilings, partitions, storage walls, cabinets and built-in furniture where only one surface is to be exposed.

Thicknesses most popular for wall paneling are the 3/8-inch and 5/8-inch panels, while the 3/4, 7/8- and 5/4-inch thicknesses have widespread use in cabinets, built-ins and doors.

For good wall construction, Plypanel 3/4-inch thick are recommended, over studs 16 inches on center. Apply panels either vertically or horizontally; the latter affords extra rigidity.

Some building codes require a 22 by 4-inch fire stop about four feet from the floor, between studs. This horizontal member serves as backing for plywood panels and is recommended.

Plywood panels 3/4-inch-thick are fastened with 6d finish or casing nails spaced 6 inches on center and 3/4-inch panels are applied with 4d finish nails.

A basic principle in applying plywood paneling is to start at openings with vertical joints and divide plain wall spaces in any preferred, orderly manner.
arrangement. Often moldings are applied to obtain horizontal stream-lined effects or a variety of paneled designs. V-grooves, easily made with portable electric routers, can be effectively employed to simulate narrower paneling or to make designs on the panel face. Lapping of panels is particularly effective in ceilings.

**PLYWOOD ON THE FARM**

Because plywood used in farm service structures is constantly or repeatedly exposed to weather, to wetting during cleaning, or to high humidities (as in dairy barns), only the exterior grades with a few additional cautions. To achieve the best results, furring strips, individual paneling, and the use of the furring strips, individual panels are practically united into a single unit of wall which swelling or shrinking of the building will not affect.

**HARDWOOD PLYWOOD**

The application measure set down for fir plywood can generally be followed for hardwood plywood used on interiors with a few additional cautions. To achieve the best results, furring strips of 1/4-inch plywood, cut two inches wide with the grain running the short way, should be nailed to the studs and blocking. By use of the furring strips, individual panels are practically united into a single unit of wall which swelling or shrinking of the building will not affect.

**CONCRETE FORMS**

Two standard grades of fir plywood are especially produced for concrete form use: (1) Plyform, for multiple re-use, made with highly water-resistant but not waterproof adhesives; (2) exterior-type fir plywood, grade-marked EXT-DFPA-Concrete Form, with a completely waterproof bond between the plies. Plastic-surfaced plywood is available for construction requiring the best possible appearance of the concrete surface.

The thickness of plywood to use in concrete forms depends on the loads, permissible deflection, and spacing of studs, joints or stiffeners. The 3/8-inch and 1/2-inch are the most popular thicknesses. It is axiomatic that the supporting framework, studs, wales, posts and joists must be constructed for deflection, bending strength and shear in studs and joists and for column action in posts. Plywood requires proper support from studs or joists. The height and rate of pour as well as fluidity affect pressures against the forms and spacing of supports. Values are calculated on panels placed with face grain across the studs.

**HARDBOARDS**

**Types and Uses**

Hardbards are panels processed from ligno-cellulose fibers which are the result of exploding wood chips under high-pressure steam. The fibers are then compressed into the desired panel thickness and density in thermal hydraulic presses. A quick reference chart shown on these pages gives the physical properties and panel sizes available for the seven basic types of structural and surface-finishing hardboards.

Harboard is known as “the wonder wood of 1,000 uses.” It is extensively used as a material for modernizing commercial interiors and exteriors, for cabinets and other built-in features in houses, and for bevel siding in home building. It is flexible and can be applied in curved designs. The surface is hard and resistant to dents and wear, and is an excellent base for any kind of finish.

**MINIMUM BENDING RADIUS OF HARDBOARDS**

<table>
<thead>
<tr>
<th>Standard Hardboard</th>
<th>Heated Equipment Forms Bending Heated to 300°-450°F</th>
<th>Cold Moist Bend</th>
<th>Cold Dry Bend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Smooth</td>
<td>Side Out</td>
<td>Smooth</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>2½&quot;</td>
<td>2&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>3/16&quot;</td>
<td>3½&quot;</td>
<td>2½&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>5&quot;</td>
<td>4&quot;</td>
<td>18&quot;</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>6&quot;</td>
<td>5&quot;</td>
<td>28&quot;</td>
</tr>
<tr>
<td>Tempered Hardboard</td>
<td>1/8&quot;</td>
<td>2½&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>3/16&quot;</td>
<td>3½&quot;</td>
<td>2½&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>4&quot;</td>
<td>3&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>6&quot;</td>
<td>5&quot;</td>
<td>24&quot;</td>
</tr>
</tbody>
</table>

**TABLE showing minimum bending radii for hardboards by thickness and type**

<table>
<thead>
<tr>
<th>Inch Thick</th>
<th>Dimensions in Feet</th>
<th>Lbs. per Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>4x12 x 10 x 9 x 8/4</td>
<td>x 4/5 x 4/4 x 4/3</td>
</tr>
<tr>
<td>3/16&quot;</td>
<td>4x12 x 10 x 9 x 8/4</td>
<td>x 4/5 x 4/4 x 4/3</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>4x12 x 10 x 9 x 8/4</td>
<td>x 4/5 x 4/4 x 4/3</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>4x12 x 10 x 9 x 8/4</td>
<td>x 4/5 x 4/4 x 4/3</td>
</tr>
<tr>
<td>Panelwood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>4x12 x 4/10 x 4/8</td>
<td>4x4 x 4/2</td>
</tr>
<tr>
<td>Tempered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>4x12 x 4/10 x 4/8</td>
<td>4x4 x 4/4 x 4/3</td>
</tr>
<tr>
<td>3/16&quot;</td>
<td>4x12 x 4/10 x 4/8</td>
<td>4x4 x 4/4 x 4/3</td>
</tr>
<tr>
<td>1/4&quot;</td>
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<td>4x4 x 4/4 x 4/3</td>
</tr>
</tbody>
</table>

Items marked (*) are available only when on inventory.
FOR FINEST
Architectural Quality
Redwood

with HIGHEST GLUE-HOLDING ABILITY

SPECIFY PALCO CERTIFIED DRY REDWOOD

No other wood surpasses Redwood in gluing properties, and few begin to equal it. Along with this natural advantage, PALCO Architectural Quality Redwood offers highest uniformity of texture, grain and seasoning—with greatest dimensional stability and minimum shrinkage. For highest ability to take and hold different types of glue under different methods of application without special treatment, insist on PALCO Certified Dry Redwood—it's the best by every comparison, and yet costs no more.

For a comparative analysis of Redwood's outstanding qualities, write for Redwood Data Book "JG," today.

THE PACIFIC LUMBER COMPANY
The best in Redwood—Since 1869
Mills at Scotia, California
100 Bush St., San Francisco 4 • 35 East Wacker Drive, Chicago 1 • 5225 Wilshire Blvd., Los Angeles 36
MEMBER OF CALIFORNIA REDWOOD ASSOCIATION
side to screen side, with wet cloths or newspapers between the panels and allow to stand for 12 to 16 hours. Cover stacks to reduce evaporation.

**Working with Hardboards**

Use typical woodworking procedures and ordinary carpenter's tools when building with hardboards. Panels can be sawed, planed, routed, drilled, punched, shaped or bent into simple curves. Just observe these three "don'ts": Don't toenail; don't drive nails in the edges; don't nail moulding, etc., onto hardboards without any backing, for the hardboard will not hold the shank firmly.

The cross-cut saw with 8 to 12 points per inch and a No. 6 set should be used for straight cutting. Pressure should be little more than the weight of the saw. Power saws save time and may be used. Use a coping or compass saw for cutting irregular, curved and inside edges. Turn the intended exposed surface up when cutting. This procedure will leave a sharper corner on the face edge in addition to helping protect the face side of the panel.

Holes should be drilled if screws are to be used as fastenings. Counterbore holes if the screw head is to be flush or below the surface. For circular holes, a twist drill will work more satisfactorily than an auger bit.

For concealed nail heads, use finishing or casing nails and set with a nail set. Then fill with putty or plastic wood, over the head, after the prime coat of paint has been applied.

**Making Bends**

Hardboards can be bent into simple curves by the cold dry, cold moist, or the hot method. The method used depends upon the radius of the curve desired. (See bending radii chart).

**Installing Hardboards**

Hardboards may be applied over solid backing such as wood, gypsum lath, gypsum wallboard and plaster, or directly to studs or furring strips not more than 16 inches on center. Solid, continuous support must be maintained behind both horizontal and vertical joints. When applying directly over studs, hardboards should be at least 5/8-inch thick.

When hardboards are to be attached to solid surfaces the panels should first be cut to fit loosely in position on the area to be covered. Never fit panels tightly abutting each other. Then, by using a saw tooth trowel with notches of approximately 5/8-inch depth, spread waterproof adhesive over the entire back of the panel. Spread on all edges. Be careful not to get it on the surface which is to be exposed.

Place panel in position immediately after adhesive is applied. Press and tap it to get a firm contact over the entire area. It is then desirable to place braces or supports against the panel to hold it in place. (See diagram). Time required to set is usually overnight. Nails may be used in place of shoring if base surface permits firm anchorage.

**Concrete Form Hardboards**

Specially tempered hardboards are for concrete form use and should be pre-expanded before being applied to the framework of a concrete form. Scrub water into the screen side and then stack screen side to screen side, covered, and let stand for 24 hours.

Panels are then applied to the form construction in the moist condition with the smooth side against the concrete and nailed securely. Screen side of panel may be used against the concrete if rubbing is required to produce a uniform surface color on concrete.

Necessary bevels can be formed of smooth, straight-grained wood and nailed through the fiber board and into the backing. Before first use or re-use the panel surface which bears against the concrete should be wiped with waste saturated with grease having a calcium soap or aluminum stearate base, or with waste dipped in paraffin base oil having a viscosity of not less than 250 seconds at 100 degrees Fahrenheit (Saybolt) and free from volatile constituents.
structural details - wood casements

Installation of standard wood casement unit in frame wall. This unit has reversible windbreaks for either 3/8" or 1/2" sheathing. Plaster reveal inside finish can be used in place of extension jambs and casing trim.

CORNER WINDOW DETAIL—1/4 scale

Angle iron or steel column can be used in place of 2x4's. Sash may be either swinging or stationary.

ANGLE BAY DETAIL—1/4 scale

Section through angle mullion made from standard units. Specify long sill horn for mitering.

structural details - aluminum horizontal

Solid Masonry

Concrete Block

Horizontal sliding windows of aluminum require no painting, are easy to install and maintain.

APRIL 1953
# Opening Sizes—Prefit Layouts and Glass Sizes

## Popular Sizes and Designs

### Casement Sash 1 3/8"

<table>
<thead>
<tr>
<th>Sash</th>
<th>Stiles</th>
<th>Top Rail</th>
<th>Bottom Rail</th>
<th>Vertical Bar</th>
<th>Muntin</th>
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<tbody>
<tr>
<td>L 1</td>
<td>1 1/8&quot;</td>
<td>1 1/2&quot;</td>
<td>1 1/4&quot;</td>
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### Storm Sash and Screens 1 3/8"

<table>
<thead>
<tr>
<th>Storm Sash</th>
<th>Screens</th>
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<tbody>
<tr>
<td>St. 1 1/8&quot;</td>
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### Prefit Face Measurements

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<thead>
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<tbody>
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<td>T.R. 1 1/8&quot;</td>
<td>T.R. 1 1/8&quot;</td>
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### Prefit Face Measurements

<table>
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<th>Screens</th>
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<tbody>
<tr>
<td>B.R. 4 1/4&quot;</td>
<td>B.R. 3 1/2&quot;</td>
</tr>
</tbody>
</table>

### Storm Sash or Screens

Storm Sash and Screens are available for all Standard Windows. The more popular sizes conform to the window sizes shown on the foregoing page.

### Barn or Utility Sash 1 1/8" and 1 3/8"

<table>
<thead>
<tr>
<th>Storm Sash</th>
<th>Screens</th>
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<tbody>
<tr>
<td>St. 1 1/8&quot;</td>
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### Prefit Face Measurements—Stiles 1 3/4"

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### Plain Rail Windows 1 3/8"

<table>
<thead>
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### Prefit Face Measurements

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### Prefit Face Measurements

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</thead>
<tbody>
<tr>
<td>V.B. 1/8&quot;</td>
<td>V.B. 1/8&quot;</td>
</tr>
</tbody>
</table>

### Storm Sash or Screens

Storm Sash and Screens are made 1/4" narrower and 1 1/2" longer than window opening sizes.

### Wood Casements

The out-swinging type of wood casement is most popular with builders and homeowners because apparently it can be more easily made weather-tight. Some types have storm sash which open with the window proper, and others have extra deep rabbets to accommodate the ready-made double pane units in common use. As with metal casements, sash are often hinged with offset butts to allow cleaning of both sides from the inside. Screen and storm sash, when available with the unit, are hung on the inside and do not interfere with its operation.

(Continued on page 160)
FACTUAL PRE-ORDERING INFORMATION

Complete schedule of sizes (with corresponding stud or buck openings) shown in our catalogue No. 89.

- 16-INCH GLASS width in 14-16-18-inch heights. 1 to 5 vent windows.
- 20-INCH GLASS width in 14-16-18-inch heights. 1 to 5 vent windows.
- 32-INCH GLASS width in 14-16-18-inch heights. 1 to 5 vent windows.
- 40-INCH GLASS width in 14-16-18-inch heights. 1 to 5 vent windows. Top vent fixed in 5-vent units.
- 44-INCH GLASS width in 14-16-18-inch heights. 1 to 5 vent windows. Top vent fixed in 5-vent units.

FIXED SIDE LIGHT units for combining with operating units. 16-inch glass width. 1 to 5 vents high.

PLATE GLASS FRAMES for combining with operating units. In width desired, to match 1 to 5 vent heights.

FOR LOW COST INSTALLATION

Each window delivered to the job factory-assembled, glazed, with hardware installed and semi-pre-fit inside screens. Quick, easy installation saves costly labor time. Prompt delivery of stock sizes and styles to fit every need.

For specifications refer to SWEET'S BUILDERS' FILE—4d—GA

APRIL 1953

- ALL WOOD Perma-Treated for resistance to rot, fungi and termites.
- ALL JAMBS sections cushion seal weatherstripped. Factory-installed spring bronze horizontal weather-stripping at slight additional cost.
- SCREENS FURNISHED as standard equipment. Storm sash interchangeable with screens.
- SASH RABBETED for thermopane glazing at slight additional cost.
- ALL HARDWARE easily accessible for inspection and oiling.

PICTURE WINDOW BEAUTY with plenty of ventilation easily accomplished. Combine perfectly with plate glass centers or fixed side lights.

WINDOW WALLS, beautiful and practical, easily mullioned. Close tight or open wide with fingertip control. Operating handle below sill out of way of blinds.

PERFORMANCE PROVEN over the years in all types of buildings and all climates and weather conditions.

For further information write Dept. AB-4
GATE CITY SASH & DOOR CO.
"Wood Window Craftsmen Since 1910"
P.O. Box 901, Fort Lauderdale, Florida
WEATHERTIGHTNESS— to save fuel
and EASY OPERATION to save irritation—
make both BILT-WELL SUPERIOR double-hung units
and BILT-WELL CLOS-TITE casements the
outstanding windows in their respective fields

"SUPERIOR" JAMB-LINER
The Bilt-Well Patented Superior Jamb-liner provides twin functions. Its flexibility automatically overcomes sticking from expansion—also overcomes leaking from contraction. And, because it does both, Superiors fit snugly and slide easily under all weather conditions.

See Our Catalogs 161-CA and 235-CA
In Sweet's 1953 File
BILT-WELL SUPERIOR Windows give you TWICE the protection against air infiltration as required by American Wood Window Institute’s Specifications by Actual Tests. And, Superiors require only 1/10th the lifting effort of most other effectively weatherstripped windows. Yes,—Superior’s patented Jamb-liner is the secret. This exclusive feature provides flexibility which insures both finger-tip lift and snug-fitting windows. And “Superiors” are counter-balanced with guaranteed overhead spring balances. These fine features are permanent, no adjusting or servicing. NO OTHER WINDOW IS COMPARABLE!

BILT-WELL CLOS-TITE Casements are double weatherstripped to provide the twin features —weathertightness and ease of operation. Full 3/16-inch clearance between beveled edge of sash and frame insures bind-free operation. Both sash and frame are weather-stripped, plus the additional insulating feature of twin glass on all sash. Cadmium finish (weatherproofed) hardware includes patented Extension Hinges (for easy cleaning) and a quiet, smooth Crank-type Operator. Locking handle is bronze plated.

The Bilt-Well Line of Building Woodwork (everything for the home) is made of clear, kiln-dried Ponderosa Pine. Essentially all exterior products are toxic, water-repellent treated in accordance with National Woodwork Manufacturers Association Standards.

The complete Bilt-Well Line—everything in woodwork for the home: Superior Unit Wood Windows • Clos-Tite Casements • Nu-Style & Multiple-Use Cabinets • Carr-dor Garage Doors • Combination Doors • Screen & Storm Sash • Basement Unit Windows • Shutters • Exterior Doors • Interior Doors • Entrances • Louvers & Gable Sash • Corner China Cabinets • Ironing Board Cabinets • Mantels • Telephone Cabinets • Stair Parts

Manufactured by
CARR, ADAMS & COLLIER CO., Dubuque, Iowa

DOUBLE WEATHERSTRIPPING
Spring tension weatherstrip (on both sash and frame) is made of anodized aluminum alloy. It is neat, nailless—rolled into a saw kerf in the frame stops at head, sides and sill, and into the four edges of sash. Therefore, sash do not bind even when tested under the most extreme moisture conditions.
Care should be taken with aluminum windows to avoid scratches or stains from plaster droppings. Coat sash with petroleum jelly after installation to make for easy cleaning later.

Double-Hung Windows

The double-hung window is probably the most common in American architecture, and modern improvements in weights, balances, and weather stripping have kept these windows competitive with most other types in modern construction.

Metal Double-Hung

Metal double-hung windows have the same characteristics of other metal windows; they are weather-stripped at the factory, easy to install, easy to care for and operate. Most are made in box-type sections, with glazing done on the job. Some provide for double glazing.

Manufacturers offer a great range of opening sizes, installation hardware and special features. Even though these are fundamentally similar, their slight variations make it imperative to decide on brand and sizes to be used before construction is begun on outside walls, and to follow closely manufacturers' instructions as to installation.

Wood Double-Hung

Modern methods which produce factory-assembled complete units have resulted in substantial savings in building costs as against the old-fashioned windows built on the site. Weather strip is placed in the assembled frame, and balances are hooked up ready to operate. Weights and pulleys are now used in only the "economy" types, and complete units are delivered to the building site ready for installation.

The National Woodwork Manufacturers Association has established standards and specifications for the trade, and opening sizes are set up to

(Continued on page 156)

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(Continued on page 164)
AETNA FRAMES

- ONE-PIECE WELDED ALL-STEEL CONSTRUCTION • STANDARDIZED FOR DEALER STOCKS • INSTALLED IN LESS TIME AND AT LOWER COST

STEEL:
18 gauge cold rolled steel.

FINISH:
One Coat baked-on primer on all sides.

ASSEMBLY:
All frames furnished in complete welded assembly with reinforcing plates behind each mitre joint—no additional labor required at job site. HINGE BUTTS WELDED ON AND STRIKE APPLIED AT FACTORY.

Removable spreaders are fastened at the lower ends of the jambs. These spreaders protect the frames during shipping and handling and facilitate proper alignment during erection. They are easily removed after the frames are set.

HARDWARE:
For 1-1/2" doors (FR-1), one pair 3-1/2" x 3-1/2" butt hinges and loose pins are furnished. The three-knuckle portion of the hinge is welded to the frame. For 1-1/2" doors (FR-2) one and one-half pair 4" x 4" butt hinges and loose pins.

Combination Screen Door frames (FR-C) have one and one-half pair 4" x 4" hinges for 1-1/2" door and one pair of 3" x 3" hinges for screen door. Loose hinge pins are included.

Frames for Double Acting doors are reinforced for pivot hardware. We do not supply this hardware.

A universal type brass strike, complete with steel dust box is attached to the frame. This strike is designed to fit most standardized locks and latches. Where a bit key lock is used requiring a two-hole strike, the Aetna universal strike is provided with a lower knockout plate that is easily removed. Patent pending on strike plate and dust box assembly.

ANCHORS:
Four Anchor clips are welded to each jamb. T-anchors are furnished for installation in masonry walls. Each jamb section is provided with a floor knee for fastening to the floor.
new!
exclusive!
In the hard selling, competitive days ahead "quality built" homes will sell faster... keep your speculative inventory low. And there’s no better way to prove quality than to build with wanted features.

To meet this more demanding market we at Ceco have developed a new product that says quality at a glance—it's the new Ceco-Sterling 3 in 1 Aluminum Window.

Here is something every homeowner will want on sight... a window unit that takes all the work out of summer screening and winter storm windowing... self-storing screens and storm windows do the trick... changing is a mere matter of raising and lowering from the inside... there are no ladders to climb.

Here's a window that's brilliantly handsome... will complement any architecture... will outlast any home... costs nothing to maintain. Advanced Engineering puts it ahead of the field.

Sounds too good to be true, doesn’t it? But you can count on it because the Ceco-Sterling 3 in 1 Aluminum Window is all we claim. We back it with a guarantee of satisfaction.

CECO STEEL PRODUCTS CORPORATION
Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 W. 26th St., Chicago 50, Illinois

Why Home Owners Will Prefer the Ceco 3 in 1 Window
1. The Ceco 3 in 1 Window is the strongest Prime Window with sash balances and stainless steel weather stripping plus combination screen and storm panels offered as a unit package.
2. Exclusive permanent weather seal, nothing make-shift, nothing to deteriorate, wear out or replace. No window can match it in preventing air and cold infiltration.
3. Self-storing storm window and screen changed as easy as raising an arm.
4. New Beauty... made of lustrous aluminum... modern design complements any architecture.
5. Lifetime... made of ageless aluminum. Prime Window is all welded construction.
6. Ease of operation. Prime Window raised or lowered with finger tip.

Why Builders Will Prefer the Ceco 3 in 1 Window
1. The Ceco 3 in 1 Window is the strongest Prime Window with sash balances and stainless steel weather stripping plus combination screen and storm panels offered as a unit package.
2. Easy to install... no fitting or trimming of the Prime Window.
3. Easy to anchor Prime Window. Better engineered Ceco anchoring hardware comes with the unit.
4. Built as a unit... sold as a unit with price including all hardware, sash balances, lock, pull down, screws, closures, channels and weather seal.
5. All welded frame and sash in the Prime Window.
6. One source of purchase for the 3 in 1 unit. Time and money saved in buying.

So be sure this new Ceco window creation is in the homes you build. You can be sure it will improve any home and cost will be competitive.
(Continued from page 160) conform to modular principles. Weather stripping has advanced to the point where some manufacturers are using tension-type weather strip to hold the window in any position and eliminate the need for balances of any kind. This also allows for easy removal of the window for cleaning and painting without removing any interior frame stops.

**Awning Types**

The awning-type of window, wood or metal, is basically a casement window turned on its side with the hinge at the top. Wood awning windows usually have sash or vents hung from the top and hinged by brackets to the jambs. The bottom rail of one unit interlocks with the top rail of the one below. The sash are usually controlled by worm or gear mechanisms, and good ventilation is possible, as most units may be opened to 90 degrees. In many types, units may be left open without danger of rain driving in.

Some units have motor-driven operators. Most of them permit the bottom vent to be open a crack without the others being open at all, and allow the top unit to drop inside for easy cleaning of the remainder from inside the room. Both wood and metal are available in a complete range of sizes.

**Metal Casements**

The Aluminum Window Manufacturers Association and the Metal Window Institute have set up specifications for the trade pertaining to aluminum and steel windows, respectively. Steel windows are bordered and painted with special primer, while aluminum windows are cleaned and coated with clear lacquer by the manufacturer and do not require painting.

Light in weight, metal casements are surprisingly strong, durable, and easy to work with. However, care should be taken in installation to avoid rough handling which might bend slender frames or sash out of shape. Following manufacturer's instructions for installation should result in snug-fitting windows with all screens and storm sash fitting properly and hardware functioning easily.

**Horizontal Sliding Windows**

The horizontal sliding window came into being when someone turned a double-hung window on its side. Since 1940, the spring-type weather stripping has made possible weather-tight operation. This type of window permits larger glass areas than most other types of movable window, and has increased in popularity because of that fact.

(Continued on page 168)
INCENSE
CEDAR

one of 10 woods

from the WESTERN PINE REGION

Durable and decay-resistant . . . light weight and easily worked . . . receptive to paints and stains of all kinds . . . this pleasantly fragrant softwood is in demand for a wide range of residential and industrial construction work.

This is but one of ten fine softwoods from member mills of the Western Pine Association. All are manufactured, seasoned and graded to exacting Association standards. Lumber dealers, builders, architects and wood users have found them dependable and best for many construction uses.

THESE ARE THE WESTERN PINES
IDAHO WHITE PINE
PONDEROSA PINE • SUGAR PINE

THESE ARE THE ASSOCIATED WOODS
LARCH • DOUGLAS FIR
WHITE FIR • ENGELMANN SPRUCE
INCENSE CEDAR • RED CEDAR
LODGEPOLE PINE

Write for free illustrated Facts Folder on Incense Cedar.
Address: Western Pine Association, Yeat Building, Portland 4, Oregon.
Head weatherstripping for positive seal.

Screen and storm sash are interchangeable and all insulated linkage is shown.

Sturdily riveted corners for interlocking strength.

Sill weatherstripping for positive seal.

STANDARD SIZES C-T SERIES 400-J

INSTALLATION DETAIL
Meatling rail neoprene weatherstripping and sturdy upper sash lift handle.
Neoprene glazing and stainless steel sweep lock and keeper. Stainless steel jamb weatherstripping prevents contact between aluminum surfaces.

Adjustable spiral balances are concealed in the sash.
Pliable neoprene weatherstripping at head and sill and integral, full length lower sash lift.

BRICK VENEER MUNTIN ARRANGEMENTS

INSTALLATION DETAIL

SIZE CHART
HEAVY EXTRUDED MODULAR SIZES

<table>
<thead>
<tr>
<th>WINDOW DIMENSION</th>
<th>MASONRY OPENING</th>
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</table>

Metal Arts Mfg. Co., Inc.
P.O. Box 4144
Atlanta, Georgia
You can always rely on Samson

for absolute top quality
SPOT SASH CORD
identified by the colored spots, our trademark. High quality fine cotton yarn, braided with an even pull on each strand for extra strength.

for quality
plus price appeal
AETNA SASH CORD
a reliable, dependable tough cord—in demand for many general uses. Write for FREE Samples and information or see your jobber.

Samson
CORDAGE WORKS
BOSTON 10, MASS.

structural details - wood awning windows

Section drawings above show installation details for typical wood awning windows in concrete block, brick veneer, and frame construction. Basically a side-hung casement type, such windows fit into many modern types of construction.

Wood Awning Windows
Standard Styles and Sizes

Glass block is frequently used with picture windows, a common application being a plate glass or double-pane picture window flanked on each side with sections of glass block into which is built a ventilating louver unit.

Plate glass is frequently used where problems of insulation and heat loss are not acute, but the double-pane unit is becoming ever more popular in

Walls of Glass
The modern trend is definitely toward the use of larger glass areas in home construction. Picture windows have grown to be whole walls of glass, and two of the nation's largest glass manufacturers are making available a double-pane unit which reduces heat loss or gain from windows and makes the glass wall truly practical.
Prospects come in off the street to get a closer look at your model houses when they see that you have installed ALUMINUM WINDOWS. If the rest of your house is as up-to-date and as good as your aluminum windows, your sales come fast and easy!

"Quality-Approved" Aluminum Windows are any homebuyer's assurance of trouble-free window service—with no painting, no rust, no rot for the life of the house. Maintenance becomes simply a matter of occasional washing. Windows always open and close easily.

"Quality-Approved" Aluminum Windows pay you extra profits because they're easier to handle and install—because they add customer appeal that helps you sell your houses faster.

For detailed information, write any "Quality-Approved" Manufacturer, see Sweet's Builder's File (Section 4c/ALU) or write to Dept. AB-4.

Aluminum Window Manufacturers Association
YOUR HOMES WILL SELL FASTER
with AMWELD® salesmen in every room

Look how the AMWELD line can fill your every interior door requirement

Steel Sliding Closet Doors
Steel Slide-away Pocket Door
Interior Steel Doors and Frames

Take an average 3 bedroom home like this — AMWELD interior doors throughout can help make the difference between a quick turnover, at your price — or a FOR SALE sign up for weeks. AMWELD modern, attractive design and all steel construction — eliminates warping, shrinking, cracking and maintenance — often means a SOLD sign in the front yard before the paint dries. In addition to making homes more salable, you, as a builder, can realize a healthier profit on every house built with AMWELD frames, flush doors and sliding closet units. Builders everywhere report AMWELD closet door units, doors and frames can be installed more quickly and at lower installed cost than hand-fitted types.

Your local AMWELD Dealer can supply all of your interior door needs — call him today or write to us for complete information.

AMWELD® BUILDING PRODUCTS DIVISION
TAKE YOUR CHOICE of these AMWELD® Space Savers

AMWELD®
Steel Sliding Closet Door Units

AMWELD® "K-D" Sliding Closet Doors
Birch Finish or grey prime coat

Save from 6 to 9 square feet per closet in waste door swing space. Available factory painted with baked-on neutral grey enamel primer — ready for your choice of finish coat or can be furnished with new Birch Finish ready-to-install.

Made of 20 U. S. gauge cold rolled steel. They will not warp, shrink or crack. Ideal for closets, cupboards, as well as basement, attic and garage storage units.

AMWELD "Assembled" Sliding Closet Door Unit

One piece welded frame comes ready-to-install. Prime finish panels same as "K-D" unit. All hardware supplied. Can be supplied for plaster, wood stud, or masonry walls.

SIZES AVAILABLE

<table>
<thead>
<tr>
<th>Opening</th>
<th>No. Panels</th>
<th>Height</th>
</tr>
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<tbody>
<tr>
<td>3'0&quot;</td>
<td>2</td>
<td>6'9&quot;</td>
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<td>6'9 1/4&quot;</td>
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</tbody>
</table>

AMWELD SNAP-IN HARDWARE

"K-D" and Assembled Sliding Closet Door Units furnished with time saving easy to snap in hardware. No screws, nuts or bolts required. Saves time on installation — makes job simple and secure.

- All hardware simply snaps in place.
- Two deeply recessed non-tarnishing plastic door pulls snap in each panel.
- Lifetime rollers provide easy, silent operation.
- Self-adjusting spring-held guide keepers assure ease of operation — prevent sway and derailing.

And here is the Newest
AMWELD® SPACE SAVER
AMWELD® SLIDE-AWAY
Pocket Door and Frame Unit

Eliminate door-swing problem areas with the AMWELD Slide-Away. Modern, attractive flush door when closed — glides into wall recess, out of sight — out of the way. All steel door construction — will not warp, crack, or shrink. Comes factory primed with grey baked-on enamel — ready for your choice of colors. Frame unit available separately if desired.

Easy-To-Install — Framing Unit is made of heavy gauge steel channel with wood core — nails to ordinary studding.

Brass Finger Pulls or Latch Sets — Finger pulls can be furnished for closets and ordinary doorways — latch sets available for bathrooms and bedrooms.

Two Sizes Available — The Slide-Away is furnished in two widths — 2'6" and 2'8" for (13/4" thick, 6'8" high) AMWELD Steel Flush Doors.

AMWELD® INTER-LOK
"K-D" Steel Door Frames

Here is an interior door frame that one man can assemble in 11 minutes. Hammer is only tool needed — no screws or pins. Corners are mitered — does not require open corners to fasten assembly together.

Supplied in 4 1/4", 5 1/4", 6 1/4" jamb thickness for 1 5/8", 2'0", 2'4", 2'6", 2'8", and 3'0" door widths. Made of 18 U. S. gauge steel, frames are grey primed at factory.
Steelcraft Steel Residence Casements are made of heavy hot-rolled solid sections of uniform thickness, with butt welded mitred corners. Extra long reinforced hinges provide ample clearance for safe and easy cleaning of the exterior of the glass from the inside. Sections are designed for maximum daylight. Heavy bronze finish roto or lever type hardware may be used for ease in operation of the ventilator. Screens and Steelcraft Aluminum Storm Sash are easily attached to the inside of the frame. All standard Western and Western modular sizes also available.

Steelcraft (Steel Inside-Outside Trim)

The installed cost of trim and casement window is considerably less than the multiple piece window frames and trim. It is a complete inside-outside window trim... no extras to buy... the window sill, the window stool, the inside moulding and the outside trim, the inside trim, the fins, the flashing—everything it takes to trim a window. It's all galvanized and bonderized with a baked-on coat of paint for long-lasting protection.

Steel Basement Sash Form

Easy to use. Saves time. Eliminates wood form carpentry, assures correct placement in wall and provides attractive bevel finished perimeter.

Steel Basement Sash

Steelcraft steel basement windows are made of hot-rolled sections which provide double weathering contact throughout. Armless ventilators assure trouble-free operation. Positive handle locks sash tight against frame.

Steel Utility Window

For barns, basements, shops and garages. They have removable tilt-in type armless ventilators and provide continuous double weathering contact.

Interior Casing

Consisting of head, jamb, and sill members, this casing eliminates plaster returns, stools and trim. Shipped knocked down for economical stacking and storage. Available in all types and sizes for residence steel casements.

Exterior Surround

Designed with identical contours and ends accurately coped, this surround presents neat corners and joints in the assembly. It is nailed to the rough openings and the casement is attached with self-tapping screws.

Steel Lintel

Available in a wide range of stock sizes for any window or door opening. Continuous ribs strengthen the heavy gauge steel, and provide an excellent base for brick and mortar.

Steel Door Frames

Use this modern building product at a great reduction in cost. One-piece all welded construction... won't crack, shrink, swell or warp. Reinforced mitred corners won't open. Hinges spot welded to frame; brass strike plate loose hinge butts and pins furnished.

Knocked Down Door Frames

Knocked down door frames are designed for economical shipping, for maximum storage, for quick easy assembly and installation.
Aluminum Double Hung Windows*

The trim appearance of Steelcraft aluminum double-hung windows blends with all types of architecture. They are quickly installed... easy to operate... will not rust, rot or decay and never need painting. Flexible stainless steel and rubber weather stripping make both heating and air conditioning more efficient. They are delivered complete, factory assembled, no extras to buy, no hardware to install... glazed or unglazed according to your specifications.

*Will be available shortly.

Steelcraft Intermediate Projected Steel Windows*

Steelcraft Intermediate Projected Steel Windows are designed for use in schools, hospitals, offices and other types of buildings where maximum light and draft-free ventilation are important factors. They are easily screened and will not interfere with blinds or shades.

Steelcraft Intermediate Projected Windows are made of high quality hot-rolled, new billet steel and are sturdily constructed. Double contact weathering is provided on all four sides of the ventilators.

*Will be available shortly.

Steel Doors*

Steelcraft industrial steel doors will not warp, shrink, swell, chip or splinter. They are fire-resistant and will give years of trouble-free service. They come to the job with lockset and hinge cut-outs already fabricated to receive standard tubular lock-sets... no fitting, no drilling or mortising, simply insert hardware and hang door. Rights and lefts are interchangeable by reversing the doors. Steelcraft doors are finished with a special baked-on enamel providing an excellent base for field painting.

*Will be available shortly.
Choice of 4 complete wood window units...

FLEXIBLE is the word for the new Flexivent Window Unit, newest Andersen WINDOWALL. Ribbons, groups, stacks! Awning or hopper sash operation!

Versatile FLEXIVENT window — newest Andersen unit

VERSATILE — You never saw a window with more uses than the new Andersen Flexivent. Hundreds of combinations possible from 9 sizes of units.

LOW IN COST — Simple hardware, simplicity of design and simple operation on friction hinges have kept the cost of Flexivent low. Fine for medium and low priced houses!

HIGHLY WEATHERTIGHT — Flexivent is completely weatherstripped. Outside double glazing panel optional.
ANDERSEN CASEMENT WINDOW UNITS—Many sizes, including picture window combinations. Two sash widths; 22 1/2" (illustrated) and 18". One light, horizontal, or cut up glazing.

ANDERSEN WINDOWALLS are complete wood window units...carefully engineered and precisely manufactured from beautiful insulating wood. Sold only through millwork dealers. For specification data and details, see your millwork dealer, consult Sweet’s Light Construction File, or write Andersen Corporation.
Genuine African Mahogany is recognized everywhere as the King of Woods — is far more desirable than ordinary woods.

Mengel Mahogany Flush Doors are built with faces of genuine African Mahogany, which automatically upgrades any building in which it is used.

Yet you can buy Mengel Flush Doors, or Standardor Flush Doors, with faces of genuine African Mahogany, for fewer dollars than you'd pay for comparable doors of almost any domestic wood!
AN ALL NEW DESIGN THAT TRANSCENDS CENTURIES OF SAW AND HAMMER THINKING

kewanee steel door frames

THE FIRST ADVANCED STEP IN DOOR FRAMING

MODERN APPEARANCE...
A truly beautiful door frame; gives rooms a look of spaciousness. No dust-catching projections. Slender, graceful, tight-fitting lines.

LOWER FIRST COST...
The most economical door frame on the market.

LOWER INSTALLED COST...
Can be installed in a fraction of the time required for ordinary jamb and trim. Installation is simple, requiring about 1/2 the time. No mortising of jambs for hinges and strike...no trim to be applied later...no filling of nail holes...no prime painting.

SHIPPED KNOCKED DOWN...
Compactly packaged in individual shipping cartons, Kewanee door frames are easy to handle and store, and they arrive on the job in perfect condition.

Kewanee has found a way to beautifully finish door openings, throwing into discard long hours of cutting and fitting, and high-cost superfluous material. The Kewanee steel door frame, consisting of three pieces quickly installed with only two tight-fitting joints, provides a perfect meeting of plaster or drywall with the frame.

CONSTRUCTION FEATURES...
Nail holes are provided every 2" along flanges of frame, assuring rigid attachment to subframe, preventing vibration and eliminating metallic sound. Jambs punched and recessed for standard butt hinges.

MADE IN TWO TYPES...
Plaster type has recessed edge which serves as plaster ground. Made of galvanized steel, especially treated for perfect paint adhesion.
Drywall type has recessed edge to receive wallboard. Resulting joint requires no taping. Made of cold-rolled steel, coated with aluminum primer.

Try Kewanee Door Frames in Your Next Project

OTHER KEWANEЕ BUILDING PRODUCTS

STEEL WINDOW BUCK...
If you pour your foundations, the Kewanee Window Buck is a MUST.

STANDARD BASEMENT WINDOW...
Nation's biggest selling steel basement window. Tight-fitting with broad sill and wide fins. Long locking handle gives jam-tight closure. Provided with arms for safety operation. Supplied for putty or puttyless glazing. Kewanee screens and storm sash snap on in an instant without use of clips or screws.

An Economical, Beautiful Door Frame
Write for literature.

KEWANEЕ MFG. CO.
4453 Burlington Ave., Kewanee, Illinois

APRIL 1953
structural details — walls of glass...

No. 1 — Rabbeted 2 x 6, with stops.

No. 2 — Non-rabbeted 2 x 6, with Thermopane centered, using stops inside and out.

No. 3 — Rabbeted 2 x 6, with single stop.

Three suggested methods for framing double-glazed windows. Dimensions of openings should be ½ inch larger than unit being installed. Ample glazing compound must cushion glass unit, with setting blocks used for any double-glass units whose width and height combined total 80 inches or more.

(Continued from page 168)

the “window wall” type of construction. This double pane typically consists of two pieces of good quality plate glass mounted in rubber with an air space of ¾ inch or so between. This provides insulation and reduces the condensation which usually occurs on glass in cold climates. Triple glass units are also available.

Special Types

There are many and varied special types of windows available both as standard units and as custom-made installations. Among them are the electrically-operated picture windows which are hung from a metal screen which rolls up at the top. As the screen unrolls, the window drops down into a slot and the screen covers the opening. These motor-driven units come complete in a package, ready for installation.

Another special type is a modification of the simple utility window, and is a bottom-hinged panel opening inward with screening across the opening. The entire unit is in a metal frame ready for installation in a glass block wall. Modular units are available.

Louvred window units for use with picture windows can be obtained in wood or metal. These are strictly ventilating devices, can be closed and made weather-tight. Other types of jalousie windows, with horizontal strips of glass, are rated as weather-tight and provide controlled ventilation as well. Glass jalousies are frequently installed in door panels.

Another manufacturer produces a louvre-type shade screening of metal with the louvres set close enough to keep out pests and insects but far enough apart to provide ventilation and shade. This also affords privacy, as you can see out but people on the outside cannot see in.

Tension screens are another recent development which housewives have found convenient, especially when it comes to cleaning windows. Screens snap into place from the inside, roll up for storage and are easily manipulated.

Two basic types of louvres, with project-out and project-in bottom light

DIMENSIONS SHOWN ARE OPENING DIMENSIONS. ALL UNITS SHOWN AS VIEWED FROM OUTSIDE.
they all AGREE!
THERE ARE OUTSTANDING
ADVANTAGES IN USING
MONARCH
IN-A-SLIDE
BASEMENT WINDOWS
for Better Home Building

All-Steel In-A-Slides are stronger
and of better design. More profita-
ble, too, because of increasing de-
mands by better home builders
everywhere.

In-A-Slides are more practical,
easier to install and a better all-
around basement window for the
home owner.

In-A-Slides' tilt-back sash are quick-
ly removable and interchangeable.
Make for easier cleaning and assure
better ventilation. Their snug fit
makes them all-weather tight.

---

MASTER NO-DRAFT SASH BALANCE

has
no equal in

- simplicity of installation,
- quality of materials or
  workmanship.
- economy of time and labor
  in pre-fitting double hung
  windows with sash balances
  and weatherstrip in a
  single unit.

- The Master No-Draft Spring sash balance and
  metal weatherstrip combination is the ideal unit
  for pre-fit window assembly. It is simple, re-
  quiring only two sash rabbets. It is satisfactory
  in use, and proved by thousands of installations
  from remodel jobs to huge government housing
  projects. It is the original patented quality unit
  manufactured by the leader in the development
  and sale of this type of equipment.

Every quality product has its imitation. The
difference between the two may not be appar-
ent but it is always there . . . either in ma-
terial, in workmanship, or in design. When you
install an assembly which must maintain your
product's reputation be sure that it will do so.
Hundreds of mills are now supplying thousands
upon thousands of sash pre-assembled with
Master No-Draft Sash Balances.

Master No-Draft sash balances are installed
from the far northern end of Alaska to the Aten-
ions to the tip of South Africa in Johannesburg.

- Write today for complete details.
  Give your windows this sales fea-
ture. We also manufacture the
  world's finest weatherstrip for win-
dows and doors.

SCRIBBS AND STORM SASH TO MATCH
Sold Through Dealers Only

When you think of Basement Windows Think of
NEW MONARCH MACHINE & STAMPING COMPANY
406 S. NINTH STREET
DEE MONEE W. IOWA

MASTER METAL STRIP SERVICE, INC.
1720 No. Kilbourn Ave. • Chicago 39, Illinois

APRIL 1953
Split-level homes are gaining popularity in Eastern States. Ted Engleman, of Adelman Lumber Co., reports that many builders in the Pittsburgh area are concentrating entirely on this type of residential construction.

It is significant that tri-levels are now being built by speculative operators. Until recently, only a few custom homes were designed to capture the best features of both the one-story and two-story houses. Public enthusiasm has been generated—first of all—by the pleasing variety of exterior lines. The tri-level home can be designed to hug the ground with the attractive primary lines of a long, low, one-story structure. Those who object to the extreme contemporary "flat-top" single-level monotony find variety in the half-story difference between sections of the roof.

Architects are encouraging this trend toward increasing the amount of usable living space within the exterior limitations. Much of the privacy of a good two-story structure can be achieved in the tri-level and many construction economies (heating, plumbing, wiring, roofing, etc.) are possible. The split-level home offers a good compromise between the economy of a two-story residence and the charm of ranch-types.

Paul Hodges and Ralph Lineberger of Royal Oak Wholesale Company, Royal Oak, Michigan, find that their customers (Michigan lumber dealers) are leaning more and more toward the handling of brand-name products only.

Hodges feels that home buyers are now demanding the products with which they are familiar. In turn, builders are willing to pay a fair premium for high-quality, nationally known, building materials. Dealers don't like to inventory products which don't sell. They find that "off-brands" are not a bargain at any price.

This attitude of lumber dealers fits in with the general trend toward more aggressive dealer merchandising. Building material dealers find that local merchandising is most effective if it ties in with national sales promotion and advertising programs of the product manufacturers.
Studies are now being conducted in ten R-O-W manufacturing plants to determine the best method of treating wood against decay and simultaneously reducing swelling and shrinking to a minimum.

Wood treating has been general practice among R-O-W manufacturers for some time but there have been differences of opinion about the most effective solutions and the value of the vacuum process as opposed to the dip-method. Deeper penetration and greater production speeds are claimed by those favoring vacuum process.

In many areas, home buyers have been educated to expect homes to "come equipped." They have seen so many new houses with dishwashers, garbage disposers and other appliances that builders are having trouble selling new houses without them. In Los Angeles, according to T. M. Cobb Company, wholesale building material suppliers, four out of five of the 5000 new houses completed each month are equipped with a garbage disposer.

The R-O-W DISTRIBUTORS plant at Rocky Mount, Virginia is owned and operated by D. C. Vaughn. This plant long has been called "the largest sash and frame operation in the world." It is generally conceded that this plant, alone, produces more wood windows than the total sold under any other name. It is one of the eleven primary R-O-W plants established at strategic shipping locations throughout the country.

In addition, there are fifteen R-O-W assembly plants and fifty national warehouses to further reduce shipping costs and improve delivery service. Fifty two distributors and over 400 salesmen serve a total of nearly 11,000 authorized dealers. Arthur E. Blow, who has been President of R-O-W Sales Company since its start in 1939, is confident that the national preference for R-O-Ws will continue to increase. This, in spite of increased direct competition.

"We not only make a better quality window," Mr. Blow says, "but the plus-value removable feature doesn't bring our price above other good wood windows. The additional fabrication cost is offset by the savings gained from our method of distribution.

Buyers of modern homes are entitled to the convenience and beauty of removable wood windows. No other window can duplicate the weather-snug construction of R-O-Ws. Over 8,000,000 R-O-Ws are now in daily use.

See your local lumber dealer or write

R-O-W SALES COMPANY 1328 • 66 ACADeMY AVENUE • FERNDALE 20, MICHIGAN
**FLIP...and it's OPEN!**

**ZIP...and it's CLOSED!**

Pre-packaged, Ready-to-Install
NOVOPY* SLIDING DOOR UNITS
assure permanently trouble-free service!

Novoply Sliding Doors are s-m-o-o-t-h, e-a-s-y glid-
ing doors! An adult can push 'em back and forth
with a finger...and even a little child can always
work them without any trouble at all!

These precision-built units are very simple to install
...easy to adjust. Made of the flattest paneling ever
produced — beautiful 3/4” thick Novoply — they are
guaranteed not to warp more than 1/8”, if properly
installed.

They come pre-packaged, with pre-cut jambs and
header as well as all necessary hardware, including
ball-bearing top guide rollers and overhead track.

Ideal for closets and non-loading bearing partitions
between rooms. Novoply Sliding Doors are wanted
for new and remodeled homes... office buildings... ap-
artment houses... hospitals, schools, motels and
trailers. A tremendously profitable market you can’t
afford to miss!

So see these Novoply Sliding Door Units right away.
Our warehouses have them in stock and will give
you complete details. Or, use coupon below.

---

**United States Plywood Corporation**

World’s Largest Plywood Organization

55 West 44th Street, New York 36, N. Y.

Please send me further information, dimensions, etc., on Novoply Sliding
Door Units.

Name

Address

City Zone State

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**For**

**Hope’s Steel Residence Casement Windows**

Hope’s new Inside-Outsid trim combination saves
you money, time and effort installing Hope’s Steel
Windows. Rough openings easily prepared; no sheath-
ing to cut back or notch; you install trim without need
for any finished carpentry whatever, either inside or out.

This solid steel trim construction makes window
frames that never warp, shrink or swell and are fire,
insect and vermin proof, adding extra value to the
home...with lower costs to the builder.

Hope’s new Metal Trim combinations assemble
completely in a few minutes either at the warehouse
or on the job. They accommodate all standard sizes
of Hope’s Steel Windows. For complete information
write for Brochure No. 132.

**Hope’s Windows, Inc.**

Jamestown, N. Y.

THE FINEST BUILDINGS IN THE WORLD ARE
FITTED WITH HOPE’S WINDOWS
BOOST SALES
Capitalize on Etling Window sales appeal. Sell homes faster, at greater profit.

CUT COSTS
Easy to install. Just place it, square it, nail it.

COMPLETE UNIT
Factory primed and glazed. Sash, houldwell balances installed, tested, adjustable frame, carton-packed.

PICTURE WINDOWS
In-swinging side sash. Stationary center section glazed with Twindow, thermopane, or 1/4-inch plate glass.

10 STYLES 35 SIZES

WRITE TODAY:
Please send catalog, specifications.

ALUMATIC ROYAL
ALUMINUM COMBINATION STORM-SCREEN DOORS

Why put old-fashioned storm and screen doors on the new homes you build? Make them more attractive, more practical, more "sell-able" with Alumatic ROYALS!

ROYALS add charm and extra value to every style of home and your buyers will go for their practicality! ROYALS take all kinds of abuse; never need painting; assure savings on upkeep and repairs for years to come.

Your local building supply dealer has the new Alumatic ROYAL — see for yourself how much more beauty and value the ROYAL can add to your homes. Special low contractor prices — delivered complete with all hardware, closer, and aluminum jamb — ready to install!
Building a few houses or a large development, you'll find ALWINTITE aluminum windows offer real "sales appeal." ALWINTITE offers a choice of window styles to satisfy any house design. All are finest quality. All are easily installed.

DOUBLE-HUNG WINDOWS
Available in 4 basic types, in 35 standard stock sizes. Completely assembled with built-in weatherstripping. Also available with Fin-Trim. Corner, bay and in-line mullions. Screens and storm sash to fit.

PICTURE WINDOWS
In 21 standard sizes. Can be used alone or with double-hung windows for ventilation. Will take 3/4" plate glass or 1" double glazing (Thermopane or Twindow).

SLIDING WINDOWS
In 12 modular sizes and 3 standard sizes, with or without Fin-Trim. Use independently or in window panel systems. Can be mullioned horizontally. Screens and storm sash available.

PICTURE-SLIDE WINDOWS
New picture window flanked by sliding vents at each side. Available in 3 standard sizes with integral Fin-Trim. Ideal for living rooms, dining rooms, kitchens and bedrooms.

VIEWwall WINDOWS
Large floor-to-ceiling (6' 4½" high) picture window unit in 3, 6 or 9 light sections with sliding windows and fixed lights. Will take stock size Thermopane.

COMBINATION STORM WINDOWS and DOORS
In addition to its line of prime window products, ALWINTITE also manufactures a line of "Triple Channel" combination windows and a superior quality combination storm door. Write for complete details.

The complete line of ALWINTITE window products are stocked and warehoused by distributors from coast to coast. For detailed installation drawings, a copy of our complete catalog and prices, write to Dept. AB-4.
combination screens and sash units

**FOR SUMMER**
During rainy weather the top sash may be lowered to allow ventilation. Air will enter through the screen and flow up around the meeting rail and top section of the upper sash.

**FOR WINTER**
Ventilation can be controlled by opening the bottom unit of the storm sash and lowering the top sash. Air will flow up around the meeting rail and top section of the upper sash.

Typical combination steel sash with screen and storm sash provide year 'round comfort. Various combinations of window adjustment may be made to provide storm protection and adequate ventilation at all times.

(Continued from page 183)

Some manufacturers are producing what amounts to triple-hung units, which have a standard double-hung window plus a double-hung storm sash plus a one-half screen unit—all built into the same prefabricated frame, complete with weather stripping and balances, or pressure weather stripping for easy removal and cleaning of the sections. Ready for installation at time of construction, these units simplify matters a great deal for the builder.

Storm sash for casement and the awning-type windows, as well as screens, are devised for handling and installation on the inside of the window. Rubber or other weather seal is usually provided around the edges, and storm sash frequently comes with built-in ventilator lights so that winter ventilation may be controlled as desired.

**Basement and Utility Windows**
Wood or metal basement and utility window units, set up and ready to install, come with or without storm sash and screen, and are normally provided with frames, hardware and accessories in one package from the manufacturer. Frames are grooved to hold mortar, and wood units are chemically treated to resist rot and insects. Screen and storm sash are fitted to fasten from the inside.

One type of basement window is fitted with reversible sash which may be hung to open either at top or bottom. Removable sash may be reversed in a matter of seconds.

**HOPPER VENT WINDOWS**
Utility window units are made to fit modular principles, come already glazed, with top vent opening inward; an outer screen across this opening is built in to keep out insects and vermin. All units are easy to operate, lock securely, and have few moving parts to get out of order. They are ideal for barns, farm and storage buildings.

(Continued on page 189)
Who but TRUSCON can offer you
THE MOST COMPLETE LINE OF

RESIDENTIAL WINDOWS
Truscon types for every style of architecture
- Ranch types suited to one-story homes. Can be fitted with double insulating glass.
- Double Hung window—a Truscon exclusive—is the largest selling steel unit of its type. Stainless steel weatherstripping and motor action spring balances built-in.
- Aluminum Casement—Truscon's newest—is modular designed to match standard concrete block dimensions. It's strong, rigid, improved hardware.

PROJECTED WINDOWS
- Architectural Projected steel windows; ample light and ventilation, plus freedom from drafts. For buildings of all types. Heavy ventilator sections. Minimum air infiltration.
- Intermediate Projected—great variety of sizes and design for every type of building—including residential. Special heavy sections. Projected ventilator movement provides flexible control and weather-protection.

RESIDENTIAL DOORS
For interior use
- Truscon Steel Doors and Frames won't warp, swell, shrink or stick. Bonderized and baked-on primcoats, readily painted. Available in many standard door opening dimensions.
- Sliding Doors provide complete closet accessibility plus extra usable floor space. Economical to install. Precision made, heavily reinforced, slide easily, quietly on nylon rollers. 6' 8" and 8' 0" tall. Four opening widths: 5' 0", 4' 0", 3' 0", 6' 0".

INDUSTRIAL DOORS
- Built to withstand hard usage. Made of carefully formed heavy gage tubular steel members, reinforced at corners and electrically welded at joints. Sturdy and well adapted to constant service requirements. Available in single and double slide and swing types, for standard door opening dimensions.
METAL BUILDING PRODUCTS!

- Here are products you need on every construction job from the moment the first shovel of earth is turned. All are manufactured by Truscon—world's largest fabricator of steel building products—and feature the quality and craftsmanship you've the right to expect from the leader.

For example, Truscon steel windows are Bonderized, and given a baked-on prime coat of high quality Bakelite-base paint. They can't rot, warp, shrink, swell or stick. Truscon steel doors and frames assure perfect fit and permanent, trouble-free operation. Mass production and fast, easy installation mean important on-the-job economies.

Check the advantages of all the items listed here. Then concentrate on Truscon as the source for your metal building products—for dependability, for responsibility, and for quality backed by a fifty-year reputation of outstanding service to the building industry. Detailed literature describing all Truscon products will be sent you upon request.

METAL LATH and ACCESSORIES

"Metal Lath for Strength—Plaster for Beauty"

The plaster base for walls and ceilings that meets all requirements of modern construction; accepted by all building codes. Easy to erect and work over; easily formed into unusual shapes. Holds plaster firmly even when exposed to shock and vibration. Affords fire-resistive qualities.

"O-T" OPEN TRUSS® STEEL JOISTS

Great rigidity. High fire resistance; simple to install. Lightweight. O-T Nailer Joists also available with wood nailer strips applied.

"CLERESPAN® JOISTS

Provide clear spans up to 64 feet. Lightweight. Easily installed. Eliminate columns. Wood nailer strips easily attached.

FERROBORD® STEEL ROOFDECK

For any type of structure. Strong; lightweight. Roofs large areas quickly. Full-length interlocking. Units long enough to span over three or more purlin spacings.

REINFORCING BARS WELDED WIRE FABRIC

For reinforcing concrete slabs, footings, walls, girders, columns. Available from warehouse stocks.

Other Truscon Metal Building Products include: Stressteel Tensioning Units; Maxim-Air, Donovan, Detention, Pivot, and Security Steel Windows; Continuous Steel Windows; Limits; Pressed Steel Inserts; Curb Bars; Expanded Metal; Complete Steel Buildings; Steel Radio Towers.

TRUSCON® STEEL DIVISION

REPUBLIC STEEL CORPORATION

1050 ALBERT STREET • YOUNGSTOWN 1, OHIO

APRIL 1953
America's Largest Selling
Lowest Cost Louvred Window

SUN-SASH ... a louvred window that is designed specifically to meet your building needs. Sun-Sash is perfect for new construction or remodeling ... for kitchen windows ... porches ... breezeways ... interior partitions ... bathrooms ... attic ventilators and cellars. Specify Sun-Sash air-controlled louvred windows — America's largest selling louvred window.

Typical Elevation

<table>
<thead>
<tr>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
</table>
| 1'-2" | 6'-6"
| 1'-6" | 6'-8"
| 1'-8" | 6'-10"
| 1'-10" | 7'-2"
| 2'-0" | 7'-4"
| 2'-2" | 7'-6"
| 2'-6" | 7'-8"
| 2'-10" | 8'-0"
| 3'-0" | 8'-2"

The sash balance with everything you need for fast, easy installation. 4 different types ... special sizes to order. Simplified framing. Perfectly balanced with correct spring weight for each size. Gives you a low-cost, PROFITABLE installation. Complete booklet gives all details. Write today.

- Complete Line of Weatherstrips
- Nosings
- Architectural Bronze Thresholds
- Door Bottoms
- Screen Guides
- Bindings
- Tools
- Caulking Compounds

SEND THIS COUPON for your three copies of complete weatherstrip and sash balance bulletins.

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ADDRESS

CITY

STATE

CENTRAL METAL STRIP COMPANY

4343 North Western Ave.

Chicago 18, Ill.

WEATHER-BLOC

The Original

Single Unit VENTILATOR

For GLASS BLOCK SMALL PANELS

LOUVER TYPE ALL WEATHER VENTILATION
- No Sacrifice of Beauty or Privacy
- Controlled Ventilation
- Vandal-Proof From Outside
- Stainless Steel Body

WEATHER-BLOC on the outside presents a series of horizontal louvers which blend with glass block and permit ventilation regardless of outside weather and assures absolute privacy no matter where the Weather-Bloc is located. The inside offers finger-tip control of ventilation with adjustable louvers. Aluminum screen.

WEATHER-BLOC can be used in existing glass block panels or can be built into new panel construction as easily as a single glass block.

WEATHER-BLOC in STANDARD MODELS
- Standard — Glass louvers outside and inside
- Utility — Stainless steel louvers outside, glass louvers inside
- Economy — Stainless steel louvers outside and inside, 6 and 8 inch sizes only

Purchase through Your Glass Block Dealer or Distributor

Also Nationally Distributed by

WINCO DISTRIBUTING & MFG. CO., INC.

523 Briar Street, St. Louis 15, Missouri

WEATHER-BLOC

A Product of AIR RECTIFIERS, Inc.

3734 NORTH SOUTHPORT AVENUE • CHICAGO 13, ILLINOIS

AMERICAN BUILDER
how to install a metal door frame

Steel door frame arrives on the site assembled in one piece, with head, two sides of trim, anchor clips (or T-anchors, if the frame is to be installed in masonry walls), hinges, steel dust box, and brass strike spot welded to the frame.

For use in wood stud partitions with plaster finish, these frames can be installed before or after partition studs are placed. In wood stud partitions with dry wall finish, the wall board should fit tightly against the back band of the frame. Where thin boards are used, it may be necessary to place shims between the stud and the board.

Metal Doors

(Continued from page 185)

Metal doors of steel, bronze, aluminum, and a wide range of alloys are available in models which fit into both exterior and interior design. Hollow metal doors are easy to install, cannot sag, splinter, warp, or swell.

Metal doors of aluminum or glass will give good performance for long periods of time. Other types include metal-covered and tubular construction, and many metal doors are used in combination with large glass areas. Many manufacturers furnish sliding as well as conventional types of metal doors, and most of these doors come complete with frame and instructions for installation. As with metal windows, certain precautions must be taken to avoid scratches, to use a second coat of paint on steel doors and frames (unless a baked-on synthetic paint is used) and to avoid staining the metal.

Key to Door Nomenclature

The first digits indicate nominal door size, letter 'H' indicates both panels are metal, letter 'G' indicates lower panel is metal and upper panel glass, last digit indicates number of lights in glass panel.

Example: 3670 G2 Digit '3' indicates nominal door size in 3'-6" wide. Digit '6' indicates lower panel is metal, upper panel glass, last digit '2' indicates number of lights in glass panel.

2558 indicates door 2'-6" x 6'-6"
5010 indicates door 5'-0" x 10'-0" etc.

AETNA STEEL PRODUCTS CORPORATION

APRIL 1953

Metal Window Institute Data
GET THE FACTS on the Amazing Fleetlite Aluminum WINDOWS

Beautifully Modern
Reduces Building Time
Comes Packaged in Carton
Offers NEW LIVING COMFORT
EASY HOUSEKEEPING

- Here's the revolutionary new window you've been hearing so much about...the window that builders are applauding...the window home owners are specifying—FLEETLITE Aluminum Windows. They come, packaged and ready for installation, these complete year-round units combine interior and exterior double hung windows in a four-channel extruded aluminum frame. Keep homes warmer in winter and cooler in summer.

When you build—plan for the future, insist on FLEETLITE Windows for the home owners comfort—for the added sales advantage—for protection of resale value. It costs no more to have the best.

FLEETLITE Windows are the most handsome, most practical windows in America. Get the facts for yourself—today.

WRITE TODAY for complete literature on
FLEETLITE Windows

WOOD DOORS

Wood doors are made of many species, including softwoods, hardwoods, plywood, fir, Ponderosa pine, and in a variety of types of construction including flush, paneled, and in combination with glass inserts or panels.

Exterior doors for both home and commercial entrances are frequently heavier and more ornate than many interior doors. Both Ponderosa pine and Douglas fir doors come in a wide variety of sizes and designs, for both interior and exterior applications. The Fir Door Institute has set standards and specifications for the trade in the fir door group, and doors are manufactured to close standards for alignment, balance, and function.

A substantial number of wood doors have been made with fireproofing treatment, the wood being impregnated with fire-resistant chemicals. This increases the weight of the doors about 30 per cent, and several such doors have been made to pass the one-hour fire exposure test of the underwriters laboratories.

GLASS DOORS

Glass doors for both exterior and interior applications follow the trend in modern design toward the use of larger glass areas in walls of both commercial and residential buildings.

In commercial buildings, glass doors have come into common use for stores. In residential buildings glass doors are useful as a design feature creating a spacious appearance while affording separation; for example, keeping kitchen odors from the rest of the house, or preventing the colder air in enclosed porch from entering the rest of the living space.

Some glass door installations utilize stainless steel frames and fittings, but most use aluminum extrusions reinforced with structural steel. Because of the relatively great weight of these doors, special care must be taken to follow the manufacturer's instructions, so that the doors hang true and operate correctly, with door
GLASS DOORS for stores and public buildings readily combine with other treatments in the modern manner.

frames plumb and in proper alignment. Special glass with as much as four times the strength of ordinary plate glass is employed to make possible large doors which have no supporting cross-pieces.

**Combination Doors**

In addition to doors which combine wood and metal, wood and glass, metal and glass in various ways, a number of manufacturers who produce combination screen and storm sash also produce combination screen and storm doors. Door and insert units are available both in wood and metal, in a wide range of stock sizes. They come equipped with interchangeable inserts for screening or storm glass.

**Cabinet and Cupboard Doors**

Cabinets and cupboards offer an opportunity for the builder who operates his own millwork department. He can fabricate suitable cabinet units ready for installation. There are, however, a large number of companies which provide a full range of metal and wood doors, both of the hinged and sliding types, for cabinet and cupboard applications.

Sliding doors for wardrobe cabinets have become increasingly popular, especially since high construction costs have cut bedroom space to the point where sliding doors in thin wall partitions make for a real space-saving in the room. Decorative effects may be obtained by using flush types or panel types.

**Special Types**

Louvre doors have become popular in warm climates for entrance installations, and in colder climates for interior uses. Louvres may be of glass, wood or metal, and doors are

(Continued on page 195)
HETTINGER'S

Triple Seal

PATENT NO. 2172580

COMBINATION SASH BALANCES AND METAL WEATHERSTRIPPING

FINEST WINDOW COMBINATION ON THE MARKET.

EITHER THE FAMOUS STANDARD UNIT OR THE NEW ONE-PIECE FULL-JAMB COVER UNIT NOW AVAILABLE.

DON'T FORGET!
ORDER WEATHERPROOF DOOR WEATHERSTRIP SETS AND THRESOLDS WITH YOUR ORDER FOR TRIPLE SEAL.

SEND FOR FREE HAND MODEL AND PARTICULARS—SEE FOR YOURSELF! THEN PLACE YOUR ORDER.

The Weatherproof Products Corp., Waldo Sta. P. O. Box 8498, Kansas City, Mo.
"Modernfold" Doors fold rather than swing, stack neatly against the door jamb when not in use. In place of conventional doors they permit full use of valuable floor and wall space ordinarily lost to door swing. Used as a "movable wall" as shown below, a "Modernfold" door gives homes an "extra" room without permanent or inconvenient loss of living space. You can make rooms do double duty, speed sales, with "Modernfold" doors.

RUGGED, DEPENDABLE, EASY TO MAINTAIN

Frame: Steel, patented box construction, double-strength hinges at both top and bottom: smooth accordion-like action, assured rigidity. (Usually tall doors equipped with extra hinges.)


ANNOUNCING!

New "Spacemaster" folding doors

Latest innovations in design and production techniques enable the makers of "Modernfold" doors to offer "Spacemaster"—a quality folding door at a price that actually makes per opening cost less than that of conventional doors. Vinyl coated fabric cover, steel frame, patented box construction hinges. In "Decorator Gray," a neutral color that blends perfectly with any color scheme. Available through lumber and building supply dealers. Ask your "Modernfold" distributor where you can get "Spacemaster" folding doors. Or clip coupon.

TIME-SAVING, LABOR-SAVING INSTALLATION

Step 1. Slide head track onto trolleys, raise door to standing position, fasten it in place.

Step 2. Screw in jamb clips, attach jamb post to them. No planing or fitting necessary.

Step 3. Job is done! No hardware to install. No painting or finishing required.

Look in your city classified directory—under "doors"—for the name of our installing distributor.

Sold and Serviced Nationally

New Castle Products
P. O. Box 501, New Castle, Indiana

Gentlemen:
☐ Please send me full details on "Modernfold" doors
☐ Please send me full details on "Spacemaster" doors

Name: ______________________________

Address: ____________________________________________

City: ___________________ County: __________ State: ________
De Luxe METAL DOOR JAMB

PATENTED

OUR METHOD SAVES TIME AND LABOR COST

LEAVE THE DOOR AS IS AND ADJUST THE JAMB TO FIT THE DOOR

(No Welding)

Details of installation of double acting steel interior door, showing rough opening dimensions required

(Continued from page 191)

available in a wide range of materials to fit into design requirements. The jalousie-type of door claims the advantages of controlled ventilation with privacy.

Sliding doors either hung on a track with rollers overhead or resting on rollers at the bottom, are often used by the builder to gain space or add convenience to the home. They are particularly useful in connection with entrances to basement or attic stairs, in hallways where swinging doors would be in the way, and between rooms which can be thrown together for added spaciousness by opening the doors. These are frequently used in pairs like double doors. Sliding doors for closets are also available from a number of manufacturers.

SLIDING WARDROBE doors permit easier access to contents of closet and also save floor space

Folding doors of hinged construction are largely being supplanted in new construction with flexible folding doors of several types. These are either vinyl-covered plastic units mounted in steel frames which come ready to install or strong, light-weight wood slat material woven together and suspended from an overhead track. They operate easily, and...
FLEXIBLE DOORS and room dividers are used like standard doors. No trim is needed. Usually they hang from ceiling add a note of vertical corrugation which works into other design elements in the room in a pleasing manner. Builders estimate that folding doors take from 20 to 50 per cent of the space needed by ordinary doors.

Fire-resistant "doors for special purposes in small commercial buildings are also found useful in home construction in the custom-built field. These may be of metal or metal-covered wood, and in some instances are of chemically-treated wood. Various manufacturers provide a wide range of models and sizes which have passed the underwriters' one-hour fire-rating test.

Roll-Up Doors

Rolling doors for garage entrances or service entrances include roll-up type of grilles used also in porch and patio treatments in modern home construction. Rolling doors are neat in appearance, easy to operate, save space, give weather protection, burglar protection, and fire protection if treated with fire-resistant material. They can be operated automatically if desired.

Two Views of revolving unit used in small home closet construction. All stored material is easily reached.

Slide-View SLIDING GLASS DOORS AND WINDOWS...

save time, labor and money!

Slide-View makes homes more livable and saleable too. Here are important reasons why building contractors prefer Slide-View—

1 Strong sections of bonderized 14-gauge steel delivered to job in a complete pre-assembled package ready for easy, fast installation.

2 Costly time-wasting fitting and blocking eliminated by flat head and reinforced extra-strong threshold.

3 Glazing costs held down to a minimum by deep rabbets and metal bead.

4 All standard Slide-View types fall within stud thickness.

5 All units are fully adjustable and require no after-installation service.

On every house where you install Slide-View, you build a home of superior beauty, comfort and lasting value.

"Brings the Outside Inside"
WHAT YOU SAW at our Chicago Exhibit IS WHY WE SAY

"BETTER BUILDERS
BUY BUILDERS FRAMES"

WE SINCERELY THANK the 6,000 Builders, Distributors, Dealers and Architects who visited our Booth at the National Home Builder's Exposition in Chicago, and saw for themselves the advantages of our KD (knocked-down) Window and Door Frames. The enthusiastic acceptance of our products was magnificent. If you were not there, write us for details.

BUILDERS ADVANTAGES

CONVENIENT INSTALLATION before or after wall is raised. Drive a dozen nails and you are through.

NO ADDITIONAL LABOR. BUILDERS FRAMES are complete through-the-wall construction. No trim required inside or outside.

SAVE PAINT, only one coat needed.

SAVE TIME, many hours per house, many days per project.

BUILDERS FRAMES were designed for Builders, after exhaustive studies with Builders, Architects and Dealers, to help you meet the requirements of your customers—HOME BUYERS.

Our Window and Door Frames are shipped knocked-down to your warehouse, or can be shipped assembled direct to your job when specified. Home Buyers are enthusiastic about the fact that Builders Window Frames are absolutely water-proof in all corners.

DISTRIBUTOR ADVANTAGES

MINIMUM SPACE required for warehousing.

NO LOST SALES due to wrong size in stock.

NO DEAD INVENTORY. Small stock heads, sills and jambs make up into all standard sizes.

BIG SAVINGS ON FREIGHT over assembled units.

EASILY ASSEMBLED in your warehouse.

YOU CAN RECOMMEND and satisfy your customers with BUILDERS FRAMES.

"STEEL SEAL" ROOF EDGING

Galvanized gable roof edging. Nail to decking, slide roofing into place. Protects barge board from rotting, prevents wind from getting under roofing.

OTHER PRODUCTS

Steel and Aluminum Liners, Window Fins, Formed Lintels. Let us quote on your requirements for special window and door frames.

Write For Catalog and Dealer's Name In Your Territory

BUILDERS MANUFACTURING CO.

1514 Brown-Marx Building, Birmingham, Alabama

"BETTER BUILDERS BUY BUILDERS FRAMES"
Here's the interlocking, ventilated all wood core that provides unduplicated strength and stability.

On the surface, flush hollow core doors may look much alike, but it's what's beneath the face that determines the service and satisfaction that you can expect. Here's where the superiority of Paine Rezo doors is most pronounced; for nowhere else will you find equal dimensional stability, nor such lightness in weight combined with great structural strength.

For these reasons architects and contractors everywhere have installed more than five million Paine Rezo doors in buildings of every type. No other hollow core door has been so widely endorsed, so thoroughly time-proved. Remember, when you decide on Paine Rezo doors, you specify a door that not only looks good, but is good all the way through.

Write for an illustrated data bulletin.

1953 is the PAINE Centennial Year
Pivoted and Projected Windows

Commercial Projected

Typical commercial projected window (left above) and pivoted window (right), showing basic construction features including operating devices

Pivoted and Projected Types

Included in this category are awning windows with a hopper vent at the bottom which swings inward instead of outward; the heavy projected units; and the semi-protective pivoted types. With pivoted vents, the unit swings horizontally at the center instead of at the top, as in awning types, so that the vent projects outward and also inward at the same time. This allows windows to be kept open during rains; the projecting portion keeps the rain out, while the inner portion acts as a baffle to deflect air towards the ceiling. Units are available in wood, steel, solid bronze, or aluminum. They come with standard hardware and may be fitted with screens and in some cases with storm sash, particularly on the opening-out vents.

Combination Units

Combination screen and storm sash are available from a host of manufacturers, and are made in wood, aluminum, stainless steel, and other materials. Screens are furnished either full length or in half-length sections, wired with copper or aluminum cloth. Storm sash usually comes in two sections, making the combination unit a three-piece affair.

One manufacturer lists 20 stock sizes, and others make many more, as well as fabricating such units to order to fit existing windows of almost any structure. Metal units are sometimes built with a wood subframe, with steel or aluminum parts carefully finished and joined to the subframe.

Mechanical Operators

Lever-Arm Operators

Lever-arm operators are used for rapid control of short runs of projected or pivoted ventilators. Lever arms on a rotating shaft running parallel to the windows are connected to the ventilators by suitable links attached to steel plates. Movement of the lever arms opens or closes the ventilators as the shaft is rotated. Windows are securely locked in any position.

Power

Power for lever-arm operators is furnished to the horizontal shaft by a worm driven segmental gear which may be operated from the floor by an endless chain or by a shaft provided with suitable miter gears and handwheel.

Rack-and-Pinion Operators

Rack-and-pinion operators are used to control long runs of projected or pivoted ventilators or for short runs of continuous windows. Pinions on a revolving shaft engage straight or curved toothed racks which are directly connected to suitable plates on ventilators. Curved racks are desirable where clearances are limited. Use rack-and-pinion operators for heavy duty.

Power

Power for rack-and-pinion operators is furnished by a worm driven full gear operated from the floor by an endless chain or by a shaft with suitable miter gears and handwheel. Electric drive with remote control can be provided.
STORING—Steel residence casements should never be laid flat one on top of the other. Always place casements vertically, using two parallel planks as a base and lean one unit against the other. Do not pile any other materials on top of the casements, and do not permit building tradesmen to use the casements as ladders or as supports for scaffolding. Store the hardware and other fittings in a dry place where they will be safe and protected from the weather.

FIELD PAINTING—For best results, steel casements should receive the first field coat of paint before erection. Surfaces to be painted must be clean, and no painting should be attempted if surfaces are covered with frost or moisture.

ERECTING—1. Any steel residence casement that is damaged should be put in good condition before using.
2. When shipped, all ventilators are held shut. Keep the ventilators securely in place until erection.
3. All rough openings should be plumbed and squared during construction and will vary in size according to space needed for interior finish. Each finished opening must be 1/4" wider and 1/4" higher than the overall dimensions of the casement frames. This will permit installation without distortion.
4. The outside of the frame and the mullions should be buttered with mastic before the casement is placed in the rough opening. Application of mastic is not to be confused with caulking of the casement opening, which is an entirely separate operation.

5. If the casements are to be erected in wood construction, apply the screws so as not to distort the casement frames. Do not draw the screws tighter in one hole than in another.
6. If the job is of masonry or brick veneer construction, do not use the casement as a straight-edge for the brick, stone, concrete block or clay tile. Do not force the masonry units against the steel casement frame, as this will distort the casement and make weathering imperfect.
7. Where the ventilators extend to the head of the casement, a head drip is furnished loose when specified. It should be applied before the casement is erected. This is accomplished by placing the head drip on the top edge of the casement frame and tapping lightly to seat it in place. No screws or bolts are required. Where the ventilators do not extend to the head of the casement, no head drip is necessary, because a drip is provided as an integral part of the transom bar.
8. After the casement is erected and as you install the inside trim, be sure that you allow 1/4" clearance around the casement on the interior, so screens and storm windows may be installed.
9. The 1/4" clearance is needed at the sill for another reason, too—to provide room for the underscreen operator. You will get this 1/4" clearance ill in applying the inside trim, you bring the finished stool up flush against the bottom edge of the stool gauge on the casement. Then, when the underscreen operator is installed, it will give the appearance of resting on the stool.
10. After erection but before glazing, inspect the casements to see that all ventilators are weathered properly—that is, that the ventilator fits snugly when closed. It is difficult to weather the ventilator after glazing. Test the fit before installing hardware by pushing the ventilator closed gently. The top of the ventilator should touch first while the bottom of the ventilator extends 1/4" for each light high. Then a slight push on the bottom should bring the ventilator to bear evenly on the casement all around. Later, after you install the hardware, this top-to-bottom closing operation will be accomplished with the underscreen operator. Be sure all plaster and dirt are removed from the inside of the frame and do not attempt to force the ventilators closed when such conditions exist.
11. After glazing and painting, apply the hardware.
12. PUTTY—Steel window putty, especially prepared for outside use, must be used. Putty should spread easily and smoothly and should adhere to both steel and glass.
13. GLAZING—Spread putty over the glazing rabbet before setting the glass. Push the glass firmly into position so that putty fills all crevices and forms a uniform, watertight bearing surface. The back putty layer should be about 1/22" thick. Center glass in frame. Slip the glazing clip into place and apply the face putty.

Ceco Steel Corporation Data
Won't rust, corrode or stain and it's FREE!

ENOUGH LUMITE SCREENING FOR ONE DOUBLE-HUNG WINDOW

PROVE IT TO YOURSELF! Screen just one standard-size window (2'-0" x 3'-2")—then leave it up all year long. You'll agree Lumite outlasts all other screenings... won't rust, won't corrode.

Send this coupon today!

LUMITE DIVISION (Dept. AB-2)
CHICOPEE MILLS, INC., 47 Worth St., New York 13, N.Y.

I am a member of the home building industry and am interested in Lumite screening. Please send me enough Lumite to screen one (1) double-hung, standard window, 2'-0" x 3'-2", and the new specification brochure.

(Please attach this coupon to your business letterhead.)

Name
Address
City State

ARCHITECT □ BUILDER □ CONTRACTOR □ SUB-CONTRACTOR □

5 ways to use accordion doors

1 Flexible partitions between living areas add privacy when desired, create sense of space in limited areas when open

2 Division between dining area and kitchen creates mealtime intimacy, can be opened to ease serving and cleaning-up

3 Basement play areas screened off from furnace and utility area for convenience can be opened up for wash-line space and other utility functions

4 Hospitals and institutions find added flexibility in patient care with folding door partitions between beds

5 Flexible doors conceal closet and wardrobe storage walls and cupboard space without taking up valuable floor space
ideal
control
of
light
air
temperature
privacy

with

all-Flexalum® venetian blinds

Make your homes completely functional—with a completely functional window treatment. FLEXALUM blinds give light without glare, fresh air without drafts, comfortable room temperatures, and privacy without that shut-in feeling. And this most efficient of all window-coverings is also the most attractive, the most durable, and the easiest to clean.

The all-FLEXALUM blind gives you durability and lasting beauty:

Wipe-Clean Plastic Tapes and Cords
A damp cloth wipes away the stubbornest stains. Tape won’t shrink, stretch, fray or fade.

Snap-Back Aluminum Slats
Spring-tempered to snap back ruler-straight even when bent to 90° angle. Won’t rust, chip, crack, peel or change color.

Insist on this Mark
Look for the Flexalum “visible-invisible” trademark. It’s your assurance of the top quality venetian blind.

Write for local sources and free file of venetian blind information—AIA File #35-P-3

APRIL 1953
Complete "How-To-Do-It" information for faster, more efficient, and more economical installation of every type of metal windows!

Write today for your free copy of the big, complete THORN Catalog.

Steel windows in aluminum and steel windows—standard styles and sizes—standardize on 100% of metal windows.

THORN—The ONLY line of aluminum and steel windows you can standardize on 100%,
Now...RUSCO HORIZONTAL SLIDE Tubular Steel Windows!

New Addition to Prime Window Line Makes Ideal Treatment for Added Wall Space, Bedroom and Bathroom Privacy, Above Sinks, Etc.

The F. C. Russell Company has now applied the proven engineering principles of its widely-accepted vertical-slide Prime Window to a new line of Horizontal Slide Windows. These Horizontal Slide Windows offer the same exclusive features and advantages. Frame and window members are of streamlined, rigid, tubular galvanized steel, bonderized and finished with baked-on outdoor enamel. They are supplied as completely finished assemblies and provide the same ease and speed of installation and convenience during construction.

Rusco Horizontal Slide Prime Windows ideally meet design and construction requirements for high window placement, such as in ranch type houses, where added usable wall space is desired, and in hard-to-reach places such as over sinks, bathtubs, etc. They assure greater ease of operation at shoulder-high or head levels.

Rusco Prime Windows Are Fully Pre-Assembled Factory-Painted, Hardware Attached—All Ready to Install in Window Opening!

GLASS + SCREEN
BUILT-IN WEATHERSTRIPPING
INSULATING SASH (Optional)
WOOD OR METAL CASING
...OR STEEL FINS
all in one unit!

Dept. AB-43

RUSCO Galvanized Steel PRIME WINDOWS
FOR COMPLETE SPECIFICATIONS AND ILLUSTRATED CATALOG, WRITE THE F. C. RUSSELL COMPANY CLEVELAND 1, OHIO DEPARTMENT AB-43 IN CANADA: TORONTO 13, ONTARIO

APRIL 1953
The Door and Frame PACKAGED UNIT

It takes only 20 minutes to install a Ready Hung Door!

Yes, you can install 10 Ready Hung Doors in 1/2 a day, with nearly an hour to spare.

You save a lot of money when you do 25 to 40 hours work in less than 4 hours. In addition to direct labor cost savings, reduced man hours means reduced supervision cost, insurance cost, social security cost and accounting cost — because the job is finished as much as a week earlier, you save interest expense and close the sale sooner.

All these savings are yours because Ready Hung Doors are delivered to you with all the tedious work done — as it should be — on precision machinery and jig assembled on a high production assembly line. All you do is separate the halves of the two piece jamb, slip them back together in the opening and nail it to the wall. With nothing to saw, fit, chisel or plane you can't miss!

Ready Hung Doors save time-labor-money waste - worry - skill and do a better job.

Write for Folder 1451—26 cartoons in this folder (from our recent advertising campaign in this magazine) show 26 reasons why Ready Hung Doors save. You want this folder for reference; in addition, you will find the cartoons amusing.

Sold through lumber dealers.

For further information write the mill nearest you.

Ready Hung Door Co. 200 Seguin Street
SAN ANTONIO, TEXAS

Ready Hung Door Mfg. Corp
P.O. Box 29

MEMPHIS, TENN.

Ready Hung Door Mfg. Corp
911 Raper

NEW YORK, N.Y.
 Bailey Whalen Company
17 Park Ave., N. Orange, N. J.

READY HUNG DOOR CORP., Fort Worth 2, Texas

Look for this Trade Mark

Pat No. 2489029
Saran Plastic Screening

Saran screening is receiving current attention for use in windows and doors of residential, agricultural and industrial buildings. Special installations have varied from protective coverings on greenhouses to placing over children's play pens.

Highly resistant to damage and abuse, it has high resiliency. Rust-proof, stainproof qualities make it possible for screening to be left on windows, doors and porches all year round. It needs no protective painting. The mesh is easily washed with a damp cloth. It is also non-inflammable. This ease of maintenance reduces the expense in upkeep.

Saran screen cloth is very easy to handle. It can be splined into metal frames and tacked, stapled or splined into wood frames. A plastic spline which may be rolled into frames and placed either with a hand or an electrically driven wheel is available to screen manufacturers.

Saran screening is woven from a monofilament which is extruded from saran powder, cooled, stretched, inspected, spooled and woven into screen cloth. The saran powder is made by the Dow Chemical Company. It is a thermoplastic, derived from petroleum and brine as its basic raw materials. These are converted into vinylidene chloride and polymerized, generally with vinyl chloride. Saran is a copolymer of approximately 90% vinylidene chloride and 10% vinyl chloride.

Woven of a filament having a diameter of 0.015", the screening is produced in the commercial standard mesh, 18x14. This mesh is available in all standard widths, 24", 26", 28", 30", 32", 34", 36", 42", and 60". The standard colors are gray, an aluminum shade, and a dark green. A fine mesh screen, 20x20 mesh with 0.012" filament is available in gray only, in 26", 28", 30", and 36" widths.

GREGG Quality Millwork

COLONIAL CORNER CABINETS  
KITCHEN UNITS  
Base and Wall Cabinets  
FIREPLACE MANTELS  
COLONIAL DOOR ENTRANCES  
DOOR BLINDS  WINDOW BLINDS  
WOOD LOUVRES  
GABLE SASH  GABLE LOUVRES  
BASEMENT WINDOW UNITS

Packaged FOR YOUR CONVENIENCE AND PROFIT

GREGG & SON, INC.  
Framingham, Mass.  
MILLWORK OF QUALITY SINCE 1719

APRIL 1953

New ra-tox FOLDING DOORS

TO GIVE YOU  
THE ADVANTAGES OF LOW COST MODERN CONSTRUCTION...

The low initial cost of Ra-Tox Folding Doors plus the savings made by the total elimination or simplifying of wall construction... add up to impressive total savings on every house you build. Make all interior door openings except bathroom with simple plaster finish and install Ra-Tox Folding Doors. Eliminate costly corner clothes closets by installing room high Ra-Tox Doors on corner-curve track. Ra-Tox Doors are supplied complete, in wide choice of colors or natural wood finish, with all hardware and wood track, ready to install.

FEATURES

HANDLE-LATCH SET  
Complete new unit, an exclusive Ra-Tox Door feature, designed by Walter Dorwin Teague Associates.

CURVED WOOD TRACK  
Sensational, exclusive Ra-Tox Door feature. Joins with straight track for room high door installation to complete wardrobe or clothes closet.

VENTILATION... open slat design of woven basswood door fabric lets air pass through... important in heating, air conditioning, and clothes closet ventilation.

SAVE ROOM SPACE... small rooms are no longer a problem. Ra-Tox Folding Doors save room space wasted by "swing" of standard hinged doors.

ALL SIZES... to meet any need from standard door sizes up to room high doors or room dividers.

For Complete Information write for Bulletin 706

THE hough shade CORPORATION  
1044 Jackson Street * Janesville, Wisconsin
There is a Getty operator for every casement window ——

metal

or

wood

in new construction or as replacement

operators

on any remodeling job

H. S. Getty & Co., Inc.
3348 North 10th Street
Philadelphia 40, Pa.

Getty operators are found on more casement windows than all other operators combined.

Canadian Representative:
A. N. Ormsby Co., 23 Scott Street, Toronto, Ontario
One ... or a houseful

Whether your contract calls for remodeling a room or building an entire house, you'll increase customer good will when you install Lupton Metal Casements. Here are windows that will not warp, shrink, swell or rattle . . . that offer a lifetime of trouble-free service. They open and close quickly and easily . . . can be cleaned on both sides from within the room . . . blend with any type of architecture.

Add Lupton Metal Windows to the list of quality materials you install. They are available from coast to coast for residences, schools, hospitals, commercial and industrial buildings, in steel or aluminum. First cost is moderate, upkeep amazingly low. Install Lupton Metal Windows for tops in beauty — tops in low maintenance — tops in long-life.

Lupton sales offices are ready to give you full information. Representatives are usually listed in the Classified Section of Telephone Directories under "Windows — Metal" or "Sash-Steel". Write, wire or phone, you'll get prompt attention.

MICHAEL FLYNN MANUFACTURING COMPANY
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Steel Window Institute and
Aluminum Window Manufacturers' Association

LUPPTON
METAL WINDOWS
### OPENING SIZES—PREFIT LAYOUTS and GLASS SIZES

#### CHECK RAIL WINDOWS 1⅜”—POPULAR SIZES and DESIGNS

<table>
<thead>
<tr>
<th>Profit Face Measurements</th>
<th>Stiles</th>
<th>Top Rail</th>
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#### OTHER DESIGNS and SIZES of STOCK WINDOWS and SASH AVAILABLE

No attempt has been made in this catalogue to illustrate or list all of the designs and sizes of Ponderosa Pine Stock Windows and Sash that are available. On this and the following page are shown those that are most popular. For a complete listing of all standard sizes and designs, including one light sash, transoms and porch sash, write The National Woodwork Manufacturers Association.
how to install plastics screening

First step in attaching plastic saran screening is to start at top corners to hold material in place. Nail tacks or staples about 1½" apart.

Sides of screening are tacked next, folding under cut edges to make about a ½" hem. Molding strips are then nailed over hem and selvage edges.

tension screen installation

MALT-A-MASTER is the newest, brightest star in the building field. Architects and builders who specify MALT-A-MASTER window units find they have a new star salesman... for home buyers want the many new advantages that the MALT-A-MASTER now offers.

Remember, the great, new MALT-A-MASTER window unit is fully balanced... fully weatherstripped... and has removable sash. So hitch your 1953 building plans to this star performer—the MALT-A-MASTER.
The extra value in Vento Bonderized Residence Casement Windows includes: all casements drilled and tapped to receive storm sash and screens, operator arm guide channels attached with screws for easy removal and replacement, if necessary; ventilator frames constructed from the same heavy sections as the outside frame. This provides greater rigidity and stronger ventilators.

ALSO Vento "Champion" Barred Basement Windows; Vento "Champion" Utility and Barn Windows; Vento "Thrifty" Utility and Special Type Windows.
Write us for full information and name of nearest distributor.

Some desirable territories are open for representatives and distributors. Write for particulars.

NEW IMPROVED VENTO BONDERIZED "CHAMPION" BASEMENT WINDOWS give extra value because of their 14-gauge electrically welded frame, fins welded to jamb for quick installation and double contact with leak-proof watershed sill. A plus value incorporates a redesigned latch which assures positive operation under all conditions.

VENTO "THRIFTY" BONDERIZED BASEMENT WINDOWS give extra value because they are a real economy window especially designed for lower cost housing. Two position ventilation and easy sash removal. Fin flanges at jambs for quick installation. Three sizes, putty type only.

VENTO FORMED STEEL LINTELS give extra value because they permit the use of standard 8" blocks over door and window openings. Of 10-gauge steel, with stiffening crimp in center. Also formed steel lintels for brick constructions.
Raising higher the recognized superiority of Aluminum Windows...

Reynolds Aluminum Residential Windows

**DOUBLE-HUNG WINDOWS**
Extra-heavy depth, stainless steel locks and dustguards, fully weather-stripped. Precision balances (easily accessible tape balances or adjustable spiral balances). Supplied unglazed or factory-glazed with neoprene. Shipped ready to install.

**CASEMENT, FIXED AND PICTURE WINDOWS**
with welded joints for greater strength and weather-tightness...carefully assembled from Reynolds own extruded shapes...outstanding for high satin finish. Protectively packaged two to a carton. Complete accessories include Storm Sash and Screens.

**AWNING WINDOWS**
Featuring quick, positive closing and cross-lap weather-stripping in a superbly engineered version of this popular window type. Roto-operator opens bottom vent first. Full-open vents deflect both drafts and rain.

Write for catalog showing all types and sizes.
Reynolds Metals Company, Building Products Division, 2003 South Ninth Street, Louisville 1, Kentucky.

Military needs for aluminum limit supply, but Reynolds is rapidly expanding primary capacity. Check your supplier.

Reynolds Aluminum

April 1953
EVERYONE'S SWINGING TO DURALLS

Give customers extra luxury, give yourself extra profits... with Duralls. These screens save expensive on-the-job costs, cost less to buy. Customers love 'em... here's why:

NO LADDERS, HAULING, JUGGLING
Lightweight Durall Tension Screens snap on from inside, seal securely, never need paint... roll up for storage!

INSIDE JOB
No ladders... simply unroll Duralls, snap into place from inside, easy as a shade.

STORE IN A DRAWER
Duralls roll up, slip into handy dust-proof cartons... spend the winter in a drawer or closet corner.

TROUBLE-FREE
Duralls get out of your way fast for window washing, tending flower boxes, etc. Just release two clamps, push Duralls free of windows. Reach even top panes without inconvenience.

NO UPKEEP
Get 'em and forget 'em. Duralls never need paint or weatherproofing, hold their shape in any climate. Pure aluminum, can't rust or stain your house... outlast ordinary screens by years!

SAVE MONEY, TOO
Duralls actually cost less than ordinary screens... no upkeep. Get yours now!

DURALL TENSION SCREENS
West of the Rockies, ask for Rylock

Over 4,000,000 Duralls now giving complete satisfaction in every state in the Union. If your hardware or lumber dealer cannot supply you write us for the name of your nearest Durall dealer. New York Wire Cloth Company, 63 Park Street, New Canaan, Conn.
Roddiscraft Flush Doors

Build Lasting Customer Satisfaction

For Office Buildings, Schools, Hospitals, Hotels, Institutions, Apartment Houses

For Residences, Multiple Dwellings and Other Installations

Roddiscraft Solid Core Flush Doors

Fire Resistant — withstand a regular fire test for over 40 minutes. Provide extra protection where needed in multiple and single dwelling units and in institutional type buildings.

Sound Resistant — develop an average sound transmission loss of 30 decibels — only a little less than specially constructed sound retardant doors of much greater cost.

Resistant to Abuse — core, crossbandings and face veneers welded into a single unit with the inherent strength of true plywood construction.

Waterproof — for exterior and interior use. Phenolic resin glue provides two completely waterproof shields over entire area of the door on each side of the core.

Standard Thickness Face Veneers — provide greatest resistance to checking and abuse — permit better matching.

Roddiscraft Housemart Hollow Core Doors

Sturdy all wood construction offers these added advantages:

1. Extra strength
2. Greater resistance to distortion
3. Sure protection against core pattern showing through face veneers after finish is applied

Roddiscraft Housemart Hollow Core doors are generously made — contain ample wood at side and top and bottom edges for trimming and the safe anchoring of hardware. Lock blocks on both sides offer a wide choice of hanging positions.

Priced for the residential market — quality built for lasting satisfaction.

There is a Roddiscraft Door to meet every specification calling for wood doors. Call your Roddiscraft dealer for complete information.

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. 229 Varnum St. Marshfield, Wis. 115 S. Palmetto St.
Charlotte 6, N. C. 133 E. 27th St. Miami 38, Fla. 235-315 N. E. 73rd St.
Chicago 32, Ill. 3865 W. 41st St. Milwaukee 8, Wis. 4601 W. State St.
Cincinnati 4, Ohio 836 Depot St. New Hyde Park, L. I., N. Y.
Cleveland 4, Ohio 2217 E. 75th St. Ohio 7, Cleveland 1376 Plaza Ave.
Dallas 10, Texas 2800 Meddil St. New York 55, N. Y. 920 E. 149th St.
Houston 10, Texas 2425 Sabine St. Philadelphia 34, Pa. Richmond & Tope St.
Kansas City 3, Kan. 33 Southwest Blvd. St. Louis 16, Mo. 3344 Morganford Road
Los Angeles 58, Calif. 2670 E. Vernon Ave. San Antonio 5, Texas 727 N. Cherry St.
Louisville 10, Ky. 7201-5 S. 13th St. San Francisco 24, Cal. 345 Williams Ave.
San Leandro, Cal. 720 Williams St.

APRIL 1953

Roddiscraft

RODDIS PLYWOOD CORPORATION

Marshfield, Wisconsin
FIND OUT HOW EASY IT IS TO GET RID OF GAS FUMES WITH A National SYSTEM

- 5 Systems to Meet Your Needs
- Overhead and Underfloor
- For Present Buildings or New Construction

Designed and engineered to meet your exact requirements. Overhead systems are priced from $206.75; underfloor, from $794.45, depending on the number of units. Nothing else to buy, every "NATIONAL" System is complete with motor, blower unit, ducts, tubes and service extensions.

"NATIONAL" invites you to write for free literature. No obligation.

THE NATIONAL SYSTEM OF GARAGE VENTILATION
World's Largest Manufacturers of Exclusive Garage Ventilating Equipment
Dept. 701, 318-330 North Church Street, Decatur, Illinois

Gracious Living with BENDIX moldings

At small cost, builders can add great sales appeal through the use of BENDIX embossed and deeply carved molding. Learn how BENDIX moldings actually help clinch sales. Write for details.

BENDIX Mfg. Co.
192 LEXINGTON AVENUE, NEW YORK 16, N.Y.

Installation details for chain hoist mechanism installed with commercial and other heavy-duty garage doors. Door may be operated either manually or by power-driven mechanism, which may be controlled either from push-button panel or radio device in vehicle.

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Another THERM-O-PANEL "First" Window Systems

Cuts Costs! ... Increases Profit!

THERM-O-PANEL, widely known for superiority in the rapidly expanding panel window field, announces a revolutionary new idea—a way to increase profits by lowering costs.

NOW ... Only three basic units, instead of nine, provide unlimited versatility of fenestration—from ribbon-type to full window walls,

NOW ... You need to stock only one-third as many sizes.

NOW ... These three basic THERM-O-PANEL units come fully assembled and individually cartoned...ready for glazing with standard 45 1/2" x 25 1/2" Thermopane, (stand- ard 42 1/2" x 22 1/2" for ventilated panels).

- Think what this means to you in lower storage and handling costs; in greatly reduced construction costs—complete elimination of on-the-job cutting and fitting...When costs go DOWN, profit goes UP! Write for full details today.

THERM-O-PANEL Division • OHIO PLATE GLASS CO.
Box 496 • Toledo 4, Ohio

Branches in: DAYTON, FLINT, FORT WAYNE, DETROIT
This huge new plant is the result of tremendous demand for Ludman AUTO-LOK Windows. In a few short years they have forged into national dominance, because only AUTO-LOK gives homeowners everything they've ever wanted in a window with none of the disadvantages they've put up with in the past. No wonder AUTO-LOK is the window women want most!

The "growing pains" of production schedules, which taxed old facilities to the limit, have been solved. TODAY, Ludman is in a position to continue unexcelled research, design and craftsmanship... and to provide production without equal.

In sale after sale when competitive chips were down, AUTO-LOK Windows have made the difference. They're delivered on the job completely assembled... easy to install, no parts to lose, no adjustments to make... quickly available from your local dealer. See him today!
for 32 years THE "OVERHEAD DOOR"

has helped home builders to SATISFY home owners

A satisfied customer is your best asset. Take no chances! In every house you build, put this beautiful door — easy to open — perfectly balanced — expertly installed — and promptly serviced! It adds to the value of the home, wins instant favor with the owners.

THE "OVERHEAD DOOR"

TRADE MARK

FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL USE

OVERHEAD DOOR CORPORATION, Hartford City, Indiana

MANUFACTURING DIVISIONS:

HILLSIDE, N.J.  CORTLAND, N.Y.  OKLAHOMA CITY, OKLA.  PORTLAND, ORE.

NASHUA, N.H.  DALLAS, TEX.  LEWISTOWN, PA.  GLENDALE, CAL.

AMERICA'S GREAT NAME IN QUALITY DOORS

Look for this famous trade mark in the yellow pages of your telephone directory.
Narrow section upward-acting garage door adds note of sweeping horizontal lines to overall building design, particularly appropriate with modern ranch type construction. Wood components are treated with protective coating against fungus, termites, dry rot, and moisture. Good design is particularly important in garage doors inasmuch as their large size makes them prominent and even dominant factors in determining the exterior character and appearance of a home.

Attempts to catalog and tabulate sizes and dimensions of garage doors, their minimum rough opening requirements, wood jamb or metal jamb dimensions, and head-room requirements, break down among the complexity of hundreds of varying specifications of the stock items manufactured by the leading producers of modern garage doors. In addition, most companies also manufacture doors to order to fit nearly any special situation.

The American Builder completed a survey of the more than twenty leading manufacturers, all of whom cooperated to the fullest in providing information, with the net result that an almost complete lack of “standardization,” such as is had in residence windows and doors, is apparent in the garage door field.

Generally speaking, rough opening sizes correspond to door sizes, on the theory that larger openings may be brought down to size with the addition of framing materials to fill the opening. Cautionary note here is that such material must be of good quality and heavy enough to support the door and its mechanism properly. Other adjustments in fitting door to framing may be made by hanging door jambs slightly inside door opening proper.

Automatic door opening devices provide a similar complexity of specifications when attempts are made to tabulate or classify such elements as minimum headroom requirements, side room needed on right or left sides, dimensions of lifting mechanism, etc. Individual manufacturers specify size of motor to correspond roughly to weight of door the units must lift, but other measurements vary so greatly that each manufacturer’s specifications must be taken into account when an installation is being planned.

(Continued on page 220)

REMOTE CONTROL INSTALLATION LAYOUT

Remote control apparatus operates garage door at momentary contact of single switch to either open or close door. Headroom required for this model is 18”. Other models vary in headroom requirements: so it is essential that individual manufacturer’s specifications be consulted before ordering such equipment.

APRIL 1953
Take sound design, careful engineering, top quality materials, superb construction... and you have the ingredients that make Ro-Way America’s most wanted doors for residential garages or commercial buildings.

From every angle, Ro-Way doors are designed to please. Clean, simple lines that blend with and enhance any style of architecture. Famous features that assure smooth, easy-up, easy-down operation: Taper-Tite track and Seal-A-Matic hinges; ball bearing Double-Thick Tread rollers; Power-Metered springs individually powered to the weight of each door.

And every Ro-Way door is built to satisfy. Mortise and tenon joints both glued and steel doweled. Muntins, rails and stiles squared up with precision. Sections rabbered to assure weather-tight joints. Millwork both drum and hand sanded for finer finish. Heavy gauge steel hardware Parkerized and Painted after fabrication for maximum rust resistance.

So—for every garage or commercial building—specify Ro-Way and be sure of complete satisfaction.
The No. 19, a "self-starter" garage door with "Powermatic" Action, for 9' x 7' openings.
The No. 77 rigid-type, for doors 8' wide x 6'8" high. A popular budget-wise beauty.
The No. 400, for luxury sectional-type convenience at minimum cost; a new winner!

**EASIER OPERATION**
**MORE SELLING FEATURES**
**FAST INSTALLATION**
**MODERN DESIGN**
**LOW HEADROOM**
**WIDE RANGE OF SIZES**
**YEARS OF TROUBLE FREE SERVICE**

**FEATURING**
**"GLIDE-O-MATIC" ACTION**
for sectional-type doors

**ONE OF FRANTZ' FAMOUS 14 FEATURES**
The new Frantz No. 500, shown at right, has more features than you ever saw in an overhead garage door! Smart in appearance, modern with ranch-style panels, this sensational new Frantz model requires only 6" headroom (for single-width sizes.) Wonderful "Glide-O-Matic" Action provides for a mere turn of the chrome plated handle—and the door glides open as if by unseen hands!

**AMERICA'S BEST ENGINEERED OVERHEAD GARAGE DOORS**

When you see these modern overhead garage doors in action—when you experience their easy-opening and compare their beauty and their many other features—you will understand why so many dealers and contractors prefer FRANTZ.

Here are more than 25 sizes and styles of single and double-width, rigid and sectional type overhead doors. Here, also, for your special convenience, is a selection of Overhead Hardware Sets second to none. Whichever you prefer—complete doors or hardware only—Frantz has the answer. Write for Frantz' New Catalog No. 302.

**FRANTZ MANUFACTURING COMPANY • STERLING, ILLINOIS**
Decorative finishes may be added to asphalt driveway by substituting a coat of coloring material instead of the second coat of final sealer. A two-coat treatment with prepared latex material gives a lasting color note to the landscape.

**Asphalt Driveway Construction**

Excavate as necessary to permit installation of a base consisting of crushed stone, slag, or gravel, compacted with screenings or sand with roller weighing not less than 100 lbs. per inch of roller width. Roll until no movement occurs before or after rolls.

On this lay hot plant-mix asphalt 2” thick of base material 1½” or smaller in size. On this lay fine topping asphalt, hot mix, ¾” to 1” thick. Roll each course before laying next.

Allow curing period of two weeks or more; then treat surface with two-coat application of sealer.

Jack knife doors are made in two sections. When the door is opened, a canopy is formed on the outside of the building by the two folded door members. The door operates on a track installed on the jamb. Doors are counterbalanced with weights for easy operation, and large doors are provided with chain hoisting mechanism. These doors are used primarily for non-standard size openings and for situations where the space inside the building must be kept clear but an upward-acting door is also required.

**Planning and Design**

First of all, space for the car must be at least wide enough to permit car doors to be opened so individuals may get in and out comfortably when the car is in the garage. Ten feet is about the minimum width for this. It must be at least long enough so a person can get around the car with the garage door closed. That means at least six inches in front and about 18 inches clearance in the rear. With the exception of about three of the largest American passenger cars made, 20 feet is adequate for this. The ceiling or deck above the car should be at least seven feet six inches above the floor. These figures approximate the minimum requirements for housing the family car. FHA requirements in many areas specify minimum inside width of nine feet six inches and length of 19 feet.

Size of the lot and location of the garage determine largely where additional space can be provided in the unit so it can properly fulfill its function as a utility building. If it must be single-car width then the extra space should be added lengthwise. Even though the family may never intend to have two cars, a double-car 20-foot wide unit is desirable where space permits. Variations in providing extra storage and recreational space in garages can take an infinite number of steps in different directions from these two standard setups.

The Urban Land Institute in its "Community Builders Handbook" says: "It is recommended that storage space be provided in garages even where houses contain basements. Provision of storage space in the garage for tools, garden furniture, and similar articles is desirable. For single car garages, it has been found feasible to add five to six feet to the length of the garage for this purpose. This is preferable to widening the garage as this may require a greater lot width."

Home buyers definitely prefer the attached garage with direct access to the street. Garages on the rear of the lot are unpopular because of the great amount of paving required and their interference with the use of yards.

When planning the garage, consider traffic between garage and house, garage and rear yard. Consider the housewife shopper with a load of bundles to carry from car to kitchen. A large door opening directly to the rear or side of the garage is usually preferred. When single garages are built wider than the 10-foot minimum inside but less than two-car width, the eight- or nine-foot entrance door for the car should be placed off-center so that maximum storage or work space is allowed at one side.

In addition to considering size of lot, building codes, climate, street traffic, and parking space for visitors, plan for adequate wiring, good lighting, and suitable ventilation to remove gasoline fumes and other odors from attached garages. There should be provision for running water as well as window area for light over work space.

**Construction**

No matter how well designed the garage is, it can soon start to fall apart without a good foundation.
Footings and foundations should always be put down according to local code requirements and climatic needs. Recommended floor for the modern garage is concrete slab at least four inches thick and equipped with drain. Unless the slab is reinforced, the underlying bed should be cinders, gravel, or crushed rock at least four inches deep. Earth should be level and tamped. The concrete slab should be at least two feet in front of the garage to form an apron sloping to the driveway. An expansion joint should be provided between apron and driveway. One popular floor with slab and foundation in one unit is the thick-edge reinforced slab. These are 18 to 24 inches thick at the outside edges with the underside arched to a minimum of four inches at the center.

Fire guards: All attached garages should be separated from the house by a fire-wall and fire-resistant doors which conform to local codes and underwriter specifications. If the house heating unit is installed in the garage, it should be partitioned off to prevent loss of heat. Where door openings occur between garage and house, the garage floor should be lower than the adjoining floor, or the door saddle should be raised a few inches.

Garage Doors

The garage door is usually the biggest single unit of movable equipment built in as part of the housing establishment. It is also one of the largest and most conspicuous features of the average home. Designers and builders who desire to please their clients therefore accord the garage door problem much thought and consideration.

A large group of ingenious manufacturers, fully recognizing the problems of garage closures, have developed a host of excellent doors to meet an infinite variety of problems and tastes. There should be no valid reason why any modern garage door should not operate as easily as the front door of the home, and look just as attractive.

There are about six major types of garage doors on the market in a wide range of prices. These can be roughly classified as the roll-up or sectional door; the swing-up or panel type; sliding door; hinged doors; accordion doors and the two section upward-folding door. Upward-acting doors of one type or another are far

AUTOMOBILE bumpers and tail pipes scrape the driveway unless careful calculation is made on grade variations. A change of not more than one inch per foot within any 10 feet of distance will usually allow adequate clearance in the lead in popularity with builders and home purchasers.

Prime consideration in planning any garage for the installation of an upward-acting door is provision for (Continued on page 226)
THE NEW Calder OVERHEAD GARAGE DOOR LINE has a style and size for every need.

THE first four designs above suggest various types of parking areas and turn-arounds that can be incorporated as part of the garage driveway where they are necessary or desirable. Where these large areas are concrete they are also ideal for children's play or game courts. Dimensions shown are minimum. Where the driveway crosses the street curb, it must be flared at a three to five-foot radius.

Drawings Courtesy Fir Door Institute

Don't Get Out of Your Car!

SITOUCH ROBOT BUTTON

| DRAWN COURTESY OF THE ROBOT

-roBOT OPERATOR

Unlocks and Opens Garage Door and Turns On the Lights

Touch another magic button in garage or home — your ROBOT Operator electronically opens and locks garage door, and turns off the lights.

When leaving, the procedure reverses

Exclusive ROBOT Features
SAFE FRICTION DRIVE—Maximum protection to prevent sudden stops.
FULLY AUTOMATIC—Merely touch button in car, house or garage to operate.
POSITIVE REMOTE CONTROL—Weatherproof, foolproof.
DOES NOT VIOLATE Federal Communications Laws.
UNDERWRITERS APPROVED—Meets all specifications and electrical codes.
QUIET & DEPENDABLE—Many thousands in use, trouble-free for over 50 years.
LOWEST COST of all automatic operators to buy, install and operate.
OPERATES ALL DOORS—Single or double, overhead, rolling, sectional, sliding, folding.
WRITTEN GUARANTEE covering ROBOT Operator and installation for one year.

FREE CATALOG—Write Dept. AB
NATION-WIDE SALES, INSTALLATION & SERVICE
Write for Complete Information and Free illustrated catalog.

ROBOT APPLIANCES, INC.
3165 T AVE. + DEARBORN, MICH

Easy to Install... Lasting Satisfaction

ALLITH 50-50 PUSH-OVER GARAGE DOOR HARDWARE

Combine the expertly-designed Allith garage door hardware with your own or any standard door. Result is a rugged, easily-operated overhead door that gives full and lasting customer satisfaction.

Quickly installed, standard set fits any opening up to 9' wide x 7'6" high when doors do not exceed 276 lbs. Other sets available for openings up to 10' wide x 10' high.

ALLITH - PROUTY, INC
DANVILLE, ILLINOIS
In American Builder for Forty-Five Years

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ALLITH - PROUTY, INC
DANVILLE, ILLINOIS
In American Builder for Forty-Five Years

Here's a brand new line of doors that has everything! Made by a manufacturer with over half a century of designing and engineering experience, the new Calder doors are available in every conceivable size and style for every conceivable need. Special designs and sizes to order and for extra appeal to the customer and extra profit for you—all Calder doors can be equipped with radio controlled electric operators. Send for complete information and our new, free, illustrated catalog.

calder MANUFACTURING CO.
LANCASTER 12, PENNA.
RAYNOR DOORS present an All Star line-up of Wood Sectional Overhead Doors

Regardless of the size opening—you can depend on the Raynor Mfg. Co. to supply you with a wood sectional overhead door of the finest quality and design.

Raynor sections embody three-way stress construction (mortised and tenoned, steel dowelled and glued), and all Raynor hardware is "protecto dipped" or cadmium plated for complete weather protection.

When you combine these important features with Raynor co-ordinated construction (hardware and wood sections are built complete in the Raynor plant) it is understandable how consistently Raynor fulfills its pledge of top door quality.

Whether it is a residential, commercial or industrial door you can assure the Raynor door owner of precision finger tip control at all times, thanks to Raynor Graduated Seal, made possible by the patented Raynor universal graduated hinge.

For door installations that demand something really different, Raynor Carved Raised Panels and Flush Doors are unequalled in originality.
Garage Doors and Electric Operators by Wagner

"Rollozy"—Model 326 Overhead Door (illustrated above) is now made in 32 standard sizes from 8' x 6' 6" to 16' x 7'. Here's a top quality, easy operating, low priced door that will win trade and hold it for you.

"Guideover"—Made in a wide range of overhead models and sizes from 8' x 7' to 24' x 24', which enables you to meet all residential and commercial requirements.

"Automatic Doorman"—The magic push button electric operator for opening and closing ANY make or type of sectional overhead garage doors and most makes and types of one-piece doors.

Ask for Garage Door Bulletin AB-53

Wagner Manufacturing Company
Cedar Falls, Iowa, U.S.A.

Installation details of industrial type upward acting garage door with pass door for individual entering or leaving without vehicle. Spring-powered chain hoist mechanism may also be power-driven and activated by automatic operator.
The functional 20th-century styling...sturdy, weather-tight construction..."feather-touch" door action...at popular down-to-earth prices...contribute to make the How-ell-dor sectional Upsweep garage door a mighty attractive sales package.

To satisfy every residential, commercial, and service station requirement...to assure fast, dependable service...there are now 40 How-ell-dor stock sizes and styles. Unusual sizes and designs are a specialty.

Of particular interest to all builders and supply dealers are these features of the How-ell-dor Trade Story

- **Ease of Installation**

  Because it is a prefabricated product...drilled and ready to bolt together...the How-ell-dor reduces guesswork and time-on-the-job to a minimum. An Instruction Sheet, accompanying each door, illustrates the progressive steps involved in the installation process.

- **Low Headroom Hardware**

  The Howell Manufacturing Co. has pioneered in the development of the Natural Seven Track that can be installed in 7" of headroom. This innovation eliminates the need for special brackets or auxiliary track...makes possible a considerable saving in material and labor. Hardware for 9½", 6" and 3" low headroom requirements are also available.

- **Engineering Assistance**

  Our designing and engineering staff always stand ready to assist you in your particular door problems.

**The HOWELL Manufacturing Co.**
7200 Hasbrook Avenue  Philadelphia 11, Pa.
head room for the type of door to be installed. There are doors available to take care of all kinds of head room situations, with a number on the market which require no head room, some only two or three inches, on up the scale to others which require 15 to 16 inches. Stock sizes range from the smallest listed, which is 8 feet wide by 6 feet 6 inches high, on up to the large full double garage width of 14, 15 and 16 feet. There are sectional roll-up doors available with removable center posts. Thus two or more doors can be installed to close a large opening and if found desirable, the center posts between the doors can be raised up and taken out of the way to provide a clear opening of any width structurally sound.

Manufacturers are bringing remote control by electricity or sound activation to garage doors at prices that often make it practical to install these units.

Their desirability and convenience to the home owner stem from the fact that the garage door can be opened or closed by merely pushing a button on the instrument panel or floor of the car. With garages fronting on the streets and being used more extensively as utility and storage structures, the need for keeping the door closed at all times is obvious. It not only obviates the danger of theft but also closes off from public view whatever weaknesses the home owner may have as a neat housekeeper where the garage is concerned. Because houses are designed to look their best with

JAMB DETAILS — FRAME CONSTRUCTION

For good installation, lumber used in side jambs should be of good quality, straight, securely fastened to the structure, and not less than 1 1/2" thick. Interior track support beam must be supported in center as well as at ends. With this, as with other garage doors, manufacturers furnish detailed and specific instructions for installation which should be followed to the letter to insure satisfactory door operation. Proper door framing and jamb construction are essential to good operation of modern upward-acting garage doors. Manufacturer's specifications for finished opening size will vary with frame or brick construction, with wood or steel door frame, and with wood or metal doors. Consult manufacturer specifications and individual requirements before either ordering door or completing door opening prior to installation.

JAMB DETAILS — BRICK CONSTRUCTION

This 8' x 7' 2-panel door is designed for a standard door opening of the same dimensions. Spring-powered lifting mechanism operated with minimum headroom of 9 1/2". Similar door for 9' opening has three panels, other features essentially the same.
IF THERE is a retaining wall parallel with the driveway, it is desirable to install a low curb at the base to guide automobile wheels so fenders will not scrape the wall.

the garage doors closed, it is desirable that they be closed most of the time, whether the garage is attached or detached.

There are several different models of automatic door operators, but basically they consist of a simple sending unit mounted in the owner's car with an individual wave length set to activate the door operator mounted in his garage. His car unit will not open any other doors and no other owner of an automatic set of his type can open his door. These units make contact with a coil imbedded in the driveway or directly with the operating mechanism. There are units that activate the door operators with inaudible sound vibrations and function in the standard manner. Electrical switches inside the garage can be used to open or close the door and, should electric power fail, the door can be opened manually.

**Hardware**

Proper installation is essential to good hardware and fittings. Follow strictly the manufacturer's specifications and directions on garage door and hardware installation, particu-

Rainbow type driveway suggested above is 2' wider in front of house to permit guests access to car without getting onto lawn or flowers. Driveway is designed to be in keeping with over-all comfort and luxury built into this home. Two cars may park side-by-side in area in front of garage interior details, double door . . .
Base of parking lot should consist of 8" foundation of compacted crushed stone rolled by roller weighing 150 lbs. per roller-inch, topped by two courses of asphalt totalling at least 2 1/2" in thickness. Power-roll topping while hot. Area should have complete drainage of surface water into drains installed for the purpose, with catch basins installed so as to provide proper slope and surface pitch.

**types of automatic operators**

**AUTOMATIC DOOR OPERATOR CONTROLS**

**INTERIOR**

- **1-button**: momentary contact opens or closes door.
- **2-button**: safety switch; momentary contact opens door. Constant pressure necessary to close door; release of button before door is closed will reverse action.
- **3-button**: Up, Down, Stop, requires momentary contact.
- **Pull-Cord**: Chain or metal cable. Constant pressure needed.

**EXTERIOR**

- **Radio Remote Control**: High frequency radio signal sent out by transmitter in vehicle activates switch which controls door operator. Will also turn on lights. Signal has 75-85' radius.
- **Switch**: 1, 2, 3, or 4 station switches mounted on post in driveway or wall of building.

The renovation of old garages with new doors or with new hardware is an important aspect of remodeling work. Some companies offer remodeling work which will convert swinging or accordion doors to the upward-acting type.

Modern sliding fire door shown above is mounted on sloping rail, hung with counter-weight attached to fusible links which melt at specified dangerous temperature, permitting door to close automatically. All steel door, once closed, is held firmly in place against possible explosion or drafts by binder bolted through wall.
driveway planning

The most successful builders know that their public appreciates real value so they build value into their homes. Kay Manor, Inc. is a good example. They tell us "we have never used a product that gave us as much satisfaction as your Morrison Roly-Door. Every purchaser of our homes in our Sylvia Park development has marveled at the finger-tip operation and modern beauty of this Steel Sectional garage door."

The lasting beauty of the Morrison Roly-Doors harmonizes with the modern trend to make the garage a part of the architectural design. It makes garages a very practical selling feature of the home. Roly-Doors can give added value to the homes you build and make your selling easier. Take advantage of their practical Selling Power. Their installed cost is low — their value high.

For complete information see your Roly-Door Distributor or -

ONLY ROLY-DOORS GIVE YOU ALL OF THESE ADVANTAGES

- Four Sectional, Overhead Steel Garage Doors.
- Will not rot, warp or absorb moisture.
- Quiet, free rolling, ball-bearing operation.
- Rugged, welded steel construction.
- Low installation cost.
- Conforms to any style of architecture.
- Infra-red baked prime coat.
- Can be painted with regular house paint in your choice of color.
- Pin tumbler locks. Cylinder is keyable to fit home doors.
- Meets all Building Codes.
- Three sizes — 8, 9 and 16 foot.

Well known Long Island Builder says:
"There is no doubt in the minds of our sales force that Roly-Door has been beneficial in the sale of many of our homes."

Norman Kaye,
Kay Manor, Inc.

IMPERATiveness of the location of the garage on the home site should never be underestimated. Easy and preferably protected access to the basement or service portions of the house adds immeasurably to the full use of the garage as a utility building. The driveway should always be planned at the same time the garage is planned. Tricky turns, bad grades and obstructed views of danger spots are some of the results of poor driveway planning.

Driveways

Poor driveway planning results in tricky turns, bad grades, obstructed views, accidents, and grief for the home owner. A one-car driveway should be at least eight feet wide on the straight and 11 feet wide on curves. The minimum width for 2-car drives is 15 feet, and wider is better. If the driveway slopes, there should be a level area the length of the car in front of the garage to prevent rolling if brakes are not set.

With modern automobiles, the smallest outside radius for a curve is 29 feet.
A steel K-D garage door is shipped like this:

- **5" x 28" x 96"**
- **ASSEMBLED EASILY WITH NUTS & BOLTS**
- **INSTALLED WITH TRACK-TYPE HARDWARE**
- **FOR 8 X 7 and 9 X 7 OPENING**

It looks like this:

NATIONAL BUILDERS SHOW
BOOTH 655

Send for Prices

K-D GARAGE DOOR SALES
1930 FITZPATRICK
DETROIT 28, MICHIGAN

K-D GARAGE DOOR SALES
Please send me complete information and prices.

NAME ________________________________
ADDRESS ________________________________
CITY ___________________ STATE ________________

A one-car driveway should be at least eight feet wide on straight stretches and 11 feet wide on the curves. Regardless of grade there should always be a level area at least 15 feet long in front of the garage to facilitate parking without the danger of the car moving because brakes are not set or because of tampering.
Sliding closet and wardrobe doors offer builders many opportunities to economize in construction and make homes more salable. Unit shown has nylon rollers, cadmium plated steel hangers and track. To install, cut track to fit opening and screw to header.

**PLAN 1**

RANCH TYPE HOUSE

Screw anchors may be used in any type of hollow wall, floor, or ceiling. The anchor expands in back of wall as shown in Fig. 3, above, and remains as a permanent fitting to which brackets, cabinets, or other fixtures may be attached securely. A variation is a plug with gasket to stop leaks in boilers and large pipe.

APRIL 1953

HARDWARE AS A SALES AID

Locks

Door Fittings
  - Door Knobs, Handles, Pulls
  - Weatherstripping

Window Fittings
  - Sash Pulleys and Balances
  - Window Handles and Lifts, Sash Hardware
  - Casement Hardware
  - Weatherstripping

Cabinet, Cupboard and Kitchen Cabinet Hardware

Sliding and Special Door Fittings

Bathroom, Closet and Wardrobe Fittings

Garage Door Hardware and Fittings

Specialties and Special Order Trim

Builders' Hardware

Time Savers

FOR MORE INFORMATION ON PRODUCTS ADVERTISED AND DESCRIBED IN THIS CHAPTER PLEASE USE ONE OF THE PREPARED INQUIRY POSTCARDS IN THIS ISSUE.
kwikset locksets

precision manufactured

KWIKSET INSTALLATION AIDS

job-engineered • field tested
fast, trouble-free installations • elimination of "expensive call-backs"

ONE HOLE JIG
For use with hand brace with single blade bit or power tools with multi-spur bit.

THREE HOLE JIG
For use with power drills or hand brace.

2" MULTI-SPUR BIT
For power tools.
Used with one hole jig.

7/8 INCH BIT
For 3/4 inch power drill
Used with three hole jig.

2" BORING BIT
For hand tools.
Used with one hole jig.

7/16 INCH BIT
For 3/4 inch power drill
Used with three hole jig.

*ADJUSTABLE STRIKE
Patent Pending
Finger tip adjustable feature with positive locking action. Allows for easy adjustment.
* (when available)

MORTISER
For mortising of latch face.

STRIKE LOCATOR
Marks jamb for proper strike location.

CYLINDER REMOVING TOOL
For cylinder reversing of right and left-handed doors.

for complete
for every door in the house
unconditionally guaranteed

KWIKSET "400" LINE
time-tested • consumer approved • over 16 million in guaranteed service
five pin-tumbler security • simplicity of design
lasting jewelers' finish

KWIKSET EXIT LOCKSET
Kwikset Exit Lockset
Five pin-tumbler entry locking set
for all exterior doors.
Inside knob doesn't turn when locked.
(No. 400FL — barrel knob comes closer
to frame when locked or unlocked.)
Both knobs operating with deadlatch.

KWIKSET PASSAGE SET
Kwikset Passage Set
for use on all interior doors where a simple latch is all that is required.

KWIKSET PRIVACY LOCKSET
Kwikset Privacy Lockset
for bedroom and bathroom doors.
Outer knob features an emergency entry keyway.

TRIM HANDLE
made from pressure cast brass.
ROSETTE made from wrought brass.
DUMMY KNOB for use on doors where only a pull is required.

KWIKSET VESTIBULE LOCKSET
Kwikset Vestibule Lockset
Inside knob always unlocked, outside knob always locked.

illustrated catalog write:
KWIKSET SALES AND SERVICE COMPANY
ANAHEIM, CALIFORNIA
ALUMINUM NAILS

- Rust-proof
- Streak-proof
- Eliminate premature painting
- FHA approved
- Etched for greater holding power
- Eliminate countersinking and puttying

For every need!

ALUMINUM NAILS

- Wood siding nail (sliver head)
- Cedar shake nail
- Asbestos siding nail
- "Fillet Grip" Asbestos siding nail
- Asbestos shingle nail
- Insulated siding nail
- Gypsum lath nail
- Standard shingle nail
- Standard roofing nail

A nail for every need!

NICHOLS WIRE & ALUMINUM CO.
Davenport, Iowa

World's Largest Manufacturer of Aluminum Nails

Ready-built frames to handle finished doors from 2 to 3 feet in width are reinforced with 16-gauge steel angle iron shown in detail to provide added strength. Dimensions shown are for standard 4" stud plaster walls with outside measurement 5 1/2" out to out. Frames for drywall have 4 1/4" jamb width, and for bullnose 4 1/8" jamb.

PLAN 2

RANCH TYPE HOUSE

... sliding door frame

... casement window operator

Internal gear operator, drilled for wood casements. Installation shown is with use of a screen seat. Operator may be installed with screen rail notched out to fit over operator housing. It functions through the screen, or may be used on non-screened windows.
... jig speeds cylinder lock installation

Mark door, set jig and drill
Drill two 7/16” holes
Mortise for latch face

two 7/8” holes for latch
and spindle

Three-hole jig shown cuts installation of these cylinder locks to less than five minutes
per lock. Designed for use with power drills, precision engineered jig clamps onto

door with quick turn of wrist, assures proper right-angle holes for good lock fit. Ac-
cessory tools include mortiser, strike marker, special drills

Remove excess wood for latch face
Mark jamb with strike
Insert latch

Courtesy Kwikset Sales & Service Company

Hardware is an important sales
aid. Automatic window operators,
weather stripping, hardware which
makes windows easy to open, easy
to clean and efficient in ventilation, are
all talking points. Doors hung on
good hinges so that they will operate
at a touch of the finger, quietly and
easily, appeal to the housewife with
small children. Push plates and
escutcheon plates which make it
easier to keep walls and woodwork
clean also appeal, as do bathroom
door locks which can be opened from
the outside so that Junior can’t lock
himself in.

A house built to shout “quality” as
you walk up to the front door gives
the prospect a definite let-down when
he takes hold of a cheap-appearing
door knob, notices an indifferent lock,
have trouble opening the door because
it doesn’t hang well on the hinges,
and finds cheap trim used where good
trim belongs. The effect of the finest
layout of kitchen cabinets is spoiled
when Mrs. Prospect pulls open a cab-
inet drawer and scratches her hand
on a poorly-finished handle.

The use of high-quality fittings and
hardware, well-designed shelf brackets,
casters, latches, snaps, chains and
guards for doors, door stops, door closers, bathroom fittings, clothes
hooks and other wardrobe fittings, as
well as appropriate decorative trim
and venetian blind or drapery fittings
—all add in a thousand ways to the
prospect’s appreciation of the value
of the property.

While impressed with modern de-
sign and efficient layout for comfort-
able living, prospects generally think
in terms of the house built to last a
hundred years. It is, of course, easier
to point out structural features to a
buyer who visits the house when it is

(Continued on page 240)
SCHLAGE locks are easy to order
The SCHLAGE Selector Chart takes the guesswork out of ordering. If you don’t have the chart, ask for it!

SCHLAGE locks are easy to stock
Shelf stock is quickly identified by a simplified numbering system and colored labels which denote type of lock.

SCHLAGE locks are easy to sell
SCHLAGE provides point-of-sale posters, window displays, advertising mats and illustrated circulars for your sales promotion programs. National advertising in architect and builder magazines paves the way for easy sales.
Here's Why

LEADING ARCHITECTS
AND BUILDERS
USE AND RECOMMEND

Sterling®
600 SERIES
SLIDING DOOR
HARDWARE

Saves Time! Saves Money! Easy to Install and Adjust!

1. USE STANDARD DOOR FRAME. No special header construction needed. No grooving!

2. APRON CONCEALS HANGERS AND TRACK. May be painted if desired. No extra trim necessary.

3. ONLY ONE INCH HEADROOM REQUIRED. No need for extra headroom for hardware.

4. ADJUSTABLE HANGERS. Slotted screw holes make it easy to plumb door with jamb.

5. GUIDE STRIPS eliminate troublesome grooving of doors. Not visible from the outside.

6. DOOR GUIDES can be installed after doors are hung. Slotted screw holes permit easy adjustment.

7. NO TRACK ON THE FLOOR to catch dust and dirt ... floor is clear and clean at all times.

8. DOOR STOP keeps flush pull on rear door always accessible. Fingers can't get pinched.

Write for Catalog on Sterling line of Sliding Door Hardware for wardrobes, pocket doors, side doors in home garages and other Sterling products.

STERLING CASEMENT WINDOW HARDWARE

- No. 165 PULL-TITE CLOSER
- No. 190 EXTENSION HINGES
- No. 61 CASEMENT WINDOW OPERATOR

★ See our Catalog in SWEET’S Architectural File and Builders File
★ See our display at THE ARCHITECTS SAMPLES CORPORATION New York, New York
COST LESS—INSTALL FASTER

By-passing doors are the ideal doors for closets, cupboards, wardrobes. They increase room space, cost less to install and give an added touch of modern beauty to any room.

Leigh Sliding Door Hardware is the ideal unit for hanging sliding doors. Leigh saves you time and money on every installation. It's completely packaged for your convenience and on-the-job protection, eliminating the need for time-wasting delay while additional parts are obtained.

With Leigh, all adjustments and alignments can be made by unhooking doors from the track. Doors lift easily from the front. Guide Strip at door bottom eliminates troublesome grooving.

A facia strip is available for trim at top of opening to eliminate the top trim board and reduce installation time.

Compare, and you'll standardize on Leigh Sliding Door Hardware for low cost, trouble-free operation.

Complete parts for one installation in this heavy tube

Everything you need for a single installation comes complete in this heavy shipping tube. Parts are zinc-plated heavy gauge steel, track is zinc coated and bonderized. Door pulls are solid brass. Sizes for 2, 3 and 4 by-passing door installations for 3/4" or 1 1/8" doors.

Look at LOK-TAB*

LOK-TAB*, an exclusive feature found only on Leigh hardware, is the final installation operation, absolutely insures doors cannot jump the track. Only a screwdriver is needed to set LOK-TAB* in place. LOK-TAB* means greater customer satisfaction, an end to troublesome call-backs.

"You get a whale of a lot for your money when you buy Leigh Building Products"
Leigh's exclusive LOK-TAB* is only one of the outstanding time and money-saving features of this new by-passing door hardware. Leigh Sliding Door Hardware is engineered and built for the finest homes, yet priced so low you'll want it for your low-cost housing projects.

LEIGH OFFERS YOU:
Easier installations, long, trouble-free operation.

"STURDICO" WHEELS
Quiet, easy-rolling wheels designed for years of satisfactory service.

COMPLETE PACKAGE
Everything you need for a complete installation in a heavy tube.

GUIDE STRIP
Eliminates grooving doors, saves valuable time, insures smoother operation.

WRITE TODAY for Bulletin 87-L giving full, illustrated information on this outstanding new line of sliding door hardware. For full details on the complete line of Leigh Building Products, ask for Catalog 52-L.

*Patent Pending

The "STURDICO" Wheel used by Leigh is unaffected by oils, grease or moisture, never develops flat spots as do other plastic wheels. Wheel rides on edges of track, free of dust or dirt. Built-in lubrication insures years of quiet, smooth operation of even heaviest doors.
... steps in installing by-passing and by-parting sliding doors

(1) To install sliding door, first cut continuous saw slit in center of bottom of door, \( \frac{3}{8} \) deep, \( \frac{1}{4} \) wide.

(2) Mount track to header with 28 round head wood screws; front face of track flush with opening.

(3) Locate holes on upper left and right sides of rear of door using template. Mount carriers with one screw only at this point.

(4) With carriers attached, hold door at 45° angle and lift to rest rollers on bottom rail of track. Rear door mounts first in double-door installations. Clearance between door bottom and floor or saddle should be \( \frac{1}{4} \)".

(5) Adjust door for clearance by loosening screw in adjusting slot of hanger. Retighten and add one more screw, leaving third screw hole for future adjustments and anchoring.

(6) Slide door to one side of opening and place floor guide in center of opening so that half of guide is in door groove. Fasten exposed portion, then slide door to other side and fasten remainder.

Specialties Help Sell, Too

The house with attached garage is now so common that much attention is paid by buyers to the problem of opening and closing garage doors. There are a number of manufacturers who have special hardware for this purpose, the easy functioning of which is a sales point for the builder.

When you use hardware as evidence of value, talk function. Explain that the locks and latches on the various doors were selected for certain special features of operation. Point out that finish hardware was selected to match the decorative scheme of the house, that it is easy to maintain and of a type easily replaced when necessary. Demonstrate throughout that the hardware used is not just "window-dressing" but represents function combined with beauty to increase the livability of the house.
... weather stripping for doors

Exposed hook style of felt and metal weatherstripping for door bottom combines with threshold strip to make weather-tight seal. Concealed hook as shown at right, above, may be used with same threshold strip

Plain door bottom strip of felt and metal keeps out under-door drafts. Center, above, metal hook strip without felt makes weather-seal with threshold. Right, above, felt door-bottom strip is combined with drip-cap to provide weather-proof and waterproof seal

... finish hardware

Right Hand
Left Hand
A door that opens inward and is hinged at right, is a right hand door. A door opening inward, hinged at left, is a left hand door

Right Hand
Reverse Bevel
Left Hand
Reverse Bevel
A door opening outward, hinged at right, is a right hand reverse bevel door. A door opening outward, hinged at left, is a left hand reverse bevel door. Hand of pin tumbler locks and many other door fittings should be specified for correct fit

Eliminate Slow, Wasteful Drilling for anchorage to brick, tile concrete, steel AND CUT LABOR COSTS ON EVERY JOB

Installing furring strips, metal cabinets and insulation hangers on concrete or masonry walls need not be an expensive problem for you. Today you can eliminate the slow, wasteful job of drilling for anchorage... with Gemco products, and cut labor costs substantially on residential, commercial and industrial buildings. Here are the items which will assure the fast, simple installation so important to you:

GEMCO ANCHOR NAILS...for installing furring strips, plaster grounds, carpet strips, etc. Fastened to surface with Tuff-Bond adhesive, they have ample strength to hold reasonable sidewall loads in place securely. Easy to install; anchoring is safe, sure, permanent.

GEMCO ANCHOR BOLTS...for quick, easy installation of metal cabinets, outlet boxes, dispensers, mailboxes, etc., on concrete, brick, steel, hollow tile, gypsum tile. No drilling or welding.

GEMCO Insulation Hangers...ideal for installing batt-type insulation on concrete, brick, or metal. Many man-hours saved over welding of wires or installing mechanical fasteners.

Other Goodloe E. Moore, Incorporated, products: TUFF-BOND outstanding adhesives...super-strength...waterproof...stick almost anything to anything! TUFF-TRED Safety Stair Nosing...for protecting any type stair steps from wear, improving the safety factor, maintaining and restoring stairway beauty.

A few choice distributorships and dealerships are available. Write, phone or wire...

GOODLOE E. MOORE INCORPORATED
DANVILLE, ILLINOIS
In Canada: W. D. ELMSLIE, Ltd.
409 Notre Dame St., West, Montreal 11, Quebec

APRIL 1953
Both Grant No. 16 (for single sliding or bi-parting doors) and Grant No. 17 (for by-passing doors) include these fine features: silent self-lubricating Nylon rollers, complete adjustability, fast installation. Both styles packaged for 4', 5', 6' and 8' openings. Track and parts also available in bulk, of course.

Now available... the quality line of Sliding Door Hardware... packaged to size and ready to use!

The hardware was designed to make the customer happy.
The packaging is for you.
We mean Grant's famous Sliding Door Hardware twins, the Sixteen and Seventeen. You know how good they are. They're built to work, smoothly, silently. To last a lifetime. To make satisfied customers.
Now pre-packing makes this fine line easier to handle and faster to install. Each kit includes all the parts needed for each opening, sealed and clean until ready for use. The clear instructions included make installation a matter of minutes. And there's a kit for every need.
See your supplier. Give it a try. We've made it easier for you to use the best.

Grant Pulley & Hardware Company
31-63 Whitestone Parkway, Flushing, N Y.
5-Step Plan For Specifying Hardware

STEP ONE: Consists of writing a set of general conditions. This is a statement fixing responsibility with the successful bidder for adequate quantities, sizes, types, and quality, also templates and proper labeling of packages. It places responsibility for the receipt and installation with the contractor or others, as directed.

STEP TWO: Covers the specifications of the physical design of knobs, escutcheons, handles, and other parts, desired for all or various specific parts of the building, and the design specification also indicates the type and grade of lock set or other hardware (i.e., whether knob and key, mortise type, cast or wrought knobs).

STEP THREE: Specifies finish by the use of U.S. Bureau of Standards symbols which include all popular and standard finishes for builders' hardware.

STEP FOUR: Door hardware is specified for each type of door by use of manufacturer's stock numbers, which indicate specific lock sets and butts or hinges or other supplemental items.

STEP FIVE: Specifies window hardware and miscellaneous items. Add here also general specifications concerning master keying etc.

... how to install invisible hinges

To install invisible hinges, first measure from top of door to top of hinge location. Mark with nail or center punch and then drill holes of required depth as indicated by template. Recess sides smooth as shown in Fig. 4. One half of hinge is then forced into mortise. This should be a drive-fit. Screw holes are located from holes in hinge, drilled, and screws applied. With all hinges attached to door, door with hinges attached is used to locate mortises on frame, where process is repeated with template, mortising, and hinges driven into place. Screw holes are prepared and screws inserted firmly with door held in open position.

Locks

Exterior doors require security locks, generally fitted with pin tumbler lock mechanisms. Front entrances may have handle and thumb levers for better appearance. Available for doors of contemporary design is a lockset having a longer backset, placing the knob five to seven inches away from the door edge.

Locks for interior doors are made for both key and push-button operation for privacy in bedrooms and bathrooms. Access may be obtained in emergencies by screwdriver or pin releases. Special knob and lock assemblies are available for closet and locker doors, storerooms, roof decks, French doors, and other one- or two-side locking requirements.

Door Fittings

Door hinges for interior and exterior use—butt hinges—should be selected to match the thickness of the door. The clearance of the door away from the trim must also be considered, as must the "hand" of the door (right or left hand opening) so that correct hinges for the particular doors are available on the job at the right time and place.

Ball-bearing extension drawer slide offers the answer to many a housewife’s backache for installations in kitchen base cabinets, closets, wardrobes, and other built-ins. Drawers slide easily, will not fall out when fully extended, lift out for cleaning, and provide easy answer to storage-accessibility problem.
SLOTTED
or
PHILLIPS HEADS

SOUTHERN WOOD SCREWS

Always Meet Federal Specification FF-S-111a

Whenever it is required that wood screws meet Federal Specification FF-S-111a, builders have a habit of simply using Southern Wood Screws.

For Southern Wood Screws are designed especially to meet this exacting federal specification and provide the most in holding power. Uniformly made of the highest quality materials in one of the most modern plants of its kind, Southern screws are of Government-approved single thread construction, accurately machined, with precision-milled slots, full size shanks and sharp gimlet points. You can depend on them for maximum holding power.

Wide range of sizes from 1/4" No. 0 to 6" No. 30—in steel and brass.

Write today for interesting literature on types of wood screws—and for the Southern Wood Screw catalog.

FACTORY WAREHOUSES

SOUTHERN SCREW COMPANY
118 Rickert St.
Statesville, N.C.

4190 Dell Avenue
North Bergen, N.J.

611 Stewart Ave., S.W.
Atlanta, Georgia

525 W. Ohio Street
Chicago 10, Ill.

An extra touch that means so much in selling your new homes

...the Sargent Screen and Storm Door Closer

The little details that prospective home-buyers unexpectedly find in a home are great sales-stimulants.

These quiet, powerful, low-cost closers are so quick and easy to install that your labor costs are nothing to worry about. Use the new Sargent Screen Door Closers on screen doors, storm doors, light interior doors, combination and jalousie doors and see how they help sell.

They can be opened to 120° and have a much appreciated hold-open device that lets a housewife pass in and out conveniently with packages, rubbish, etc.

And think of these other features. No changing parts for either right or left hand application. Large tube 11/4" diameter for over 20% greater checking capacity than usual 11/4" tube. Packed with both jamb and soffit brackets.

See the Sargent Screen and Storm Door Closer at your supplier today. Or, for complete details, write us, Dept. 5D.

Sargent and Company
New York • NEW HAVEN, CONN. • Chicago
Builders Hardware and Fine Tools since 1864

proper location of butt hinges

Suggested rules for locating butt hinges on a door: 5" distance from jamb rabbet to top edge of butt hinge. 10" distance from finished floor line to bottom edge of butt hinge. Center butt hinge evenly spaced between other two. 1/4" distance from face edge of door to edge of butt hinge mortise for doors up to 2 1/4", and 5/8" for doors 2 1/2" to 3" in thickness. 5/16" distance from stop to edge of butt hinge mortise frame, thus providing 1/16" clearance between door and stop.
Every top quality builders' hardware installation is a point in your favor. It reflects the extra care you take in selecting products that are constantly used and sometimes abused.

Russwin Builders' Hardware is expertly designed to stay good looking . . . to operate smoothly . . . to provide positive security, if it's a lockset . . . and to last a long time. The extra value of Russwin Quality Builders' Hardware is easily explained . . . fully appreciated.

All Russwin products are labeled distinctly to save your time. They're easy to handle and install . . . attractively finished and sturdily built. Name your builders' hardware need for any type of building and you'll find it in the Russwin Quality Line . . . uniform in size, finish, quality, packaging and price. Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.
COMPARE the TOP-QUALITY FEATURES and LOW COST of the New HAR-VEY ROLLING DOOR HARDWARE

3 models of the New CHALLENGER Series meet all your needs for doors to 70 lbs.

Faster Installation

- The top-mounted Challenger track can be speedily installed, requires no mortising.

Smother Rolling

- V-groove track eliminates chattering
- Ollite bearings are self-lubricating
- RUSTPROOF Aluminum Track
- Durable Nylon Rollers

Less Headroom

- Reduced headroom is only 1"-1½"
- ALUMINUM track serves as trim—no painting necessary

More Convenience

Challenger sets (hardware and track) come completely packaged

Typical low delivered price only $2.70 list—
for completely packaged set for 2' pocket door, including track, hangers, flush door pull, screws.

Also Available—
CHAMPION SERIES—for doors up to 100 lbs.
HAR-VEY HEAVYWEIGHT—for doors up to 200 lbs.—get all the facts on grief-saving Har-Vey Hardware. Write Dept. AB-4.

Metal Products Corporation
807 N.W. 20th St., Miami, Fla.
Western Div. (Calmetco, Inc.) 609 S. Anderson, Los Angeles
Mid-West Div. (Plymouth Metal Products) 505 W. Harrison, Plymouth, Indiana

Head strip shown in detail above may be fastened to sash or jamb

Meeting rail strip may be used on plain check rail as well as on rabbeted check rail shown

Metal Products Corporation
807 N.W. 20th St., Miami, Fla.
Western Div. (Calmetco, Inc.) 609 S. Anderson, Los Angeles
Mid-West Div. (Plymouth Metal Products) 505 W. Harrison, Plymouth, Indiana
ACME BI-RAIL SERIES 3000—for by-passing doors
Rubber Wheel—smooth, quiet operation—requires no lubrication.
Adjustable side mount hangers.
Strong steel double track No. 38 (single track No. 36 also available), stocked in 4, 5, 6, 7, 8, 10 foot lengths.
Only one track for all standard door thicknesses.
Doors cannot jump track.

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ACME BI-RAIL SERIES 5000—for by-passing doors
Solid Nylon Wheel—large 1/2" diameter wheel provides smooth quiet operation.
Adjustable side mount hangers.
Simple installation. Door lifts in and out without removing hangers.
Strong steel double track, No. 5001—stocked in 4, 5, 6, 7, 8, 10 foot lengths.
Only one track for all standard door thicknesses.

<table>
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TOP HUNG HARDWARE for Passageway Doors
Nylon Wheel—large 1/2" diameter wheel provides smooth, quiet operation.
Top mount hangers No. 53—vertical adjustment with shims supplied.
Simple installation. Door lifts in and out without removing hangers.
Strong steel track No. 54—engineered to prevent jumping track in pocket.

ACME TYPE "Z"—for Passageway Doors
Rubber Wheel—smooth, quiet operation—requires no lubrication.
Adjustable top mount hangers, No. 41.
Quick adjustment by means of threaded eyebolt. Set screw locks hanger to plate. Cannot get out of adjustment.
Door cannot jump track.
To rough in for frames, allow 7' 1" in height by 2" plus twice width of door.
Strong Frame—heavy, steel angle stiffeners Nos. 61 and 62.

ACME SHEAVES
For Sliding Sash
No. 702
No. 700 Track
Sash can be removed for cleaning.
Weep holes in track permit drainage.
Aluminum Track No. 700—stocked in 4, 5, 6, 7, 8, 12 foot lengths.
No screws to install.

For Showcase
No. 750
Can be used with No. 700 or any standard T Track

ACME No. 103 FLOOR GUIDE
Dimpled to reduce contact with door to a minimum.
Slotted to allow removal by merely loosening the screws.
May be installed after doors are hung.
Included with all series 3000 and 5000 hardware.

ACME No. 105 GUIDE STRIP
Eliminates grooving of doors.
May be installed without special tools.
Available in 24, 30, 36, 48 inch lengths.
new **KENNATRACK** goes up fast!

Millwork has been eliminated... Installation is easier... Performance is finer than ever, and prices are lower! That's why Kennatrack's newly designed track is the builder's best bet—by far. Select from the complete packaged line, now available from your Kennatrack dealer.

**SERIES 250-A** For ¾” kitchen cabinet doors. Exclusive step-up design hides hardware.

**SERIES 300-A** For ¾” through 1¼” open, and closed pocket doors. Minimum headroom required.

**SERIES 400-A** For 1¼”-1½” closed pocket doors. Deluxe track with heavy duty, ball bearing axles.

**SERIES 700** Deluxe double track for ¾” through 1¼” wardrobe by-passing doors... adjustable hangers.

**SERIES 350** For 1¼” closed pocket doors—adjustable hangers. Popular with frame manufacturers.

**SERIES 500** Double track for 1¼” and 1½” wardrobe by-passing doors. Minimum headroom required.

**SERIES 600** Double track for 1½” and 1¾” wardrobe by-passing doors... adjustable hangers.

**SERIES 650** Deluxe double track for 1½” and 1¾” wardrobe by-passing doors. Extra strong hanger installation.

**SERIES 700** Deluxe double track for 1½” and 1¾” wardrobe by-passing doors. Extra strong hanger installation.

**SERIES 750** Deluxe double track for 3/4” through 1¼” wardrobe by-passing doors. Extra strong hanger installation.

**SERIES 800** Pre-fabricated warp-proof, all-metal frame for closed pocket installations. Series 400-A track already installed.

**SERIES 900** Pre-fabricated, low-cost Scottie wood and metal frame. Series 350 track already installed.

**KENNAFRAME**

**FREE BUYER'S GUIDE** takes the guesswork out of sliding door installation!

See your supplier, or write Kennatrack Corporation, Elkhart, Indiana
Sales Clincher for the EASY-TO-SELL HOME

TEMCO automatic gas floor furnace

With TEMCO Gas Floor Furnaces you can keep construction costs at a minimum while adding a nationally recognized automatic heating system to your low-cost, Easy-to-Sell Homes.

HERE'S WHY!

✓ easy to install — Fits right into the floor without need of basement.
✓ compact — Shallow construction, just 25 1/2" over-all.
✓ versatile — Operates with equal efficiency on manufactured, natural, or bottled gases.
✓ functional — Engineered for maximum heat.
✓ efficient — Porcelain Enamel Heat Chamber on Series 1 models has full 20 year warranty.
✓ economical — Tens of thousands now in use prove you can guarantee the prospective home-owner that its operation will be thrifty beyond his expectations.
✓ automatic — Available with completely automatic controls.

For the complete story of TEMCO Gas Floor Furnaces and Wall Heaters fill out the coupon below:

TEMCO, Inc., Division B-522
Nashville 9, Tennessee
Please send catalogue, A. I. A. specification sheets and full information on TEMCO Automatic Gas Floor Furnaces and TEMCO Automatic Gas Wall Heaters to:

Name

Firm Name

Address

City County State
sliding door installation details

Details of installation of sliding door, showing fittings and hardware together with ready-built wall panel framing for conventional 4" studded wall. Dimensions will vary with drywall or other types of construction, but installation economies remain the same.

... aluminum nail specifications

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Sinker head wood siding nails are used for wood and composition siding; casing head siding nails for wood siding, knotty pine and batten siding. Cedar shake nails may also be used to apply interior insulation board. Cedar shingle nails are used with wood shingles, aluminum barn batten, and weatherstrip. Asbestos shingle nails are used with asbestos, slate, and tile roofing as well as with asbestos siding shingles. Insulated siding nails have light finish for face nailing light colored materials. Roofing nails work well with asphalt roofing. Insulation sheathing and gypsum sheathing. Plain shank roofing nails apply crimp. plain. or corrugated roofing. Screw grip nail has similar applications with more holding power.

... casement operator details

Casement operator is designed to provide more than usual ruggedness, plus smooth operation and attractive design. Operator is reversible and may be used with either butt or extension hinges. It requires only 1 1/2" of space between sash and screen.

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 Courtesy Sterling Hardware Mfg. Co.

Courtesy Nichols Wire & Aluminum Co.
... closed pocket assembly for heavy sliding door

Closed pocket assembly for sliding door features eight load-carrying wheels for heavy doors, ¾" vertical door adjustment, and extra heavy track to carry doors up to 85 pounds in weight. Necessary door frame may be obtained from millwork supplier handling the door assembly. Special extruded aluminum split molding affords straighter and stiffer jamb to provide greater rigidity and better operation.

... tools and templates speed lock installation

Thimble wrench provided with this lock set is designed to tighten or loosen rose thimble on lock set. A plastic sleeve is assembled to this wrench to prevent marring the finish of the rose thimble. Templates with full installation instructions are provided by the manufacturer with every lock set to aid installation.

... how to install deadbolt front door lock

A combination weatherstripping guide and balance is said by manufacturer to eliminate leaky box frames, sash cords. Complete metal jambs provide sensitive sash control, good balance, easy adjustment. Units require no oiling, painting, or other maintenance.

APRIL 1953
"EVERYTHING HINGES ON HAGER!"
FLOOR FURNACES
Six Essentials of Satisfactory Installation

1 SIZE
Be certain furnace is correctly sized to handle heat loss of the space to be heated. Where furnace is sized for only a part of the house or building, it is advisable to draw up a short agreement for customer's signing mentioning that point. Whenever possible install sufficient capacity to heat the entire house or building.

2 LOCATION
Place the furnace at least 6” away from any wall as required by Commercial standards. However, we recommend 12” for best performance. See that it is as nearly as possible centrally located in the space to be heated. Avoid locations in corners or alcoves. Do not try to heat through more than one archway and one doorway in any direction.

3 VENTING
Be certain furnace is correctly vented. Lateral vent should slope upwards at least 1/2” per foot to vertical flue with an upper limit of 7/8” per foot. Do not run lateral vents over 20 feet. Where lateral vents are more than 10 feet, the pipe should be insulated with air cell material 1” thick.

4 COMBUSTION AIR
Carefully explain and demonstrate operation of furnace and automatic controls, if used, to customer before leaving. Call back again after 14 days operation to see that everything is right.

5 STOP INFILTRATION
Be certain that the flue gases are not excessive infiltration of cold air from outside or from unheated sections of the building. Loosely fitting windows, cracks around sills and floor, openings under doors, and open attic trap doors seriously affect circulation. Such conditions should be called to the customer's attention and corrected at the time of sale. Besides assuring better heating results, their elimination will save money on fuel bills.

6 OPERATION
Draw air into the combustion space and up through the bed of ash and fuel; for others, the chimney will only need to supply necessary draft to remove the flue gases from the furnace. The preferred location for chimneys is in the interior of the house. Inside chimneys are not so subject to backdrafts, to moisture condensation, or to smoke backing into the house. The preferred height is not less than 8 feet from the top of the smoke pipe connection of the furnace. If the flue must be offset, the angle of the offset should never be more than 30 degrees. Flue lining joints must be perfectly smooth and tight.

Prefabricated chimney units are available today which can be used in place of lined brick construction. Light in weight, they save on installation time and labor, claim savings of up to 50% over brick construction. One type has an insulating wall equivalent to 24 inches of brick. Such chimneys are easily installed, are designed for one- or two-story construction and for use with all fuels. They can be suspended from the ceiling, the floor, or installed with pier support. Flue sections are lined with refractory fire clay, come with joint cement and draw bands for cementing the sections together. Roof housing is easily fitted to exact roof pitches. These packaged chimneys are accepted by FHA and national heating codes and have fire-safe ratings from Underwriters' Laboratories.

Heating Principles
The builder and architect should be responsible for providing the following items:
1. A good chimney or vent pipe for the control of combustion and exhaustion of flue gases.
2. A safe structure protected from fire hazards.
3. A tight structure to minimize heat loss.
4. A durable structure protected against moisture condensation.
5. A comfortable building with a minimum of drafts and cold surfaces.
6. A economical building for winter heating and a comfortable structure for summer coolness.

Research work has indicated conclusively that emphasis on heating equipment alone is not enough—more attention must be paid to the structure itself to insure comfort.

Good Chimney Is Mandatory
The first point to consider in chimney construction is adequate flue area. The quantity of smoke and gas to be removed will depend on (a) the kind of fuel and (b) the amount of fuel needed to heat the house. Flues built for oil and gas burners will not need as large flue dimensions as those which serve furnaces that burn coal. In an area where hand-fired bituminous coal may be burned in a central heating plant, the nominal chimney flue dimensions should never be less than 8 inches by 12 inches.

The height of the furnace flue is also important, and for some furnaces must provide strong enough suction to draw air into the combustion space and up through the bed of ash and fuel; for others, the chimney will only need to supply necessary draft to remove the flue gases from the furnace. The preferred location for chimneys is in the interior of the house. Inside chimneys are not so subject to backdrafts, to moisture condensation, or to smoke backing into the house. The preferred height is not less than 8 feet from the top of the smoke pipe connection of the furnace. If the flue must be offset, the angle of the offset should never be more than 30 degrees. Flue lining joints must be perfectly smooth and tight.

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(Continued on page 262)

APRIL 1953

HEATING, VENTILATING, and AIR CONDITIONING EQUIPMENT

Heating Principles
Chimneys
Fire Hazards
Weatherproofing
Heat Loss Calculations

Fuel Storage
Modern Types
Gravity Warm Air
Forced Warm Air
One-Pipe Steam
One-Pipe Hot Water
Floor Furnaces

Radiant Heating
Hot Water
Warm Air
Glass Wall Panel

Perimeter Warm Air
Baseboard Heating
Control Systems

Heating Commercial Buildings
Air Conditioning and Ventilating

FOR MORE INFORMATION ON PRODUCTS ADVERTISED AND DESCRIBED IN THIS CHAPTER PLEASE USE ONE OF THE PREPARED INQUIRY POSTCARDS IN THIS ISSUE.
Cool the entire house at low cost

Hunter home cooling is one of the most popular features of modern homes

For home owners who want cool comfort at lowest cost during hot summer months, Hunter Attic Ventilation is the perfect answer. Both initial cost and operating expense are very low.

The attic fan's method of cooling a house is simple (see drawing above). It drives out stagnant air through the attic and creates a strong suction which pulls in fresh, cool air from outdoors.

The new Hunter Attic Fan is a compact unit that is easily installed in any home. It requires only 18" attic clearance... ideal for low-pitched roofs. Certified air deliveries range from 5000 to 15500—to fit any home size and climate.

This improved attic fan is priced substantially lower than previous models. Yet it has the same smooth, quiet operation and dependability that have made Hunter Fans famous for over 65 years.

Write for free copy of “How to Cool for Comfort.” See our catalog in Sweet's Files.

HUNTER FAN AND VENTILATING CO.
381 S. Front St., Memphis 2, Tenn.

Hunter Package Attic Fans
"CONDENSED METHOD" HEAT LOSS FACTORS

HOW TO USE THE CONDENSED METHOD
HEAT LOSS FACTORS

Quantities of heat are measured in units called British Thermal Units (abbreviated BTU).

Heat is lost from a warm building through all of its surfaces exposed to lower temperature. This is called "transmission losses." It is also lost due to wind blowing through cracks around windows and doors. This is called "infiltration losses." Total heat loss of a building is the sum of transmission losses plus infiltration losses.

A. The first step is to find how much heat is lost by transmission. Calculate the areas in square feet of all exposed surfaces of the room or building including:

1. Window and outside door area (combined).
2. Net outside wall (gross wall area minus item 1).
3. Ceiling area (below unheated room or attic space).
4. Area of floor outside heated floor (if space below floor in not heated).

Each of the above areas should then be multiplied by the proper factor from one of the Condensed Method tables.

B. Next, estimate infiltration losses. This depends on the amount of cold air blown into the house, which is in turn dependent on the number of windows and doors already calculated in Step A by the infiltration factor selected from Table 5. Also, since there is more air leakage through door cracks than through window cracks, allow an additional 1000 BTU for each outside door. Add 3000 BTU for each fireplace.

C. Add the infiltration losses (Step B) and the transmission losses (Step A) all together. The sum is the heat that would be lost from the room or building if the temperature difference between inside and outside were 100°. In other words, this is the amount of heat it takes to maintain 70° inside when the outside temperature is 30° below zero, which would occur only in the very coldest sections of the United States.

D. Heating requirements are naturally less where the weather does not get so cold. The average minimum temperature in Dallas, Texas, for example, is only 10° above zero. The "design temperature difference" between inside and outside would be 70° minus 10° equals 60°. Therefore, the heating requirement is only 60/100 or 60% of the amount based on 100° TD. The map at the right is zoned according to winter design temperatures, and gives percentages by which results from Step C should be multiplied to find actual heating requirements.

HOLD'S "MOST-WANTED" HOMES
HAVE ELECTROMODE HEATERS
ALL-ELECTRIC

- AUTOMATIC
- MODERN DESIGNS
- CAPACITIES FOR ALL SIZES
- EFFICIENT
- QUIET, FAN-CIRCULATED HEAT
- QUICK, CLEAN, HEALTHFUL
- EASY-TO-INSTALL

Completely SAFE

MODEL WJ A
BATHROOM HEATER

For BEAUTIFUL BATHROOMS— that are easy to install and ideally suited to present day needs.

Approved by Underwriters' Laboratories

ELECTROMODE CORPORATION
45 Crouch St. Dept. AB-153 Rochester 3, N.Y.

APRIL 1953

FRIGID INCORPORATED
FORMERLY CIRCULATORS & DEVICES MFG. CORP.
126-168 THIRTY-SECOND STREET
BROOKLYN 32, N. Y.

FRIGID FAY-36"
Package Unit ATTIC FAN with Built-In Automatic SHUTTER

Builders are finding that they need extra selling features to interest buyers—the low Cost 'FRIGID' FAY-36 ATTIC FAN was designed to answer this need.

A complete package unit Attic Fan, easy to install and ideally suited to give the future home owners hot weather comfort.

The FAY-36 Fan requires but a minimum of attic space and affords maximum air delivery.

Here are some fans of the FRIGID line

LAYDOWN FANS
Belt-Drive ExHAUST FANS
Invertible Window Fans

Write for the new 1953 Catalog & Low Prices.

FRIGID FAY-36" fans are Unconditionally Guaranteed.
Servel has a size

NOW— with Servel All-Year Air Conditioning
climate control, designed and

Servel 2-ton model. Designed for the small, low-cost home. Occupies only 2' x 4' floor space yet delivers full, year-round air conditioning. In winter, the unit automatically heats, humidifies, cleans and circulates the air, and maintains the conditioned space at a predetermined temperature. In summer, it automatically cools, dehumidifies, cleans and circulates the air and maintains a constant temperature.

SPECIFICATIONS:
Delivered capacity—24,000 B.t.u./hr. cooling; 72,000 B.t.u./hr. heating.
Size of unit—46" x 27" x 75".
Weight—Approximately 890 lbs.

Servel 3-ton model. This “Big-home size” unit actually costs little more than the price of a heating system alone yet provides complete home comfort 365 days a year. One compact unit heats, humidifies, cleans and circulates the air in winter; cools, dehumidifies, cleans and circulates the air in summer.

SPECIFICATIONS:
Delivered capacity—40,000 B.t.u./hr. cooling; 96,000 B.t.u./hr. heating.
Size of unit—51½" x 51" x 73½".
Weight—Approximately 1725 lbs.

Servel 5-ton model. For larger homes, this famous Servel unit pioneered in the introduction of All-Year air conditioning. Servel “no moving parts” design means quiet, economical, dependable year-round air conditioning. Automatic control with the Selectrol, plus full heating modulation, maintains uniform temperatures and eliminates “lag” and “overshoot.”

SPECIFICATIONS:
Delivered capacity—65,000 B.t.u./hr. cooling; up to 144,000 B.t.u./hr. heating.
Size of unit—66½" x 57½" x 84½".
Weight—Approximately 2485 lbs.

Heating cycle—Steam at atmospheric pressure is developed in the steam generator (gas- or oil-fired), delivered to the heating coil over which filtered air is forced by the blower. Two-step modulation reduces input to meet local conditions.

Cooling cycle—Steam from same generator actuates absorption refrigeration unit. No pumps or compressors needed.
No doubt about it, All-Year air conditioning is an added stimulant to home buying! In case after case, builders report that year-round climate control is the one feature that clinches the sale.

Now, no matter what size home you build, there is a Servel All-Year Air Conditioner engineered for the job and priced to fit every cost bracket. That means more sales, quicker sales for the builder—lasting, year-round satisfaction for the home buyer.

Contact your nearest Servel dealer or mail coupon for complete information.

SERVEL, INC., Dept. AB-4, Evansville 20, Indiana

Please send me complete information about All-Year air conditioning for [ ] residential, [ ] commercial, [ ] industrial buildings.

Name
Firm
Address
City Zone State

*Trade-mark Reg. Pending.
GET ALDRICH Gulf Stream
C-SERIES
BOILER-BURNERS

PERFORMANCE — With Lasting Economy. Fast, quiet hot water heating ... instant hot water.

DESIGN — For Today's Market. Quick and easy to install, Aldrich saves money, space, installation time.

QUALITY — At Quantity Prices. Engineered for instant response to heating needs ... peak fuel efficiency.

GULF STREAM PACKAGE. Fully erected, pre-wired, accessory-equipped package. Ready to set in place and connect.

EASIER TO SELL... EASIER TO INSTALL... EASIER TO SERVICE...

GULF STREAM STANDARD
Shipped fully erected with complete automatic controls: stack switch, thermostat and limit control.

HOT WATER HEATER
Internally galvanized; 100 to 255 GPH at 100° rise. Instant, directly heated hot water.

ALDRICH Gulf Stream OFFERS VALUE...
that's profitable to sell, practical to buy.
- Five sizes with SBI ratings from 440 to 1120 square feet of water radiation.
- Multiple flue tubes baffled for maximum heat extraction.
- Aldrich burners coordinated to Gulf Stream boilers.
- For inspection and maintenance, readily removable top jacket and large opening to combustion chamber.
- Minimum temperature change regardless of firing conditions.
- Designed for standardized production; to meet ASME code.
- Burners U.L. listed.

THE ALDRICH COMPANY
111 WILLIAMS ST., WYOMING, ILLINOIS
A Subsidiary of Breeze Corporations, Inc.

Forced warm air heating systems may be used in both large and small homes. Furnace may be located at any convenient place in basement or utility room. Heat is supplied by gas, oil, or coal burner, with a blower located in or adjacent to the furnace to force air through the heating chambers and throughout the system. Most forced warm air systems provide filters for cleaning the air and humidifiers for adding moisture. In summer, the system may be used for air circulation. This type of system provides very rapid response to changes in heating demands.

Forced hot water heating systems may be used in homes of any size or shape. Boiler may be located in basement or utility room. Either one pipe or two pipe systems may be used to provide supply and return lines between boiler and radiators or convectors. A circulating pump, usually in the return water line, controls the flow of water through the system. An expansion tank allows the water in the system to expand or contract with changes in temperature. It also keeps boiler and radiators filled with water at all times. Forced hot water systems are frequently used with radiant panel installations.
Turn the knob on Dunham's new damper and you're set for most effective heat distribution. Why overheat when it's so easy to "put the damper on" heat output? And why let air swirls and eddies cut down good convection when this Dunham damper directs air through the louver grille?

And since the Dunham grille is an integral part of the heavy, sheet steel front ... there are no separate panels to rattle, no bolts or welds to loosen. Just a sturdy one-piece front and grille.

You're set for better heat ... for a longer time ... when you have Dunham Convectors. Write for further facts.
twin pipe steam...

Two pipe steam heating systems differ from one pipe installations in that the condensation water returns to the boiler through separate pipes rather than through the pipe which supplies the steam. A trap at each radiator prevents steam from returning with the water. In basementless homes, where sufficient drop cannot be provided for return lines, a condensate pump is normally installed. This system is efficient in larger homes and commercial buildings, is generally more flexible in operation and eliminates the need for radiator valves. Automatic controls may be installed to regulate the system for both comfort and safety.

one pipe steam...

In the one pipe steam heating system, the boiler must be located below the level of the rooms to be heated. Steam for heating is generated in the boiler and rises through a large supply line. Single pipes from this line carry the steam to radiators where it gives off heat and condenses to water, which drains to the return line through the same pipe which supplied the steam. Air that may be in radiators or steam lines is eliminated through vents on the radiators. One pipe systems eliminate extra piping and offer economies of installation, particularly in smaller homes.
In beautiful modern homes like this, Thrush zoning provides controlled comfort at low cost.

Buildings may be zoned so that each apartment has individual control of temperature from a single boiler.

Zoning reduces operating costs for Motels.

JUST THESE SIMPLE UNITS NEEDED FOR EACH ZONE . . . a Thrush Water Circulator, a Thrush Radiant Heat Control (with Relay Transformer) and a Thrush Flow Control Valve.

WITH THRUSH FLOW CONTROL SYSTEM OF HOT WATER HEAT

YOU CAN install low cost Radiant Hot Water Heat in every type of modern building and provide the greatest comfort with complete control of temperatures. Best of all, it is easy to zone any building or group of buildings with Thrush Flow Control System of Hot Water Heat, using a single boiler. This method provides individual heat control in each building, apartment or area of a home. It is ideal for use with radiant coils, radiant baseboards, radiators or convector. For more information see our catalog in Sweet's or write Department G-4.

H. A. THRUSH & COMPANY

APRIL 1953
Fire Hazards Should Be Eliminated

Some of the more common fire hazards over which the builder has some control (but the heating contractor very little) are:

1. Chimneys and pipes accumulate soot from soft coal. If chimneys "burn out" and soot catches fire, a danger spot exists if any combustible material touches the chimney, such as roofing or framing.

2. Specifications exist for clearance between smoke and vent pipes and adjacent combustibles such as joists or partitions. Protect such surfaces!

3. Smoke pipes should be short and well supported, so as not to serve as soot collectors. Fit sections together with screws and hang securely. Build to withstand any puffback short of an explosion. If the smoke pipe is long and has bends, it needs periodic cleaning.

4. Thermostatic controls are primarily designed for temperature control for comfort. However, limit-controls exist which can guard against excessively hot temperatures and will stop the stoker or gas burner

DUAL-WALL TYPE FLOOR FURNACE

designed to be set under the wall between two rooms where there are no interconnecting openings

(Continued from page 253)
Weatherproofing Saves Fuel

In remodeling an existing house, the following weatherproofing steps should be taken: (1) installation of storm doors and weatherstripping outside doors; (2) installation of storm sash, especially living room, dining room and sunroom areas; (3) insulation of ceilings; (4) insulation of sidewalls. (Listed last because most expensive.)

With new house construction, these steps are taken in reverse order. The minimum requirements for FHA-mortgaged homes list the minimum values for transmission of heat for walls and ceilings. These are bare minimums and should not be considered desirable. In any case check over your plans with the heating contractor and let him specify allowable heat loss from each room so that provision can be made for necessary weatherproofing to provide comfort without putting unnecessary strain on the heating system.

Floor Furnaces

The simplicity of floor furnaces has many virtues, chief of which is low installation cost. No ducts are required. The furnace needs no basement, uses no living space in any room. It requires very little skilled labor to install. Single units usually have sufficient capacity to heat four or five rooms in a small house.

A good floor furnace will circulate all the air in the heated space three to five times an hour without excessive velocities or drafts. The unit itself usually consists of a combustion chamber together with interior radiator sections to provide maximum heat transfer surface, all enclosed in a metal inner liner. Space between inner liner and outer jacket provides for cold air return to bottom of the unit.

For warmth...and Beauty

Bush Conectors

Modern heating at its best! Builders have discovered the many advantages of the Bush line of conectors. . . . Recessed conectors maintain clean, unbroken lines of modern rooms, preserve free floor space. Aluminum and copper finned elements promote quicker response to heat needs, mean greater economy of operation. Placed under windows, these units diffuse a blanket of heat at such "cold spots". They insure draft-free as well as dust-free heating.

Bush Baseboard Radiation

Bush Baseboard, like Bush Conector radiation, eliminates "wall streaking". Here is a modern heating unit built to satisfy the demands of engineers, builders and homeowners. Aluminum and copper finned tube elements mean economy of operation, quick response to heat needs. Uniform heat spread along the outside walls eliminates concentrated blasts of heat and consequent drafts and dust.

Write for free bulletins on baseboard radiation and convector radiators.

THE BUSH MANUFACTURING CO.
West Hartford 10, Connecticut
Send me complete information on your Baseboard and Convector lines.
NAME

STREET

CITY. STATE

BUSH MANUFACTURING COMPANY WEST HARTFORD 10, CONN.
Horizontal gas furnaces offer economies in space, as they may be installed under basement ceilings, in utility room ceilings, or below the floor in crawl space for basementless homes. Locating the horizontal furnace in crawl space has also many duct-saving features, which also apply in basement locations below kitchen counter and work areas. Where furnace is installed in crawl space, all duct work can also be placed there so that no useful space is used by either furnace or ductwork.

** USE OF FLOOR FURNACES **

The simplicity of floor furnace heating systems has many virtues, the most important of which is the low cost of installation.

The one-story and ranch type homes are easily adaptable to the use of floor furnaces. Also, the open planning used today permits good circulation of heat to several rooms from a single unit. In large homes, zoned heating may be readily achieved through the use of several units, each individually controlled.

No ducts are required in installing floor furnaces. The result is a lower initial cost than that required with any other type of warm air heating system.

Floor furnaces are not usually recommended for two-story buildings, since it is difficult to provide for units to be located in the second floor. Therefore, for all general purposes, a floor furnace heating system should be confined to one-story buildings. Occasionally furnaces can be installed at foot of stairs so as to do a reasonably good job of heating second floor.

With the dual wall furnace, it is possible to heat two adjoining rooms with the connecting doors closed. It is especially suited for use between two bedrooms, a bedroom and hallway, between two connecting rooms where it is desired to close off occasionally, or where the arrangement prevents proper air circulation for efficient heating with conventional floor furnaces. The installation of a dual wall furnace between a bath and an adjacent room is not recommended.

When installing the auxiliary equipment such as the fuel oil storage tank and piping, good material together with skilled workmanship is important. Most cities have certain rules and regulations governing the installation of such equipment and each builder should know existing local regulations.

For two-story buildings, install oil storage tanks in the basement. Providing that local regulations permit, two 275 gallon storage tanks, giving a total storage capacity of over 500 gallons, may be used. This arrangement is in accordance with the rules and regulations of the Underwriters' Laboratories. All such storage tanks should bear the Underwriters' label. Photograph tanks are preferable in that this construction considerably reduces the door clearance necessary to allow passage of the tank.

The inside tanks must be mounted on legs of some non-combustible material. Usually iron pipe is used, the fittings on the tank determining the size of pipe to be used.

A suitable approved gauge screwed in the top of the tank for indicating the amount of oil is permissible but in no case should a glass level gauge be used. UNDERGROUND STORAGE TANKS. In
"With Delco-Heat I know I can guarantee winter comfort in the homes I build!"

-says Mr. J. J. Glickman, River View Village Corp., Wappinger Falls, N. Y.

Delco-Heat helps sell homes—keeps buyers happy

The Effron Fuel Company of Poughkeepsie, N. Y., has installed over 1,000 Delco-Heat Conditionairs in Dutchess County alone. Typical of builder response is this statement by Mr. Glickman, who goes on to say, "After 50 years of building experience using many different types of heating equipment, we chose Delco-Heat because it meets the requirements of the most critical buyer. Our customers tell us the units are very economical in fuel costs and maintain even temperatures in every room of the house."

Whatever the system, whatever the fuel, your Delco-Heat Distributor has the answer with these nationally-advertised units, backed by General Motors, that help sell homes faster. See him today or write: Delco Appliance Division, Dept. B4-53, General Motors Corp., Rochester 1, N. Y.

For a good deal—DEAL WITH DELCO

General Motors Engineering Delco Production Skill

...your keys to Sales Success

APRIL 1953
Glazing the Air-Conditioned Home

WHY AIR CONDITIONING CALLS FOR SPECIAL CONSIDERATION OF WINDOWS

Windows are possible sources of heat gain in summer, just as they may waste heat in winter. That's why, in air-conditioned homes more than ever, windows must be thoughtfully planned to give home buyers the comfort they want, and to assure efficient and economical operation of the air-conditioning system.

YOU HAVE THESE CHOICES FOR BETTER HEATING AND COOLING:

1. Resort to old-style, small windows to reduce heat loss and heat gain.
2. Use insulated windows. There are two ways to do this:
   a. Storm sash on all windows the year 'round.
   b. Sealed insulating glass in all windows.

SMALLER WINDOWS

Smaller windows have steadily lost favor with architects, builders and buyers. Home buyers have shown a tremendous and continued desire for picture windows and window walls. To give them smaller windows would be a backward step that is sure to run into sales resistance—resistance which would be felt by builders, architects, real estate people and air-conditioning people, too.

INSULATED WINDOWS

Insulated windows, the other possibility, are a more logical and saleable answer to glazing for air-conditioning and heating economy. With insulated windows you reduce heat loss in winter and heat gain in summer. They save fuel in winter and power in summer, and help make the house more comfortable the year 'round. Consider the two ways of insulating windows:

1. Storm sash is one means of window insulation. They can be left in all year to provide summer as well as winter insulation. But they must be taken down periodically for washing, since dirt and moisture will infiltrate between them. And storm sash in sizes required for today's larger windows are unwieldy.

2. Sealed double glazing allows the use of large windows for daylight and view without the bother of storm sash. More and more builders have been putting Thermopane* insulating glass in medium and low-price homes just for its winter benefits. Now, in the air-conditioned home, these become year-round benefits and the extra cost of double glazing is doubly justified. The extra cost is minimized by the use of standard size units, standard sash and simplified installation methods.

The table below shows Thermopane's effectiveness in cutting down heat transfer by conduction and convection from the warm to the cold side. Thermopane saves, roughly, half of the money that would be wasted through single glass by these forms of heat transfer.

<table>
<thead>
<tr>
<th>Kind of Glass</th>
<th>Thickness</th>
<th>Winter U. Value</th>
<th>Summer U. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single pane (plate or sheet)</td>
<td>¼&quot;</td>
<td>1.16</td>
<td>1.07</td>
</tr>
<tr>
<td>¼&quot; (air space)</td>
<td></td>
<td>1.15</td>
<td>1.06</td>
</tr>
<tr>
<td>Thermopane (double-pane units)</td>
<td>½&quot; (air space)</td>
<td>0.65</td>
<td>0.61</td>
</tr>
<tr>
<td>1&quot; (air space)</td>
<td></td>
<td>0.58</td>
<td>0.56</td>
</tr>
</tbody>
</table>

NOTE: Heat transmission coefficients (U. values) vary with ranges of temperature. Winter U. values above are based on 10° outside temperature, 70° inside temperature. Summer U. values are based on 95° outside temperature and 80° inside temperature. Wind velocity of 15 mph outdoors and normal free air movement inside are assumed in both cases.

HOW TO PLACE WINDOWS IN AIR-CONDITIONED HOMES

Insulation, alone, is not enough. Location and exterior shading of windows are vitally important if heating and air conditioning are to work with maximum effectiveness and economy. Energy from the sun and sky place by far the biggest load on air-conditioning systems in homes. The house should be located to make maximum use of the sun for winter warmth, but must have provision for shading certain windows in summer.
SOUTH WINDOWS

To make maximum use of solar heating in winter, the house should be laid out along an east-west axis, with large windows facing south. This brings in the low winter sun for fuel savings and comfort. South windows are easily protected from high summer sun by a roof extension (so designed that the low winter sun enters under it). The diagrams below show how this works. For correct design information for this overhang, see an architect or engineer. Most of them are equipped with the necessary guides to figure it out for your latitude.

WEST WINDOWS

West windows must be more carefully considered than those on other elevations. Due to the buildup of heat through a hot summer day and the fact that the west elevation is exposed to the low afternoon sun, heat transmission through west windows can place a great load on the air-conditioning system. There are several possible ways to handle the west elevation problem:

1. Some architects and builders solve this problem by placing the porch, garage, carport or utility room on this side of the house.

2. If there are large trees on the site (or if they can be added) to shade west windows, the problem is solved by nature. The leaves provide summer shade—the bare branches let the welcome winter sun come through.

3. Heat absorbing glass is an effective means of decreasing solar heat gain. This blue-green glass is made with a special chemical composition which enables it to absorb solar energy. Much of this heat is dissipated back outdoors, so that less load is thrown on cooling equipment. For best results in west windows, therefore, Thermapane should have heat absorbing glass as the outer pane. This heat absorbing Thermapane reduces the heat gain through west windows approximately 50%, as compared to single-pane, clear glass windows. This has been determined by calculations made for west windows at 4:00 P.M. in summer, when the sun is considered to be at its worst angle. By reducing the cooling load, heat absorbing Thermapane may even reduce the size of the air-conditioning equipment required for the home.

EAST AND NORTH WINDOWS

North windows rarely present a problem of radiant heat gain. Windows in the eastern elevation, if exposed to the morning sun, may require shading as suggested for western windows. An engineer's or architect's recommendations should be obtained on this.

TYPES OF SASH TO USE

Some architects and builders employ fixed sash in air-conditioned homes, relying on the heating and air-conditioning system to provide ventilation. In some cases, louvers or other kinds of openings are used for supplementary ventilation. Fixed sash are usually economical and they do away with the need for insect screens in windows. Standard picture window and window wall frames are available from a number of manufacturers through their dealers—frames of wood or metal. These frames take standard sizes of Thermapane insulating glass which is readily available from L·O·F Distributors and Dealers.

However, many people will insist upon having ventilating sash in their homes for psychological reasons and because they may want to use natural ventilation in the more moderate seasons of the year. Their preferences can be satisfied with ventilating sash which take standard Thermapane units. These sash, of wood or metal, are available in all common types. Your L·O·F Glass Distributor or Dealer can furnish information about them and about standard Thermapane units for them. Or, write us if you wish more complete information on Thermapane, its standard sizes and types of sash for it.

These two pages are a condensation of a brochure that covers the entire subject more fully with additional technical supporting data. We shall be pleased to have you write for a copy of "Glazing the Air-Conditioned Home".

Libbey-Owens-Ford Glass Company, 343 Nicholas Building, Toledo 3, Ohio
floors...

Concrete slab with 6" to 10" of gravel, stone, or insulating fill; tubes in slab. Dry earth or sand fill underneath. Finish floor may be tile, linoleum, wood or other.

Intermediate floor panel with concrete slab, cement fill with hollow gypsum block fillers, tubes placed in fill. Ceiling below may be plain or plastered; finish floor may be ceramic tile, linoleum, or wood.

Uninsulated intermediate floor panel is concrete slab without fill, tubes in slab, with plain or plastered ceiling below. Finished floor above may be either wood, linoleum on slab, or tile on slab.

Intermediate floor panel has wood sub-floor, wood joists, light weight concrete slab with cement fill, tubes located in fill. Ceiling below is lath and plaster. Finish floor above may be linoleum or ceramic tile, or single wood directly on slab.

RADIANT PANELS

INSTALLATION PRACTICES

FLOOR AND CEILING PANELS

1. Boilers should be automatically-fired. The control of water temperature in hand-fired installations is not close enough for panel heating.

2. Slab floors, whether or not they are used as a heating panel, must be provided with at least 1" waterproof edge insulation at least 24" deep or to the bottom of the frost line. The use of a waterproof membrane (vapor barrier) between the gravel fill and the slab is recommended.

3. All pits should be provided with drains.

4. Where panels do not cover the entire area of the floor or ceiling, the coil should be located near the exposed perimeter.

5. All pipe ends should be reamed.

6. Connections between pump and boiler should be as close as possible.

7. Wherever the size of pipe changes in a horizontal run, use an eccentric reducer, keeping the top side level.

8. Drains should be installed at all low points.

9. All high points should be vented. Vents should also be installed where the plane of the system changes.

10. Balancing cocks or valves should be used on each coil. They should be installed below traffic plates for floor panels, and with extended stems, if necessary, for ceiling panels.

11. A mixing or tempering valve should be used to control the temperature of the water to the heating system if the boiler is used also to supply domestic hot water. This valve should be connected in accordance with maker's recommendations.

12. A flow control valve should be used when the heating panels above the boiler and the boiler is used also to supply domestic hot water.

13. A pressure relief valve should be installed on the boiler.

14. The air cushion tank should be located above the boiler.

15. Coils should be filled with water very slowly in order to vent them properly.

16. The entire piping system should be tested to a hydrostatic pressure of 100 p.s.i. for a minimum of four hours before being connected to the boiler and before being concealed.

...ceilings

Insulated flat roof panel showing built up roof with wood deck, wood or steel trusses. Furring is required. Tubes in plaster below metal lath. To increase reverse conductance, add rock wool or equivalent insulation.

Uninsulated intermediate ceiling panel shows concrete slab with optional cement fill. Tubes located in slab. Ceiling is gypsum plaster applied direct to slab. Floor above may be wood, linoleum or other.

Intermediate ceiling panel has concrete slab with cement fill optional. Tubes are located in the plaster which may be either gypsum or cement applied direct on metal lath.

Uninsulated intermediate ceiling panel shows cinder concrete slab and joists with optional cement fill. Tubes are in plaster below metal lath which is furred to slab. Add Rock wool or equivalent insulation to obtain reverse conductance.

Intermediate ceiling panel has concrete slab and joists—a prefabricated system. Cement fill is optional. Tubes are in plaster below metal lath which is attached directly to concrete joists.
17. Because of variable conditions, controls should be selected and installed in accordance with control manufacturers' recommendations.

**FOR FLOOR PANEL SYSTEMS:**

18. Coils should not be laid on nor come in contact with cinders or other corrosive fill.

19. Coils should start 6" from the exposed perimeter of a floor slab.

**FOR CEILING PANEL SYSTEMS:**

20. All ceiling panels should be backed by insulation whether or not there is heated space above. When panels are exposed to unheated space, at least 3/4" rock wool insulation or equivalent is recommended.

21. For ceiling panels it is advisable to design the coils so that the tube runs at right angles to the joists, which will give better support.

22. Coils should start 3" from the exposed perimeter of a ceiling.

23. Coils in ceiling panels should not be used to dry the plaster. The first time heat is applied in a new installation, the temperature of the coils should be raised only a few degrees daily.

Where coils go into ceilings, expanded metal lath is preferred for the plaster base, with the coil above the lath and attached to the joists. Where coils are below the plaster base, plastering time is usually tripled and much more plaster is required. Acoustical or other insulating tile should not be used for ceilings in which the coil is to be located. Panels installed in dead air space between floors are ineffective.

Insulation should be used to reduce heat flow in reverse direction to that desired. Where reflective insulation is used, the reflective surface should face the warm side but not be in contact with it; there should be an air space on both sides of the insulating material of at least 1/4-inch. Vapor barriers under floor panels are essential.

Leaks and corrosion of pipes present no greater problem than in other "closed systems." The choice of piping is unimportant from the standpoint of heat output, but per foot cost, plus installation cost, and labor must be considered. Size of pipe has little to do with heat output either, but definitely determines booster pump capacity required.
Year-round air conditioning is the hottest thing in the home market today. It's just what the customer wants... it's just what the builder needs to close that sale! And Typhoon has the most practical home air conditioner you can install. One compact unit that heats in winter, cools in summer—with the touch of a single button. To put irresistible sales appeal in the houses you build, call Typhoon today.

44 YEARS OF COMFORT ENGINEERING
IN THESE EXCLUSIVE TYPHOON FEATURES!

ONLY TYPHOON has completely automatic changeover design—one button for switching from heating to cooling; no dampers to manipulate!

ONLY TYPHOON has an all-copper condenser—it defies rust and corrosion, gives trouble-free service.

TYPHOON is a miracle of compactness—takes up less space than any other unit, can even fit into a standard closet!

SIMPLE TO INSTALL—just a few quick connections and within hours your Typhoon unit is ready to function.

INEXPENSIVE TO OPERATE—Engineered to the point of greatest economy consistent with dependable performance.

QUIET—Completely insulated heavy-gauge steel cabinet and floating spring base assure quiet operation.

FACTORY TESTED—Every unit is thoroughly checked for performance before shipment.

A FULL line of Residential Models!

There's a Typhoon residential year-round unit to fit any specification. Oil or gas-fired, water or air-cooled, upright or counterflow—you'll always have the answer with Typhoon S-W Units!

TYPHOON

HAS THE KEY
to this great new home market—write, wire, phone for information today
modern buildings need...

... modern heating equipment

It's Reznor PAC, new, simplified gas-heating unit for homes, offices, stores, and industry.

Completely automatic, fully-enclosed Reznor PACs are easily installed as single or group-controlled unit heaters that clean the air as they heat it.

Connect Reznor PAC to regular duct work and you've got the most compact, efficient and salable central home heater on the market, fully approved for all types of conventional perimeter, micro-duct and other forced-air heating systems.

You can put it in the basement, utility room, attic or any crawl space. Reznor PAC, handsomely encased in grey-green cabinets, mounts on wall, floor or ceiling. 75,000 BTU unit takes up about 22" x 23" x 40" space.

Bigger capacity units are slightly longer.

get the facts now about fast-selling new multi-purpose REZNOR PAC

REZNOR
WORLD'S MOST ACCEPTED NAME IN GAS HEATING EQUIPMENT

APRIL 1953
This Trade Secrets House just completed in Dayton, Ohio, has Year Round "Controlled Climate." And the builder's total cost—installed and ready to operate—was only $1.05 per sq. foot!

The 96000 B.T.U. of heating and 3 H.P. of cooling keep this modern home of 1340 square feet in the Comfort Zone—regardless of extremes of outside weather. Air is cooled and dehumidified in summer; heated and humidified in winter... and it's filtered and circulated every day of the year.

Year 'Round Air Conditioning by Chrysler Airtemp can help you sell your homes easier.

HERE'S WHY:
- The Chrysler Airtemp name is known... through consistent national advertising.
- 15 years of residential installation experience! Chrysler Airtemp offers a time-tested package.
- Chrysler Airtemp stands behind its products! An authorized dealer network eliminates your service callbacks.
- The Chrysler Airtemp optional five-year warranty helps create customer confidence.

Get all the facts on "Controlled Climate" today.
Over 135 ways to make money with Borg-Warner’s Norge Heat

With Norge Heat you get a choice of over 135 different domestic heating units, and a line that is being continuously expanded to include every new and worthwhile development in year ’round air conditioning.

You can knock the bottom out of handling costs and add these savings to your regular profit because Norge Heat units have many applications, are unusually compact, and simple to install.

Whether you are thinking of gas, oil, or coal-fired heating equipment, you can get what you want when you want it from Norge Heat. No need to waste time and go to the expense of dealing with many suppliers. And, you are assured of a name backed with the reputation and resources of Borg-Warner Corporation.

Get the complete Norge Heat success story and descriptive literature today — see your Norge Heat dealer, or write or wire direct: Norge Heat, 346 E. South St., Kalamazoo, Mich.
GUARANTEED to help you sell!

2. Aluminum Foil Faced Fiber Glass Insulation.
3. Burner Plate Easily Removed
4. Oil Burner Interchangeable with Gas Burner.
5. Stainless Steel Combustion Chamber.
6. Removable Vestibule Door.
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8. No Metal to Metal Contact at Division Panel.
9. Two Large Air Filters.
10. Quiet, Powerful Blower.
11. Solid Base with Leveling Screws.
12. Radiator Side Pans Increase Heating Surfaces.

ALL MOR-SUN HEAT EXCHANGERS guaranteed for 10 years!

MOR-SUN AUTOMATIC WARM AIR HEAT

You have no heating guarantee problems when your homes are equipped with MOR-SUN Warm Air Conditioners. You have no guarantee worries because MOR-SUN backs up the Center of Efficiency of its furnaces with a bona fide 10 YEAR GUARANTEE on all its Heat Exchangers. Other elements of the MOR-SUN Furnaces carry a one year guarantee. The improved MOR-SUN Heat Exchanger means added value, too. It is seam welded of heavy gauge steel and engineered to give top performance with MOR-SUN Gas or Oil Burners. Its larger radiation surfaces step up heat transfer — deliver more heat per fuel dollar. MOR-SUN Furnaces are the "answer" for Builders who demand more quality in their homes... they are guaranteed so that your selling will be easier.

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For MORE VALUE with MOR-SUN... Mail this Coupon!

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Gentlemen: Send illustrated booklet showing inside reasons why MOR-SUN Warm Air Furnaces add VALUE to my homes.

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HAD BETTER LOOK INTO THIS!

FOR HOME, Office, Apartment, Motel, the BRILLIANT FIRE continues to get first call among in-the-wall Heatmakers. And rightly so... it's so compact, so practical. It is simple to install, operate, regulate... thrift-wise on fuel, too. Has low-level heat delivery to insure Living Zone comfort... no sweating, no odor. Requires no floor space... panel projects but 3 1/2" from wall. The BRILLIANT FIRE comes complete in super-insulated Wall Box... all ready to attach flue and gas line. Included are built-in Draft Diverter and Safety Pilot. Automatic Controls optional. Offered in Single-Room and Dual-Room models. Sizes range from 17,500 Btu upward. Engineered for All Gases... and for High Altitude operation. Wall Panel is richly finished in Opalescent Beige baked enamel.

NOTE THESE FEATURES
- Designed to install in any Inside or Outside standard wall (2" x 4" studding, 16" centers). Dual-Room models for Inside walls only, of course.
- Telescoping Wall Box adjusts to exact wall thickness (plaster, fiberboard or other variables) without extra parts or special tools. Adjustment of 1 1/2" provided at each panel, merely by loosening a few screws.
- Rugged, all-steel Header included to securely anchor and align Heater in wall... and support flue.
- Combustion Chamber head is cast of heat-resistant iron... takes impact of flame, assures lifetime service.
- Heating Section is gas-tight from burner to flue... 100% welded. Especially designed Tubes extract maximum heat from fuel. Burner has raised ports, is non-clog.
- Safety Pilot and Draft Diverter are standard equipment, all models. For City Gases, Gas Pressure Regulator is also included.
- Wall Panel is in 2 sections. Snap-on Service Panel (lower) removes in a jiffy, handy for lighting.
- Convenient Manual Control... it regulates main burner without interference to auto-control operation.
- All sizes of Heaters are shipped as Basic Models. Thus, Automatic Controls can be drawn from modest stock... are easily installed, as required.

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A.G.A. Approved under 1950 Central Heating Requirements.
Here's The Modern Line
In Enameled Cast Iron Sinks!

Richmond Serbin No. 1585—Double compartment, double drainboard with ledge-back. Sizes: 72" x 25" and 60" x 25". Serville No. 1535—Single compartment, double drainboard with ledge-back. Sizes: 60" x 25" and 54" x 25". Seymour No. 1537—Single compartment, double drainboard with ledge-back. Sizes: 60" x 22" and 54" x 22".

Richmond Shelton No. 2115—Double compartment, flat rim with ledge. Sizes: 42" x 21" and 32" x 21". Richmond Stratton No. 2110—Single compartment, flat rim with ledge. Sizes: 30" x 21" and 24" x 21".

Richmond sinks for every type of installation!
For built-in counters—flat-rim sinks with single or double compartments. With or without ledge for deck-type fittings. For base cabinets—ledge-back sinks with single or double compartments, single or double drainboards. For installations where space is at a premium—compact sink and tray combinations—ledge-back and flat rim. For economical replacements—wall-hung roll-rim sinks, single drainboards (left or right).

Richmond sinks in rugged enameled cast iron!
Durable cast-iron base with easy-to-clean, acid-resisting enamel for lasting beauty.

Richmond sinks in "whiter-white" or decorator colors!
Your choice of "whiter-white" or four modern pastel colors for cheerful, colorful kitchens.

Richmond sinks that are sure to satisfy!
Richmond quality kitchen sinks assure customer satisfaction. Specify plumbing fixtures that carry the Richmond guarantee.

See your wholesaler or Mail Coupon Today:
Beat the bandwagon . . . Offer
Bundyweld Ceiling Radiant Heating NOW

Remember yesterday . . . when sleek, modern kitchens and colorful bathrooms sold houses for you? Everybody got on that bandwagon. So today you need a new clincher.

And here's the answer . . . Bundyweld Ceiling Radiant Heating. It's the bandwagon of tomorrow, and you can get the jump on it today!

Now you can offer a house where every room has the clean, refreshing, all-over warmth of a day in May. You can promise a tested, trouble-free heating system that practically brings the sun indoors, yet costs less to run. That's sales appeal!

You won't have to sell your prospects on this wonderful new system. Bundy ads have already done that. Millions of people have read them in Better Homes and Gardens, American Home, Small Homes Guide, and House Beautiful. Requests for literature are pouring in. Buyers everywhere are writing for the names of architects and builders who handle Bundyweld Ceiling Radiant Heating in their areas. Start now to cash in on this terrific public interest. Send for your Bundy literature today.

Radiant Heating Division
BUNNY TUBING COMPANY
Detroit 14, Michigan

SEND FOR FREE LITERATURE!

[Diagram of Bundy Heating System]

Radiant Heating Division, Dept. A8-453
Bundy Tubing Company, Detroit 14, Mich.

☐ Send free 20-page nontechnical brochure explaining Bundyweld Ceiling Radiant Heating.
☐ Send Bundy technical radiant heating pamphlet.

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APRIL 1953
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residential fan installations

Fan Installed Over Stairway
Homes which have a stairway to the attic are often enclosed as
illustrated above. The fan is mounted over an opening in the
enclosure, eliminating the necessity for a ceiling shutter or grille.
By keeping the door to the attic closed, air is drawn through
open windows in rooms below, exhausted into the attic, and forced
out through attic discharge openings.

Fan Installed in Louvered Pent-house
Flat-roofed buildings usually require cooler fans more than
any other type of structure since heat radiates from the roof
directly into rooms below. A penthouse of either wood or metal
may be constructed over a centrally located ceiling opening.
Fan may be installed either vertically or horizontally, exhausting
directly outdoors through a louvered opening. Ceiling shutters
are available for either horizontal or vertical installation.

Fan Installed in Attached Garage
Attached garages often prove a desirable place to locate the
home cooler fan. This is particularly true in modern homes with
roof-line ceilings or butterfly roofs and without basements. The
fan is mounted in the garage, outside the house wall opening
with a suitable grille on the room side of the home. By building
a housing around the fan frame, an automatic outside shutter may
be mounted in front of the fan to close the opening when the
fan is not being used.

Fan Installed in Basement Window
When the usual attic or roof installation of a home cooler fan
is not practical, the basement may provide a suitable place for
installing the fan. If basement windows are large enough, the fan
may be mounted directly on the window frame or a suitable open-
ing made and equipped with an automatic outside shutter.

Courtesy Emerson Electric Co.
The family in this illustration is enjoying four comfort advantages of B & G Hydro-Flo Forced Hot Water Heating.

First, radiant sunny warmth! Second, the area around the low picture window is comfortably heated. Third, room air temperature from floor to ceiling and wall to wall is virtually uniform. And finally, the floor is warm.

Now add this! Regardless of how the weather changes, the temperature in this home will remain constantly at the comfort level. The variable water temperature of B & G Hydro-Flo Heating permits close matching of the heat input with the heat loss... assuring more comfort on less fuel!

For the complete story, send for booklet "Capture the Sun with B & G Hydro-Flo Heating."

Another extra advantage—snow melting!

The home or building with B & G Hydro-Flo Heating can be equipped with an auxiliary snow melting installation. Hot water from a heat exchanger connected to the boiler is pumped through pipe coils under the sidewalks, melting snow as fast as it falls. Another back-breaking job eliminated!

Plus year 'round hot water

The heavy domestic hot water load imposed by modern automatic clothes and dish washers is easily handled by a B & G Hydro-Flo Heating System. The Water Heater unit, heated by the same boiler that heats the house, provides ample quantities at low cost—24 hours a day—winter and summer.
CONVECTORS

Standard free-standing, wall-hung, semi-recessed and fully recessed types.

Low-level for picture windows.

UNIT HEATERS

For Use With Steam or Hot Water

Gas-Fired

COILS

Cooling Coils

Heating Coils

AIR CONDITIONING UNITS

Horizontal Type "YAC" Unit

Vertical Type "YAC" Unit

YOUNG

YOUNG RADIATOR COMPANY

DEPT. 703-D, RACINE, WISCONSIN

Factories at Racine, Wisconsin and Mattoon, Illinois
Sales and Engineering Offices in All Principal Cities

Heating, Cooling, and Air Conditioning Products for Home and Industry.

Heat Transfer Products for Automotive and Industrial Applications.
Radiant Heating With Warm Air

Radiant heating with warm air is accomplished with a closed system utilizing air instead of water but channeling it through ducts from furnace-heating chamber and returning cooler air to the furnace, much as hot water is carried through the closed hot water systems.

It is assumed that air and water flow in much the same manner; consequently, with the first duct or tile channel supplied with warm air being the last to return to the furnace, grids or ducts are laid out to insere uniform air flow.

Most standard forced warm air furnaces can be used, except that filters and automatic humidifiers are unnecessary. Floor ducts can be tile, brick baffles, or other inexpensive materials. For economical and comfortable operation, systems should be designed for floor temperatures of 85 degrees F. maximum.

One important consideration is heat loss off the end of the slab. Insulation should be provided here as well as below the floor ducts to prevent heat loss and moisture and vapor accumulation.

Calculations necessary to install such a system include heat loss, furnace bonnet temperature and entering air temperature at channels, C.F.M. of blower and static head against which it is to discharge.

Perimeter Warm Air Heating

Perimeter warm air systems heat homes comfortably by adding enough warmth to replace the heat which is lost at the points where it is lost. The heat is directed particularly at outer wall areas which, with windows and doors, are responsible for most heat loss. In fact, outside walls in the typical one-story house account for 30 per cent of heat loss, doors for 16.4 per cent and windows for 32.6 per cent making a total of 79 per cent at these three points.

The National Warm Air Heating and Air Conditioning Association has prepared a series of definitions and descriptions of various types of perimeter warm air heating. These include:

- Crawl Space Duct System. With a home built over a crawl space, the system is suspended from floor joists. Branches from furnace plenum or extended plenum end in registers placed below windows and along outside walls.
- Loop System. For homes built on concrete slab set directly on the ground, warm air ducts embedded in the slab follow the outer wall of the building in a continuous loop supplied by feeders from the furnace plenum chamber. Registers are below windows. Floor surfaces radiate some heat also.
- Radial System. Houses with either crawl space or slab construction can use this system, which has individual ducts from furnace chamber reaching each window or wall register.
- Lateral System. This layout places the furnace at one end of the building, in the center, with an extended main channel or duct running the length of the building down the middle. Every few feet, tile ducts branch off at right angles to both sides and conduct air to wall registers running the length of the building.

In all cases, supply should be connected to front tapping in top of boiler.

(Coated on page 286)
The Talk of the
CAN BE THE TALK OF YOUR TOWN!

HERE IT IS—the new, all-new, really small G-E Year-Round Air Conditioner—exactly as seen by the thousands of enthusiastic home builders who thronged the G-E exhibit at the 1953 NAHB Show in Chicago. Builder after builder told G-E representatives it's just what the industry ordered! Heating and Cooling from a single, small packaged unit they can locate anywhere.

HOME
HEATING & COOLING
WITH AirWALL* SYSTEM

282 AMERICAN BUILDER
G. E.'s new Year-Round Air Conditioner uses as little as 8.2 sq. ft. of floor space—with over 190 model choices—for every size home and every climate!

THE AIR CONDITIONER BUILDERS ASKED FOR!

Hottest news at the 1953 Builders' Show—the new, all-new G-E Year-Round Air Conditioners are big, exciting news wherever new homes are being built. That's because this sparkling new unit was built to satisfy builders—and their customers! Builders have a wonderful new way to speed home sales, plus a unit with G-E dependability that cuts costs and saves space. Homeseekers get the perfect answer to their long-expressed desire for automatic summer cooling and winter heating in the entire home.

SMALLER THAN YOU'D BELIEVE POSSIBLE! No. 1 hit with builders is G-E's compactness. You save valuable dollars in floor space! Most popular size takes only 8.2 sq. ft. of floor space; all sizes, even the largest, are only 55" high and 30" deep. You get full capacity cooling and heating from a unit you can tuck away anywhere—closet, utility room, crawl space, garage, or basement. You'll save on installation and handling too! Units are light, can be carried through an ordinary door.

FOR ANY SIZE HOME—ANY CLIMATE! G. E.'s line features complete flexibility! There's a unit to fit your home as designed! No need to design homes around the unit. Over 190 models to choose from...choice of fuel—oil or gas...choice of power supply. Works well with conventional ducts, or get extra benefits with G-E's unique Air-Wall System. G-E engineering provides just what you need!

FOLKS ENJOY LIVING WITH A G-E! It's handsome, with an attractive two-tone finish that enhances the beauty of any decor. It's whisper-quiet—for the whole cooling system is hermetically sealed in steel and spring-mounted internally to eliminate vibration. It's fully automatic. At the flick of a finger, you get cool, dehumidified air through the entire home in summer. In winter, wonderful, economical warmth! You're assured of dependability with G. E. Every cooling mechanism is factory-sealed and backed by G. E.'s generous 5-year Protection Plan!

G. E. HELPS YOU MERCHANDISE YOUR HOMES! G. E. is interested not only in selling air conditioning, but in helping you sell your homes! We're ready to cooperate with you in local advertising, publicity, and model home promotion with the most complete line of home-selling aids in the business!

G. E. OFFERS A COMPLETE LINE of furnaces and boilers for oil and gas, warm air, hot water, steam or vapor—all designed to give economical comfort—all backed by G. E.'s reputation for dependability.

G-E Air-Wall System gives extra benefits! Perfect for both heating and cooling! Many construction savings possible with this pre-engineered, space-saving, small-duct system. Some registers deliver both cooling and heating, eliminating high-wall outlets. Air is spread upward—never blasted straight out. Blends beautifully with any setting, allows full freedom of furniture and drapery arrangement. No carpet-cutting required.

SEND FOR THE FACTS TODAY!

Now you can Choose AIR-KING Ventilating Fans...

for every purpose — in any size and price range

Wall switch controlled

low cost model AUTOMATIC SIDEWALL

Now available at the same price as pull chain models! Watertight, outside hood protects against ice, snow, wind and rain — also scientifically counter-balanced, exclusive "Flutter-Free" shutter that automatically opens and closes when fan starts and stops. Wall Switch controlled — single or three speed (extra). Unscrewing of center grill knob removes grill for easy cleaning. Motor and blade completely removable by merely loosening two wing nuts. In 8-inch and 10-inch models for walls 11" to 20" thick. Sparkling white or chrome finish. Full 5 year guarantee. WF8, WF10 and WF10C — priced as low as $27.55.

FOR CEILING OR SIDEWALL

- Only 3/4" deep overall
- Blower-type blade

Most attractive, powerful, versatile ceiling fan available. New blower-type pressure blade maintains high air exhaust volume in long ducts. Mounts in ceiling or sidewall. SAVES INSTALLATION TIME — comes fully wired and equipped. SAVES HANDLING TIME — shipped in easy handling, protective crate which won award in national competition. SAVES SERVICING TIME — only 2 parts to remove. SAVES SPACE — compact — rugged — beautiful.

ECONOMICAL HEAT AND HOT WATER — 3 sensitive controls

Venko permits you to feature greater comfort and lower operating cost. At the same time, it eliminates hours of costly labor by coming completely equipped for speedy installation with burner, circulator and controls in place ready to operate. Further, Venko's crate, designed to fit through a 30-inch door, enables one man to handle the entire unit. Don't bypass profit. Check and see how Venko can enlarge your sales picture.

NATIONALLY ADVERTISED

Built to fit the modern home

WATERFILM BOILERS, INC.
a division of L. O. KOVEN & BRO., INC.
154 Ogden Ave., Jersey City 7, N. J.
Plants: Jersey City, N. J. + Dover, N. J.

ECONOMICAL PULL CHAIN MODELS

Where wall switch is not desired, this powerful, economical pull chain model is highly efficient. Eliminates wall switch installation cost. Outer frame will never rust or warp fan housing. Grill easily removed by merely unscrewing center grill knob. Motor mounted on one bracket — motor and blade completely removable by loosening just two wing nuts. Available in 8" and 10" models. White enamel or chrome finish for walls 81/2" to 16" thick. Full 5 year guarantee. KF9N and KF10N — priced as low as $27.55.

Listed in Sweet's Catalog or ask your Wholesaler.

Complete catalog available by writing to
BERNS MFG. CORP. 3050 N. ROCKWELL ST., CHICAGO 18, ILL.
Two-pipe forced circulation hot water system

Two-pipe, forced circulation hot water systems of baseboard heating require separate supply and return mains. Each baseboard panel circuit is more or less the same length. Temperature and friction losses are roughly equal. Careful layout can hold the additional piping required by these systems to a minimum.

One-pipe forced circulation hot water system

One-pipe, single circuit, forced circulation hot water systems are ideal for small homes with low heat loss rate. One pipe, double circuit, forced circulation systems are usually required for larger dwellings. The separate circuits are supplied by a trunk which runs from the boiler to the supply main and has Btu carrying capacity equal to the combined circuits.

Two-pipe gravity-fed hot water system

Two-pipe, gravity fed, hot water systems require larger piping than forced circulation systems and operate at lower temperatures. These systems are normally vented to the atmosphere, and steam or vapor will form when the water reaches boiling point. As a result, there may be excessive water loss if the system is operated at above 200° F.
Glass Wall Panels

One of the newer developments in radiant heating has been the use of glass wall panels. The units consist of rectangular glass panels 1/4 inches thick with an aluminum grid fused to the back of the glass. The glass is almost impossible to break. An aluminum reflector is placed between the glass panel and the back of the mounting frame. Electricity passing through the grid raises the temperature of grid and glass panel to as high as 340 degrees F. Temperature differentials cause air to circulate through vents at the top and bottom of the panel, thus heating by a combination of convection and radiation. Thermostats provide automatic operation.

Tests indicate that such units, properly installed, will operate efficiently, and can be used economically where the kilowatt rate is two cents or less. In houses heated by other means, individual panels can be useful for spot-heating of bathrooms and similar locations. They are also useful in commercial installations.

Baseboard Heating

Baseboard heating, which furnishes heat both by radiation and convection, can be installed as a complete system or as an adjunct to other heating devices. A high percentage of heat from baseboard panels is distributed by radiation, which reduces rising warm air currents and the wall-streaking common with ordinary radiators.

Baseboard panels can be used effectively with one-pipe hot water systems, two-pipe forced hot water, two-pipe gravity hot water, and two-pipe steam systems. They cannot be used with one-pipe steam systems because of venting and condensation problems.

Baseboard panels come in three basic types, each of which requires that substantial wall areas be well insulated wherever the panels are placed. Convector types consist of finned tubing or pipe within a baseboard style metal shell. These may either be single or double core and the shell may have dampers built into it at grill or openings. Type R panels are cast iron, water backed, without fins. Type RC is cast iron but has fins attached to the back and slots at the top to aid in convection.

Some of the advantages of baseboard heating include fuel economy, lower temperature differentials, cleanliness, fitting into decorative schemes easily, added floor space, lower maintenance costs, fittings and piping easily accessible, and satisfactory comfort.

Air Conditioning

Air conditioning is the control of temperature and humidity; it also includes the control of air motion and distribution, and cleans the air. The simpler type of air conditioning for homes involves the use of attic fans of various types, including home cooling fans with plenum chamber (suction box), which cool the house in summer by providing proper ventilation. Ceiling ventilators are also in this class.

Winter air conditioners are furnaces which send forced air, heated, humidified and filtered clean to each room. Year-round air conditioners for homes are units which provide: (1) summer cooling, (2) dehumidification for summer temperatures; (3) winter heating; (4) humidification for winter temperatures; (5) air cleaning—a filtering out of dust, pollen, soot, and lint the year round; and (6) air circulation with ventilation—a draft-free flow of clean air, providing uniform temperatures.

Self-contained air conditioners are package units which give summer cooling, dehumidification, filtering (also air circulation and ventilation when installed with an outside connection). They are designed for individual rooms and can be used with duct work or installed directly in the space to be served. Self-contained units are also available which give year-round air conditioning for individual room areas, heating as well as cooling.

Several manufacturers now have available small capacity air conditioning units adaptable for installation in small, low-priced houses.

CLEARANCE IN INCHES REQUIRED FOR SAFETY. VENT PIPE AND SMOKE PIPE.

(From National Fire Protection Association and Underwriters.)

<table>
<thead>
<tr>
<th>TYPE OF ADJACENT MATERIAL</th>
<th>GAS FUEL</th>
<th>COAL OR OIL</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Furnace or Boiler</td>
<td>Water Heater — Space Heater</td>
</tr>
<tr>
<td></td>
<td>Metal vent</td>
<td>Type B vent</td>
</tr>
<tr>
<td>Exposed Woodwork</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Wood Lath and Plaster</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Incombustible Lath and Plaster</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Masonry or Concrete</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Courtesy Surface Combustion Corp.
For a refreshing shower with crystal-clear water and full-pressure...your home should have hot and cold water lines of Chase Copper Water Tube and Fittings.

Chase Copper Water Tube delivers a full flow of water. It can’t clog with rust...it resists corrosion. Whether you’re building a new home or replacing old pipe, use durable copper. For long life, at low cost, it’s a far better buy than rustable pipe.

Ask your architect, builder or plumbing contractor about Chase Copper Water Tube. It’s available through Chase plumbing and heating wholesalers served by 23 Chase warehouses across the nation. Chase Brass & Copper Co., Incorporated, Waterbury 20, Conn.

Chase
The Nation's Headquarters for BRASS & COPPER
subsidiary of KENNECOTT COPPER CORPORATION

ANOTHER CHASE QUALITY STORY

This compelling ad is one of a series telling the Chase quality story to 15,872,000 readers of the Saturday Evening Post and other national magazines. It sells your clients on the quality of your services when you recommend Chase Copper Water Tube and Fittings.
A BOILER CAN SELL OR UNSELL A WELL DESIGNED HOME

Check the advantages of these two Burnham leaders. You can specify either with complete assurance. Both are the product of 80 years of experience in making fine boilers.

PACEMAKER — Here's the oil-fired boiler that hit the jackpot of popularity because its high quality and fine performance belie its low competitive price. Its double combustion chamber and vertical flue travel over hundreds of heat grabbing fins, its large direct heating surface make it a highly efficient heating plant. It's made of cast iron for long, trouble-free service.

YELLO JACKET — The quality and performance of this all-fuel boiler are unbeatable. Its low fuel consumption is a direct result of its exclusive Burnham double combustion chamber design. That means long vertical, lateral and horizontal fire travel over hundreds of heat-hungry fins. Dependability, long life and safety are other factors that make this very popular boiler a heating plant you can be proud to sponsor. * Reg. U.S. Pat. Off.

Both boilers available with attractive two-tone flush or extended jackets. Both can be equipped with all copper coils for your year round domestic hot water supply, either tankless or storage type. Mail the coupon for full details. Rated in accordance with A.O.S.P.H. rating and testing code.

BURNHAM CORPORATION
Irvington, New York

FIRST IN THE MANUFACTURE OF BASEBOARD HEATING

Heating commercial buildings requires consideration of the size and type of building, its functions, space requirements and limitations, installation costs and maintenance costs, as well as operating problems. For any small commercial structure, the heating plant should be calculated to cost roughly 10 per cent of the total cost of the building; otherwise, heating may prove inadequate.

The simplest structure to be heated is the small monitor building occupied by a neighborhood service business. Floor space is usually at a premium, and heating must be economical and not take up space. For this purpose, floor furnaces, unit heaters, or radiant panel constructions have proved desirable.

Another type of one-story commercial building has its space divided typically into showrooms, offices, and workshops—for example, commercial garages. Direct-fired unit heaters, or combinations of unit heaters with self-fired radiators can be used. Forced air heating will give satisfactory results, as will central steam and hot water systems with radiators or convectors. Radiant panels installed in the floors will also give good service.

The third main type of small commercial building is the multi-story multiple purpose building with first floor used for offices or warehouse space, with offices or living quarters above. This type often encounters the problem of different tenants trying to regulate heat in their own quarters by turning off radiators, partially closing them, opening windows and wasting heat. Two-pipe steam and both one and two-pipe hot water systems usually prove most effective.
ALL-YEAR AIR CONDITIONER

Heat is provided for the absorption refrigeration unit in the form of steam at atmospheric pressure, produced by the compact steam generator. Refrigeration is produced by the "absorption" principle utilizing heat as the motivating force. Dehumidification is accomplished by passing the air stream over the refrigerated coil surface which is sufficiently cold to extract moisture simultaneously with dry-bulb reduction. Surface dehumidification offers positive moisture extraction in balanced relationship with cooling capacity. The entire refrigeration unit operates under a vacuum at all times. The absolute pressure within the generator and condenser is somewhat higher than in the evaporator and absorber. Simplicity of operation and control are the fundamental features which this type of system embodies. There are no moving parts within the refrigeration unit.

Murray presents its new DELUXE LINE

THE WINNER SETS THE PACE

A step ahead of the entire fan field in anticipating the demand of the booming fan market, Murray announces the addition of its new and exclusive DeLUXE models to the line of attic and industrial fans.

- Only Murray's DeLUXE line offers install-and-forget-em advantage—sealed, lifetime-lubricated ball bearings in both fan and motor.

- Only Murray's DeLUXE line offers a full 10-year guarantee.

WRITE FOR NEW CATALOGUE

New catalogue on complete line of DELUXE and Standard industrial and attic fans and window fan line

Mainsless perimeter heating (series loop) system in conventional two-story house—piping is held to a minimum

Mainsless perimeter heating with series loop system eliminates the basement main and is particularly suitable for concrete slab construction of basementless homes, but is equally useful in conventional small structures. Basement main is eliminated by connecting baseboard panels in series so that there is no need for piping imbedded in the concrete slab. When additional radiators or convectors are used in conjunction with this system, they are either connected in series with the baseboard panels or are connected to the "main" by two run outs. Manufacturer's instructions for this arrangement should be followed carefully.
Give your homes more sell!

Builders tell us that prospects frequently judge a house by a single modern, efficient feature. A BullDog Pushmatic Electri-Center—in which automatic push-buttons replace old-fashioned fuses—is an important feature that will help swing many a sale for you.

Your customers are quick to appreciate the safe, simple-to-operate electrical protection of BullDog Electri-Centers. They're impressed when you say, "No more fiddling with fuses!" A simple push of a button restores service after a short or overload. BullDog Electri-Centers can be installed anywhere; can be painted to match any color scheme.

SCHEMATIC ELECTRICAL DISTRIBUTION system showing typical location of control centers near centers of load or power use. Such arrangement makes branch circuits shorter, gives reduced voltage drop, and more efficient operation of electrical equipment at lower expense. Easier installation makes lower initial cost possible.

**SERVICE ENTRANCE RECOMMENDATIONS**

<table>
<thead>
<tr>
<th>Service Entrance Rent &amp; Equipment in Amperes</th>
<th>Circuit Breaker</th>
<th>Switch</th>
<th>Fuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1000 Square Foot</td>
<td>6</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>1000 to 2000</td>
<td>4</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>2000 to 4000</td>
<td>1</td>
<td>90</td>
<td>80</td>
</tr>
</tbody>
</table>

Above recommendations are based on single-wire service voltage between 110/220 and 120/240 volts.

**DISTRIBUTION CENTER, CIRCUIT RECOMMENDATIONS**

<table>
<thead>
<tr>
<th>Circuit Purpose</th>
<th>Size of Conductor</th>
<th>Rating of Protective Device</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>J14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Convenience</td>
<td>J14</td>
<td>15</td>
<td></td>
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<tr>
<td>Kitchen</td>
<td>J14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Laundry</td>
<td>J12</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>J12</td>
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</tr>
<tr>
<td>Water</td>
<td>J12</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Heater</td>
<td>J14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Clothes</td>
<td>J10</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Dryer</td>
<td>J10</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Heating Unit</td>
<td>J14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Dishwasher &amp; Waste</td>
<td>J14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Home Freezer</td>
<td>J12</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Work Shop</td>
<td>J12</td>
<td>20</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>REMARKS:</td>
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</table>

**CONCEALED LIGHTING**

Cornice shield shown above may be of various materials, in design keeping with the architecture and decorative theme of the room. It should be from 6" to 10" deep, run the length of window or wall, with returns at least 6" in length from wall to inner surface of shield.

**CEILING LINE**

9" to 11" SHIELD

FLAT WHITE FINISH

Cornice shield shown above may be of various materials, in design keeping with the architecture and decorative theme of the room. It should be from 6" to 10" deep, run the length of window or wall, with returns at least 6" in length from wall to inner surface of shield.

Modern design in two-door chimes shows a few of many possibilities in selection of chimes to fit home decoration theme. Brass finish tubes provide different tone combinations. 4-tube model at right serves three doors. has volume control and electric clock.

**PLAN 1**

RANCH TYPE HOUSE

**DOOR CHIMES**

Modern design in two-door chimes shows a few of many possibilities in selection of chimes to fit home decoration theme. Brass finish tubes provide different tone combinations. 4-tube model at right serves three doors. has volume control and electric clock.
SALES SPARKER IDEAS with "PLUG-IN" STRIP

LIVING ROOM—Type CF-3 (switch controlled) "Plug-in" Strip provides a complete baseboard of outlets spaced 18" apart. Every outlet provides dual service—switch controlled at doorways or constant service. Allows absolute freedom for furniture rearrangements.

KITCHEN—Type CF 2 (constant service) "Plug-in" Strip provides a spread of outlets every 6" along the kitchen work centers. Every appliance has its own plug-in.

BED ROOM—An important room for electrical living. "Plug-In" Strip behind the bed provides plenty of outlets for lamps, radios, clocks and heating pads.

TIME-SAVER TIPS ON "PLUG-IN" STRIP INSTALLATION

Instead of using Fill-in Strip to piece out run, a cut-off receptacle section from another point on the job was cut to fit and jumpered in.

Improvised outlet "masker" keeps point from plugs. (Made on the job by soldering copper rod handle on to a cut out piece of scrap tin.)

To meet this acute angle situation the base was cut back as shown and the extra capping bent squarely over for an end closure. Conductors were cut back and wire nuts applied.

Wood footer is not nailed into position until center feed base is secured and "Plug-In" Strip with clips is slid into position. This eliminates difficult driving of clips into a tightly secured footer. Finally, footer is toe nailed, drawing the whole assembly into a tight and perfectly aligned trim.

Tell your electrical contractor you want "Plug-In" Strip. It costs no more than ordinary wiring, but pays off in more sales.

INSTALLING THE STRIP AND FITTINGS

Connect circuit feed, with suitable connector, to base of Center Feed Junction Box and secure base in position. Install Elbow Bases and any necessary bridging End Junction Boxes.

EVERYTHING IN WIRING POINTS TO

National Electric Products

PITTSBURGH, PA.

3 Plants • 7 Warehouses • 34 Sales Offices

AMERICAN BUILDER
Recommended wiring and diagram by National Adequate Wiring Bureau

**PLAN 1**
RANCH TYPE HOUSE

Recommended Service: 3—#2 wires with 100 amp. entrance equipment. Basement wiring includes 5 lighting outlets, 1 convenience outlet near furnace, and 1 furnace outlet on separate circuit. Branch circuits include: 3 general purpose #12 2-wire circuits for lights and conv. outlets in living rooms, bedrooms, etc.; 2 appliance lines for conv. outlets only in kitchen, dining room, #12 2-wire; 4 individual circuits #6 3-wire for range, #10 3-wire to dryer, #12 2-wire to washer and furnace; 3 spare terminations for expansion later.

**PLAN 2**
RANCH TYPE HOUSE

Recommended Service: 3—#2 wires with 100 amp. entrance equipment. Branch circuits include: 3 general purpose circuits #12 3-wire for lights and conv. outlets in living room, bedrooms; 2 appliance lines for conv. outlets only in kitchen and dining area. #12 2-wire; 5 individual circuits. #6 3-wire to range, #10 3-wire to dryer, #12 2-wire to washer and furnace, water heater per utility rules; 3 spare terminations for expansion of system.
THE KITCHEN is one of the most important work areas to be lighted in a house. All work surfaces should have a shadow-free high value of illumination. The use of tubes in coves, troughs or behind concealed strips injects a newness in workshops of the home that even a coat of paint could not have attained. The central lighting fixture will give general illumination, but additional light is necessary over sink, stove, or work surfaces. In the modern kitchen, as in no other part of the home, is found a variety of electrical appliances, wiring devices and electrical outlets. Consequently, more fluorescent lighting has been used in kitchens than in any other room. Good utilization of the long, slender characteristics of fluorescent lighting is evident in this planned kitchen. According to recent surveys, better than seven per cent of the nation's kitchens today are lighted by fluorescent tubes, and over 65 per cent of the women questioned expressed a preference for this type of lighting. Located over the sink is a recessed fluorescent reflector with glass cover and using two 30-watt fluorescent tubes.

BATHROOM: Recessed vertical fluorescent units are good in this bathroom because the mirror is mounted flush with the wall. Where cabinets cause the mirror to extend from the wall an inch or more, surface mounted units on each side or around the mirror are more appropriate. An R5 sunlamp controlled by a wall switch provides sunrays. Vapor proof ceiling fixtures are installed in tub and shower areas. They may be recessed or surface mounted units matching a larger center ceiling unit. Unless the bathroom is less than 60 square feet, a center ceiling fixture should be used.

Easier, Faster, Cheaper to install in any building — new or old! Plenty of electrical outlets is a feature that ranks right at the top of desirable points in any building — more electrical devices come into use every day and the need for outlets is greater! PLUGMOLD 2000 provides a double outlet every 30 inches, in a continuous run. Closer spacings are available wherever needed. Plugmold is readily installed in any building — factories, offices, stores, schools, hospitals, residences — it is surface mounted, which means no tearing out of floors or walls in existing buildings. Plugmold 2000 is also available in 3-foot & 6-foot factory-wired sections. Plugmold makes any building a better building ... get the full Plugmold story and the new free Plugmold 2000 book ... write today!

KOHLER ELECTRIC PLANTS
Independent Source of Electricity

Save time and cost

Move jobs faster with electricity wherever the work is done — save expense and bother of temporary power line hook-ups. Portable, low-cost model operates saws, drills, grinders, pipe threaders and cutters, other tools. Develops 1500 watts AC. Engineered throughout by Kohler. Rubber-tired two-wheel cart available. Other sizes 500 watts to 30 KW. Write for folder 14-K.

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

KOHLER, Wisconsin. Established 1873

THE WIREMOLD CO.
Hartford 10, Connecticut

APRIL 1953

295
Valance installations above windows should extend at least 4" beyond windows at each end. Farther if heavy draperies are also used. Wall-to-wall use as shown is becoming increasingly popular, especially in combination with drapery effects. Standard decorative valance panels are available in both traditional and contemporary designs, with matching traverse and curtain rods. Installation is simple: mount on wall and plug into nearest electric outlet.

distribution center...

Twelve-circuit distribution center shown above is recommended for use in larger homes. Panels are split bus type with a main to control the lighting circuits. Above the main, 120/240 V AC units are generally used for range, dryer, and similar heavy appliance applications. Panel has space for additional circuits as electric needs grow. Unused circuits may be covered with filler plates until required.

American Builder
Planned Lighting

Lighting is an important consideration while the design of the home is in the blueprint stage. The placement of lighting sources where particular functions are being performed may satisfy a lighting problem in quantity but not quality. Provisions should be made for flexible schemes to prevent excessive contrasts of brightness for good visibility and eye comfort. Architects and designers realize the value of lighting as a medium of design and are using it for decorative purposes as well as utility.

One of the strongest selling features of a new home is often its kitchen. Modern equipment and well-planned designs frequently influence the decisions of buyers who are looking for time and effort-saving advantages in their new homes. Growing public interest in still another modern, energy-saving kitchen aid, planned lighting, when lighting equipment is chosen and installed according to new tested recipes, offers the builder new opportunities to increase saleability with a minimum of effort and expense.

Present widespread public interest in planned lighting has aroused many builders to include these advantages of modern lighting techniques in demonstration homes.

In surveys based on visitors’ preference, ballots solicited at builders’ demonstration showings in both Dayton and Cleveland, Ohio, Kitchens with planned lighting were outranked only by lighted valances in living-dining areas. As one builder observed, once people have seen and experienced a kitchen with planned lighting, they realize that this is one of the advantages they can’t afford to overlook in choosing a home.

To create a bright, efficient, streamlined well-lighted kitchen, lighting must be functionally arranged to assure desirable amounts of light for kitchen tasks.
Laundries can be light, pleasant work areas. Simple lighting units located over working areas for good visibility will appeal to most women. The lighting in this laundry will make tasks easier, in increase efficiency and reduce nervous fatigue usually associated with washday. It will also cut out scorch marks so often unseen until the article is used under day-light. Ironing scorches, burns and spots are readily detected under light from the daylight fluorescent lamp. Good lighting, therefore, becomes a gain and an economy when used in laundries. Generous amounts of light are provided by using an industrial type two-lamp fluorescent reflector (two 40-watt daylight tubes) in the ceiling. Additional fluorescent tubes are located under the cabinets for illuminating the tub and washing machine area. Well-planned laundries, such as this one, are important features in the new houses of today.

Fluorescent indirect lighting layout for modern store building provides for 40 foot-candles average intensity in sales area and 130 foot-candles in show windows. Marquee and windows are planned to have incandescent lighting, recessed flush, controlled by a time clock switch. Units for marquee and main store areas are of wide distribution type; show-window fixtures give concentrated distribution. All boxes installed prior to plastering or finishing wall surface. On plan: “A”—300W; “B”—300W; “C”—100W; “D”—2, 40W.

Alarm system hook-ups...

A.C. Closed Contact Burglar Alarm System

Using lock switch on front door and main switch to cut out all closed contacts...

Open Circuit System

Two burglar alarm wiring layouts suggested for use with tin foil ribbon for protection of windows and doors. Normally, the foil ribbon is placed around glass as a border and soldered at each end to wires to form part of circuit. With closed circuit, breakage of glass breaks ribbon and opens circuit. Best secured with "liquid glass" and coated with shellac.
THE requirements for adequate plumbing in a house will vary. A two or three person family can get along very well with one bathroom. Larger families, or people who do much entertaining, will find that two baths, or a bath and powder room combination are not merely desirable but necessary.

Minimum needs require a bathroom with tub and shower facilities, a kitchen sink, laundry facilities, and at least one outside hose connection. Only in the lowest-cost homes should the kitchen sink and laundry facilities be combined, or should the tub and shower combination be replaced by a shower only.

In one-bathroom houses, a good arrangement is to place the tub in one compartment and the toilet and lavatory in an adjoining one, thus permitting double use of the room.

(Continued on page 302)

REPLACING OR INSTALLING NEW WATER SERVICES

Method shown suggests excavation at the main with old service disconnected. Second excavation back of curb makes place for pipe jack to operate. New pipe service is attached to old line with adapter, and reverse action of jack pulls out old line and installs new in one operation. Old pipe is cut off in short lengths as it is drawn through.

FOR MORE INFORMATION ON PRODUCTS ADVERTISED AND DESCRIBED IN THIS CHAPTER PLEASE USE ONE OF THE PREPARED INQUIRY POSTCARDS IN THIS ISSUE.
Bathtubs - Lavatories - Sinks - Closets

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FINEST HOMES
AND APARTMENTS

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BATHTUBS
5-foot recess tubs of porcelain-on-steel each with an integral wall guard flange on three sides that prevents water leaks between the tub and the wall.
Also a 42” “Junior” recess tub that has great advantages as a shower receptor.
All AllianceWare bathtubs are available in white and five colors.

LAVATORIES
Wall-hung shelf back lavatory of porcelain-on-steel with or without overflow.
Flat rim lavatory with deep and generous bowl for tile or linoleum installations.
All AllianceWare lavatories are available in white and five colors.

CLOSETS
Close-coupled combinations — one a reverse trap, the other a wash down — the types most popular in today's construction. Each style assures positive, quick flushing.
Available in white and five colors.

DELUXE SINKS
Porcelain-on-steel formed from 14 gauge. These sinks have double bowls or single bowls. Sliding drain boards are optional on some models. May be mounted on standard sink cabinets. Several models may be installed on legs without cabinet.

FLAT-RIM SINKS
Single bowl or double bowl, with and without faucet ledge. Also sink and tray combinations with and without faucet ledge. The design of these sinks permits a continuous tile or linoleum drainboard to run flush with the edges of the rims.

Write for the complete AllianceWare catalog of detailed specifications and installation diagrams.

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Bathtubs • Lavatories • Closets • Sinks
Builders are good businessmen. They are very sensitive to what the public wants. So when you find them including one particular type of equipment all over the country—in large homes and small—you can be pretty sure it's what people want. The builder of this house, for example—Mr. Al La Pierre of Seattle, Wash.—says: "Completeness is the key to a full life in Season-Master homes, and to make them complete I include Electric Water Heaters."

Here's why: Automatic hot water. Cleanliness of operation. Economy of operation, due to short hot water lines and fully insulated tank. Easy installation, because there's no flue or vent. The modern water heater for the modern house—of course, it's Electric!

This attractive Season-Master model home (in the $12,000 price class) is in Mountlake Terrace, Seattle, Washington. Its kitchen is designed for all-electric equipment. The builder, Mr. La Pierre, says, "Electric Water Heaters are an important feature of a well-planned house."
Installation Economies

For most economical installation, rooms having plumbing should be placed close together to avoid long runs of pipe. In a one-story house, the bathroom can be placed next to the kitchen or utility room. In a two-story house, the bath can be placed over the powder room, and the kitchen over the laundry and basement toilet.

The popular ranch-type of house commonly has the kitchen and utility room at one end or at the center of the house, and the bath at the other end. In such cases, kitchen and utility room should have a common wall, as should the bath and powder room.

Water Supplies

The water-supply system should deliver water to the fixtures at the rate it is needed. Water pressure, pipe size, the number of fixtures in use at any one time—all are factors in determining the water needed.

Water is brought into the house from the city main or well, in under-

(Continued on page 307)
wall cabinet installation . . .

Side cabinets in this bathroom wall cabinet open to provide "vanity" mirror arrangement. Plate glass mirrors hang on full length hinges. Each side cabinet has three adjustable glass shelves. Cabinet is made to fit conventional studs 16" o.c.

a space-saving arrangement . . .

Economical use of space is combined in this bathroom arrangement with full utilization of modern glass and ceramic materials.

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DELCO C-12 WELLMASTER SHALLOW WELL PUMP

Fully assembled with automatic controls, ready to go. Self-contained; 225 ghp capacity—ideal for small farm, suburban home, cottage, summer camp, or use as booster for present system. 13-gallon galvanized tank, 1/4 hp Delco Rigidframe Motor.

DELCO CONVERTIBLE JET PUMP

Can be used in either deep or shallow well installations... can be converted from one to the other later if water table changes. No pulleys, belts, or wheels . . . only one moving part. 1/2, 3/4, or 1 hp capacities up to 1,620 ghp. Depths of 120 feet.

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NEW APPROACH
to the
MEDICINE CABINET!...
PUTS
EXTRA SELL
INTO YOUR HOMES!

The New...
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TU-VUE
MEDICINE
CABINET
(Designed by Otnas & LoBarre)

PUT A "FEATURE"
IN THE BATHROOM!

Home buyers go big for this new-idea medicine cabinet... it opens upward, has a locking poison shelf. Write for picture folder to see how mother and daughter find new conveniences as "bathroom vanity" and full-length view... for the men "close-up" enlarged reflection for shaving... better bathroom safety 2-ways for children. Completely counterbalanced by spring tape for easy operation. New, unique, extra useful... and the greatest step forward in bathroom medicine cabinets in years! Priced for all homes. Folder gives installation data. Get it today!

TU-VUE MEDICINE CABINET CO.
Division of Otnas & LoBarre
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bath tub installation details...

One source of trouble with recessed or built-in tubs is caused by shrinkage in building materials and settling of bathroom floor. This separates edges of tub from wall, permitting water seepage. Where wood frame construction is used, it is advisable to install tub hangers in the wall to support the tub on the wall structure itself and prevent this separation.

SUPPORT RIM ON METAL HANGERS
OR WOOD BLOCKS

BATH TUB SUPPORT

In installing bath tub, rough in according to manufacturer's specifications, locating vertical supports for back of tub as shown. FHA recommends vertical supports because of minimum shrinkage with the grain of the wood. Spike horizontal members to studs and drop tub in place after making sure it will fit. Be sure top of tub is level before completing plumbing connections. Cover tub to prevent damage until plastering and painting have been completed.
This recessed bathroom cabinet is made to fit standard 2"x4" studding, or deeper. Usual height of cabinet from floor is 63" from floor to center of mirror. Rough opening should be approximately 9/16" larger in width and height to allow for adjustments. Outer flange will lap wall opening when installation is complete.

House wiring should end at top center of opening. Knockouts are provided in top of junction box to facilitate connecting to house wires. Color coding corresponds to normal house wiring codes and should be followed.

Enamelled iron laundry tray has round corners to protect fabrics, swing-spout mixer faucet, provides attractive as well as efficient laundry facility. Designed for building into counters or cabinets, tray measures 24"x21" length and width, with 13" deep basin. Accessory metal frame makes counter installation easy.

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Patented Safety Bottom bathtub, reducing accident hazard.
Unnecessary dead weight eliminated from tub.
Tiling-in flange—leak-proof seal, tub to wall.
Under-tub framework—firmly positions tub, independent of wall support.
Precision brass fittings engineered for minimum installation cost and long life.
Quick opening valves on lavatory fittings.
Lavatories with tarnish-proof chromium plated legs and towel bars.
Deeper lavatory bowls for greater water capacity.
Uniform tub dimensions, insuring exact fit.
Vertical front panel edges on tub, eliminating need for cutting and fitting wall tile.
Water closets with anti-syphon ball cock of proved quality.
Twin concealed front overflows and anti-splash rim on vitreous china lavatories.
Integral soap dish on lavatory.
Quiet-flush, positive action water closets.
Elongated syphon-jet closet bowl for greater hygiene.
Four non-fading pastel colors at prices only slightly higher than white.
Attractive contours, smart styling, functional design for durable service.

Insist on all these—they mean highest quality!
an extra bath in the garage...

Suggested here is utilization of the far end of the garage for a second bath, providing a shower cabinet, toilet, lavatory, and small storage closet. This location makes for convenient clean up of children as they come in from play, and for adults who come in from the garden or from other chores and need to clean up before tracking up the house. Shower walls are bonderized galvanized steel; receptor has slip preventing floor surface. It may be installed on special base frame to contain trap and waste pipe, or it may set flush with finish floor.

(Continued from page 302)

ground pipes, to prevent freezing and to protect the pipes. A 1-inch galvanized or lead pipe, or 3/4-inch to 1-inch copper tubing will usually provide adequate water under normal city pressure of 30-50 lbs. In cities, a "roundway" will be provided at the property line, at which the water may be shut off by a key passing down through a metal or fibre tube extending up to ground level. A shut-off valve must also be provided inside the foundation wall or in the utility room. The meter, if used, is installed at this point.

Access panels should be provided at the supply end of bathtubs, and other valves should be located in relatively accessible locations in case repairs are necessary. Air chambers should be provided for all fixtures to prevent "water hammer" when valves are suddenly closed. All piping should be at a slight pitch to permit draining down of the system to a low point if ever necessary.

Drainage System

Water is forced through the supply pipes by pressure, but drainage of wastes is by gravity. Therefore, all...
The installation of a booster pump can be crucial in ensuring proper water pressure at your home. A booster water system is particularly useful when city water pressure is inadequate or fluctuates during the day. Here are some key considerations and tips for installing a booster pump:

1. **Placement of Booster Pump**: The booster pump should be placed before the pressure regulator or control to increase water pressure. It should be installed in a location that allows easy access for maintenance and inspection.

2. **Selection of Booster Pump**: Choose a booster pump that is suitable for your specific water flow and pressure needs. Consider the flow rate, head pressure required, and the maximum flow rate your system can handle.

3. **Pressure Switch Setting**: The pressure switch setting should be adjusted to match the pressure levels provided by your city mains and the desired pressure at your home. This setting helps prevent overloading the water system.

4. **Cautionary Notes**: Always operate the booster pump within its specified pressure range to avoid damage. Ensure that the pump is capable of handling the incoming water pressure.

5. **Flow Through the System**: In a two-story house, the booster pump should be installed to maintain pressure throughout the house, regardless of pressure switch settings.

6. **Pressure Switch Settings**: Pressure switches must be set accurately to prevent overloading the water system. The setting of the pressure switch should correspond to the maximum and minimum pressures in the system.

7. **City Water Pressure**: If the city water pressure is inadequate, a booster pump can be used to increase the pressure at your home. Ensure that the booster pump is capable of handling the increased flow rate.

8. **Overflow Prevention**: To prevent overflow from the booster pump, install an overflow device or a check valve to prevent water from escaping the system.

9. **Regular Maintenance**: Regular maintenance of the booster pump is essential to ensure its longevity and efficiency. Check the pump for any signs of wear or tear and replace parts as necessary.

10. **Water Quality Considerations**: If you have harder water, consider using a water softener in conjunction with the booster pump to ensure optimal performance.

By following these guidelines, you can effectively install a booster pump to ensure your home has sufficient water pressure.
There's a reason why National Steel Cabinets are leaders. Architects and home builders know they are getting quality at a reasonable cost and each cabinet model has individual features that make it attractive for any home—whether it is the beautiful Ambassador Model 1000—or the Budgeteer Model 400.

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April 1953

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with ADJUSTO COMBINATION TUB AND SHOWER FIXTURE

for modern bathrooms

ADJUSTO does the same thing for the modern bath that the swinging spout faucet does for the kitchen sink—one fixture mixes hot and cold water for full stream or fine spray. Saves time and money in installation! Adds finger-tip convenience!

ADJUSTO can be installed after tiling and decorating is completed—eliminating danger of theft or damage.

Only one set of valves—no danger of back siphonage.

ADJUSTO gives a modern look to bathrooms—definitely helps sell houses.

SWING-DOWN FOR:
Standing Showers
Without Bathing Cap
Sitting Showers
Easy Shampooing
... and the children love it

ADD-ADJUSTO

It's easy to modernize existing fixtures into tub and shower with ADD-ADJUSTO. Fits any standard tub filler.

Manufacturers of Famous MILWAUKEE Fixtures and Brass Goods

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323 E. Reservoir Avenue Milwaukee 12, Wisconsin

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323 E. Reservoir Avenue Milwaukee 12, Wisconsin
Laundry and utility room layout above suggests the use of gas-fired, fully automatic water heater, a storage type unit that is fast heating and well insulated. A draft hood prevents drafts or excessive chimney draft. The double compartment enameled cast iron laundry tray provides a generous washing and rinsing area.

Laundry and utility room...
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**Tub Enclosure**

GLAMOROUS! Bathroom Beauty that fits any recessed tub!
PRE-PACKAGED! It's EASY to install in less than half an hour!
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**APRIL 1953**
two shower door installations . . .

Glass blocks make attractive, durable, and easily cleaned walls for custom-built shower installation with glass shower door. Waterproof cement and careful joining of blocks at top of receptor will insure seepage-proof shower.

Plan view of shower door with exploded drawing showing parts involved in door installation shows how such an enclosure eliminates splatters, drips, and moisture seepage. Rendering shows how bath in Plan Four master bedroom provides privacy and convenience for two persons with glass partition as well as glass shower door.

Cabinet details . . .

Plan view, section, and front elevation of deluxe bathroom wall cabinet shows cabinet that will fit into normal framing of 2"x4" studs on 16" centers. Interior light fixture, razor drop, electric outlet, continuous-hinged mirror, and glass shelving make this cabinet an attractive component of any modern home.

Adequate supply of pure water; adequate piping of suitable materials; fixtures of suitable materials and correct design; drainage system of good materials and design, properly installed to prevent clogging; provision for cleaning drainage system when needed; proper traps and venting of system; adequate sewers or sewage disposal system; proper inspection and testing of new installations; protection against contamination by back siphonage and against back flow of sewage; and adequate ventilation.
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- BE READY TO MEET THE DEMAND! Have Gulfspary shower doors and tub enclosures readily available to your customers. Gulfspary is the "extra" they're looking for.
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BATH ENCLOSURE

A low cost feature that adds "sell" to any home you build!
The Cascade is made of lustrous, jewel-like Plexiglas, successor to glass where appearance and safety are paramount... artistically fluted by FIAT to add sparkling splendor to any bathroom. The two rigid panels glide smoothly in aluminum track at the touch of a fingertip. Comes in Crystal Clear, Petal Pink, and Glamor Gold; fits any 5- or 3½-foot recessed tub.
Every home planned for a tub shower needs this beautiful bathroom improvement. Every woman will welcome the Cascade because it eliminates the old fashioned, floppy wet curtain and really keeps water off the floor.

See Sweet's "Fi" in Architect's, "Fi" in Builder's—write for literature and new low prices.

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Long Island City 1, New York * Los Angeles 33, California
In Canada: Porcelain and Metal Products, Ltd., Orillia, Ontario

APRIL 1953
Bathroom Fixtures

Bathtubs are made either of cast iron or pressed steel, having a hard coating of porcelain enamel which is resistant to abrasion and corrosion. Present style is for an apron tub, having a skirt extending to the floor on all exposed sides and end. A roll rim, single-shell type of tub is made for economy installations, and is a great improvement over the old footed tubs. A great variety of styles are made; corner, recess, square, with or without seats, and either white or numerous colors. The 5-foot length of tub is usual, although 4½- and 5½-foot tubs are made. The square tubs occupy a 4-foot square space, and solve many otherwise difficult space problems. A special receptor type of tub permits either showers or sit-down baths and occupies a space only 42 by 31 inches. When used with a corner lavatory, bathrooms can be fitted into a space as small as 6 by 5 feet. However, most building codes specify minimum room areas, including bathrooms.

Lavatories

Lavatories are of two general types: the flat-top style, having the faucets on the same level as the rim of the fixture; and the shelf-back model, having the supply valves on an inclined or vertical ledge. The flat-top style is most economical. Set about two inches away from the wall, it permits cleaning behind it, but the wall should be waterproofed against plaster damage. A variation has the faucets at rim level, but a straight back fitting against the wall for protection.

A new development in bathroom styling is the countertop lavatory. These are designed to fit into a counter top of linoleum, glass, laminated plastic, or other materials. Such an installation makes possible combining two lavatories in one counter top for greater utility; also, a dressing table may be added. Extra storage space or hampers below the counter are also a possibility.

Toilets

Three major types of water closets are in common use; the siphon jet, the reverse trap, and the washdown. The washdown costs the least and the siphon jet is the most expensive. The latter is preferred because it has a deeper water seal, a larger trapway, a more positive flushing action, and a much larger water area. The modern styling of siphon jet bowls adds to the appearance of the bathroom in which they are installed.
shower receptor installation...  

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These are lifetime products — no costly replacements.

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Single, double and triple flat rim bowls in assorted sizes can be used with all types of tops — formica tile, linoleum, plastic or stainless steel. Hard wearing sink tops — designed for homes and apartments. Solid stainless steel or stainless steel over ¼” plywood base (Pat.)

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40th Avenue and 21st Street, Long Island City 1, N.Y.
Branch offices: 21 E. Van Buren St., Chicago, Ill.; 420 Market St., San Francisco, Calif.
Any of these types of closet bowls may be used with any type of tank: one-piece, close coupled, or regular wall-hung tanks. The washdown closet, for economy, is made only with wall-hung tanks, but the siphon jet and reverse flush bowls may be made also with close coupled or integral tanks. The close coupled tank generally sets away from the wall and is bolted to the bowl. The integral tank is cast in one piece with the bowl.

Showers

An overhead shower will almost always be installed over the tub. The water and drain are there, and the additional cost of a diverter tub filler and shower head are negligible compared to the convenience of a built-in shower.

Shower valves may be part of the tub installation, where the diverter mixer faucet also controls the shower; a simple two-valve set-up leading to the shower head; a mixing valve, where one valve controls both the hot and cold water, or a thermostatic unit incorporating a mixing valve plus automatic temperature adjustment when the flow of either hot or cold water is changed by water demand elsewhere in the house.

Cabinets and Accessories

The medicine cabinet over the lavatory, standard for years, has developed into a wide variety of bathroom storage units. Cabinets for toilet articles are larger, have bigger and better mirrors, and are also usually fitted with lights for shaving or makeup. Both wood and metal constructions are used. Built-in holders for tooth brushes, shaving accessories and razor blade disposers are common, and one unit even features a locked compartment for dangerous medicines in households having small children.

Kitchen and Utility Fixtures—Sinks

Modern sinks range in size generally from 42 to 96 inches in length, and have more than ample workroom if their size is chosen according to the family’s needs. It is desirable to install the two-drainboard sink if space permits. The double bowl sink, having separate compartments for dishwashing and rinsing is preferred by homemakers.

Drainboard sinks may be obtained in widths of 42, 48, 54, 60, and 66 inches. For sinks built into a counter top, a 24 by 21-inch bowl is about minimum, while a 30 by 21-inch size gives better work room. Double-compartment sinks for counter top installation are in 32 by 21-inch and 42 by 21-inch sizes. Cabinet bases of wood or metal can be had for sink installations in lengths of from 42 up to 144 inches. Longer units include cupboards or drawers in addition to under-sink compartments. Special brackets and drip mouldings are available for mounting sink bowl units in any type of custom-built counter top.

Laundry Trays

Although there are available combination sink and laundry tray units which have two compartments, one for dishwashing and a larger one for laundry use, these are recommended only for reasons of greatest economy or space saving. Typically, a laundry tray will be provided in the basement or utility room, together with water heater and water softener in localities having hard water conditions.

Laundry trays are made of enameled cast iron, earthenware, or cement composition. One, two, or three compartments are supplied, with single compartment units being especially suited to installations in conjunction with automatic units.

Water Softeners

Water softener units are a necessity in many areas. Any water having more than three grains of mineral salts per gallon is considered hard enough to require softening. A softener is an added sales feature for a home, and will soon pay for itself in savings.

Hot Water Heaters

Domestic hot water may be heated either by units built into the house heating system, or by separate gas, electric, coal, or oil heating units.

Electric heaters have a relatively large storage capacity. The operating cycle assumes that water will be heated in the storage tank at night, during the time of low power demand on the utility company’s facilities. The hot water is then held in storage in a well-insulated tank for the next day’s use, and enables an attractive rate to be offered for the electricity used. Such units should be of ample capacity, so that more than average use of hot water will not require the use of electricity during the day at higher rates.

Gas hot-water heaters are supplied in sizes to handle the needs of all sizes of families, and with different tank and insulating materials. A 30-40 gallon storage capacity is suitable for the average family of three or four. Tanks are of galvanized steel, porcelain-lined steel, or monel metal, and are priced and have greatest durability in that order. Insulating material is generally glass wool or fiberglass.
Prefabs...go up in a hurry...

Shop operations in the production of panelized construction usually comprise (1) assembly of framework; (2) installation of necessary wiring, framing for fixtures, ductwork, water pipes and similar equipment; (3) attachment of the framing of window and door openings; (4) fixing insulation and vapor barriers in place; (5) attachment of cover materials and window and door trim; and (6) painting and other finishing.

Prefabrication offers today's builders an opportunity for profit, with a choice between construction of "complete" homes prebuilt in the factory, and the use of prefabricated structural members to be assembled on the site in conjunction with conventional building techniques and materials. The prewar economy buildings and the wartime Quonset hut have grown up, and so has the prefabrication industry, with dozens of firms selling homes and more than twenty who will provide a catalog from which may be selected stores, factories, offices, and warehouse buildings.

Opportunities for Profit

For the individual contractor or builder with minimum capital to invest, "complete" prefabricated homes offer unique opportunities for profit. Financial risk is reduced because of greater assurance of delivery, quality control of materials and finishes, low overhead for the builder, and minimum investment.

Field erection is fast and easy due to accuracy of dimensions and fit, and the use of standardized sizes of structural members. Houses can be placed under roof in one day with the consequent advantage of sheltered construction for the rest of the work. Erection costs are thereby reduced and volume construction made possible.

The builder also benefits from the sales promotion and advertising aids of the manufacturer, as well as from the research and advisory services of the manufacturer's organization. Even financing is offered by some manufacturers.

Economies—

Prefabrication makes economical use of building materials and manpower. Marked savings come

<table>
<thead>
<tr>
<th>Component parts of prefabricated home at left include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Truss supports; (2) Roof sheathing; (3) Roofing paper; (4) Asphalt shingles; (5) Gypsum board ceiling; (6) Wall framing stud; (7) Upson board with moisture barrier; (8) Fiberglass insulation; (9) Plywood sheathing; (10) Asphalt barrier; (11) Shakes or siding; (12) Box beams; and (13) Flooring</td>
</tr>
</tbody>
</table>

APRIL 1953

PREFABRICATED STRUCTURES and STRUCTURAL MEMBERS

Use of Prefabrication

Opportunities for Profit

Salability

Combination of Prefabrication and Conventional Building Methods

Prefabrication Construction Methods

- Roof Design
- Joint Design
- Site Assembly
- Erection Procedures
- Sequence of Operations
- Assembly of Panels
- Metal Prefabrication

FOR MORE INFORMATION ON PRODUCTS ADVERTISED AND DESCRIBED IN THIS CHAPTER PLEASE USE ONE OF THE PREPARED INQUIRY POSTCARDS IN THIS ISSUE.
Where Else Can You Get This Outstanding Combination?

Exceptional Quality • Conventional Construction and Appearance • Architect Designed Homes • Nationally Advertised Materials and Equipment • Budget Prices • Fast Completion on the Site • Fourteen Models • Five Front Elevations for Every Model • Assistance in Site Planning — Financing — Decorating • Nationally Advertised Homes—FHA and GI Acceptable

Attention Builders

We have openings in a number of localities for qualified builders. If you have sound financial resources and an established reputation for building well-designed, high quality homes, this is an exceptional opportunity for you. Write today on your letterhead.
BUILDERS—
WHY EXPERIMENT?

When Scholz Designed "California Contemporary" units enable you to take advantage of the terrific pent-up demand for contemporary design by giving you—

1. SURE COST and PROFIT FIGURES BEFORE YOU START

2. UNPRECEDENTED SALES APPEAL

3. AT A COST WHICH IMMEDIATELY PLACES YOU AT AN ADVANTAGE OVER COMPETITION

See feature article in this issue which gives complete details on the Scholz Designed "California Contemporary" homes which sold out original project of 43 homes in 9 days and an additional 60 homes in 60 days in Toledo. These homes are being built for $9 a sq. ft., an unmatched figure today in the Mid-West and are complete, including tile baths, woodburning fireplaces, thermopane, complete insulation, vent fans, hot water-radiant heat. This record is in the process of being duplicated in other cities. Midwest Millwork and Supply Corp. is now shipping these same units along with complete cost estimates, engineered procedures, and cost-cutting techniques, to builders throughout the middle-west. Progressive builders can not afford to fail to investigate this combination of rock bottom controlled costs, building know-how and sales appeal.

Write today on your letterhead for complete information to

Scholz Designed CALIFORNIA CONTEMPORARY HOMES
BY MIDWEST MILLWORK & SUPPLY CORPORATION
3662 KENWOOD BLVD.  
TOLEDO, OHIO

APRIL 1953
First step in erection of prefabricated basementless home. Crew stakes out ground area for slab. Pipes and conduits are put into position.

Concrete foundation wall must extend below frost line. Depth varies with climate of location. Inside area is filled with 4 inches of pea gravel.

Continuous water-repellent blanket of sisal Kraft paper is laid over gravel and foundation to give vapor seal. Keep cold and damp from slab.

Fiberglas insulation is laid around rim. Entire surface is covered with wire mesh and concrete is poured. Slab is insulated and vapor-sealed.

Finish coat of concrete is applied to entire area of floor slab. A smooth surface is provided to assure smooth floor when laid on slab.

First step in erection of home with basement is installation of foundation walls with openings for basement windows in place.

Trailer trucks are loaded to conform with order in which panels and units will be required on the site. Care is taken to preserve finish of surfaces.

Fast site erection of prefabricated units...

through the planned engineering of prefabricated homes, mass purchasing and the more economical use of building products in the factory.

Further savings are achieved at the job site. The dealer-builder of prefabricated homes receives the exact amount of materials needed for each dwelling. He does not "over-buy" to assure that ample supplies will be on hand to complete his houses. Few materials are wasted.

Much of the work on a prefabricated home is completed in the factory where power machinery and line production methods reduce man-hours. In the field, these homes are erected with one-half to one-third the site labor required for conventional building.

Salability

Manufacturers' attention to design, which now ranges from the traditional to contemporary styles, with the inclusion of personalized features, has gained increasing acceptance and popularity for the prefabricated house.

Individual taste preferences are satisfied in a wide range of interior finishes—plaster, gypsum board, or almost any other type of wall covering—and in flexibility of room arrangements. Variation in elevations, ornamental exterior details and floor plans removes the element of sameness which formerly marked many low-cost homes.

The assurance of delivery to the customer, the reputation of quality materials and construction, and the low-cost feature make these prefabricated models particularly attractive for FHA and GI financing. They carry a high rating for such government approval, and are therefore easily marketable.

Combination of Prefabrication, Conventional Building Methods

For those who find it more practical to combine conventional on-site methods with prefabrication,
homes are under roof in one day...

there is an opportunity for profit in cooperation with an important member of the building industry—the lumber dealer. Without going into “complete” prefabricated construction, the builder can still take advantage of some of the moneysaving features of prefabrication.

Prefabrication by definition requires the use of factory production methods, and individual builders may have neither the equipment nor the storage space to develop these methods. By arranging to serve an individual builder, or group of builders, the lumber dealer may use his facilities to prefabricate on a profitable scale.

**Roof Design**

Some units such as roofs are less adaptable to shop prefabrication in the form of panels than others and therefore rafters and roof boards may be pre-cut for site fabrication. The flat roof and simple gable roof are the most common prefabricated types. Pitched roofs can be designed for partial or complete prefabrication. Usually gable ends are prefabricated in sections for quick assembly at the site.

Design of gable ends is generally a simple matter of plywood or other sheathing fastened to studs with nails or glue. The roof is often of stressed-cover construction. Plywood or other coverage is often fastened to rafters on one side only, and the roofing is applied on the site.

**Joint Design**

Joint design is especially important in prefabrication because it not only affects the strength of such structures but also governs to a great extent the degree to which parts are interchangeable and the ease with which the structure can be erected. Three types of joints are discussed here: (1) those between panels; (2) those connecting...
Here are Values
for the firm now building
5 to 100 homes per year
IN PACKAGED
HOMES

- a choice of designs, with architectural styling
  by Dofson, famous Northwest designer.
- built of outstanding quality, kiln-dried lumber
  in either precision-fabricated sections or pre-cut
  materials.
- dimensionally flexible—on a modular system.
  (Ask us for the details.)
- you, the builder, profit with the wholesale
  package—pre-cut, shell or complete—shipped
direct to you.
- you gain through the Virginia Lee fully tested
  labor-saving, time-saving, money-making methods.
  You gain through faster turnover, more sales, less
details, less invested capital. You avoid costly mis-
takes, unnecessary waste and endless red tape.
- these homes have proved salability.
- these homes are easy to finance—FHA and
  VA accepted.
- on the basis of a record you can check, we
  urge you to write, wire or phone to Dept. 11
  for the full story.

Virginia Lee Homes
VIRGINIA LEE HOMES, INC.
DEXTER HORTON BLDG., SEATTLE, WASH.
"The West's oldest packaged home manufacturer"

7 reasons why FORD HOMES SELL!

Ford Homes are available in mod-
ern, or conventional style—flexible
in design to assure quick sales and
satisfied customers.
Triple profits—less labor—less
sales effort—lower cost, faster turn-
over, less invested capital, no mater-
ial chasing with Ford Factory Built
Homes. Send for free catalog and
dealer application or visit our plant.
Manufacturing franchise also avail-
able beyond Northeastern trucking
distance.

- 50 models plus special designs
- Choice of exterior treatment
- Quality materials and work-
  manship
- Complete Factory-Built panels
- Delivered direct to foundation
- Erected in less than 60 man-
  hours
- High appraisals, easily financed

Ivon R. Ford, Inc.
McDonough, New York

(1) Panel Joints—A major prob-
lem of joint design is that of con-
caling the joint lines. This is in
no way connected with the strength
or durability of the structure but
is of great importance from the
standpoint of consumer preferences.
Exterior joints can be entirely
concealed by attaching finish siding
or some other coverage to the ply-
wood or other sheathing at the site,
but this increases cost. One treat-
ment is to emphasize the joints with
covering strips. A common practice
with houses of modern design is to
bevel the edges of abutting panels,
which results in a V-joint. Interior
joints may be similarly treated or
covered with wallpaper, or accent-
ing moldings, or insert strips.
The problem of seam treatment at
joints is eliminated when roomsize
sheets of wallboard are used and
rooms are so planned that joints
between sections of walls are con-
caled by intersecting partitions.
Conventional moldings are then
used to cover corner joints at
walls, ceilings and partitions.

Low-cost *Ameribows Delivered Direct To Your Job!

BY TRUCK
OR RAIL
ANYWHERE
IN THE
NATION!

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EXCELLEING
IN
STRENGTH,
DURABILITY,
ECONOMY!

American Builder
Build Profitably
in Today's Market... with NATIONAL HOMES!

According to leading housing authorities, 84% of all homes built this year will cost under $15,000, and the demand is largely centered on "open planned" homes.

You can satisfy this market with luxuriously-styled, functionally-designed, precision-made, reasonably-priced National homes.

National Homes' 2, 3, and 4-bedroom sizes (some with bath and a half) range in price from $7,000* to $15,000*.

The Monterey (right) 3-bedroom house with rear living room, dual-purpose car port and many other great features, sells for about $12,000* with liberal profit to the builder.

As a National Homes' builder you buy all structural and component parts in a complete package from one reliable source... no inventory... no warehousing... no purchasing problems. Investigate National's profit opportunities today. Write or wire.

*Prices are subject to local variations

Yearly Average with Nationals Exceeds 4-Year Total as Conventional Builder!

SAVAGE HOMES, INC., Utica, N. Y.

As a conventional builder, I put up 85 houses in the four years 1946-49. When you opened your Horseheads plant I took on the National line.

Our first year we erected 50 units; the next year 98, For 1952, 110 Nationals. That's a yearly average of more National homes than our four-year output of conventionals!

W. C. More
The sooner you can get a contract completed, the sooner you can turn the job into cash... the sooner you can get started on your next building.

Rilco Glued Laminated Wood Arches and Trusses help you do just that... without hiring a lot of extra labor or adding specialists to your payroll.

Rilco structural members come to your jobsite ready to be assembled and swung into position. There isn't a sawcut to be made... not a bolt hole to be drilled. Every piece fits perfectly...and goes together fast. Your regular carpentry crew does the work without special tools of any kind.

There are standard sizes and types for practically any sort of building... and Rilco engineers will be glad to work with you to develop special designs for any specific structure. Write for money-saving details.

Rilco
LAMINATED PRODUCTS, INC.
2511 FIRST NATIONAL BANK BLDG. ST. PAUL 1, MINNESOTA

THE ONE SURE WAY TO
cut building time
and payroll cost

The sooner you can get a contract completed, the sooner you can turn the job into cash... the sooner you can get started on your next building.

Rilco Glued Laminated Wood Arches and Trusses help you do just that... without hiring a lot of extra labor or adding specialists to your payroll.

Rilco structural members come to your jobsite ready to be assembled and swung into position. There isn't a sawcut to be made... not a bolt hole to be drilled. Every piece fits perfectly...and goes together fast. Your regular carpentry crew does the work without special tools of any kind.

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Rilco
LAMINATED PRODUCTS, INC.
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YOU SHOULD KNOW ABOUT
HOME-WAY houses

Lenders like prefabricated homes because they know exactly what house will be like when completed, what final cost will be, approximately how long it will take to erect. Homes such as this semi-luxury ranch type with attached two-car garage are built with standardized panels, are ideally suited for later expansion as interior partitions are non-load-bearing and may be rearranged easily.
The principal problem, however, is to obtain an effective linkage of the component parts of the walls, partitions, floor, ceiling and roof. Methods include bolted joints between panels and at corners; joint between panels utilizing male and female studs; corner joint with cover of one panel overlapping edge of other; mullion joint; corner joint with mullion; joint consisting of plywood tongue fitted into groove between a pair of studs of opposite panel; spline joint in floor panels.

(2) Joints Between Foundation, Floor and Walls—Joints between roof and walls must of course anchor the entire building. A general practice is to join the floor to the foundation sill, which has been fastened to the foundation and the walls to the floor.

Other techniques used are: recessed foundation sill with wall panel overlap; sill plate bolted to foundation, conventional joint and floor construction, and prefabricated wall panel with base opening for electric wiring; and floor and wall panels clipped to foundation by means of channel fitted with flange for wall support.

(3) Joints Between Roofs and Walls—Joints between roofs and walls must function to resist both lateral and lifting forces such as high winds, and to resist outward thrust. A joint similar to that in the conventional pitched roof framed with rafters and joist can be applied to a prefabricated house. The roof rafters are pre-assembled with plywood coverage in sections and nailed to the ceiling joists at the building site.

Erection Procedures

Most prefabricators plan their assembly operations to get the outer shell under roof in a day or less. Everything that will contribute to speedy shell assembly, including the laying of base plates for wall panels, should be done beforehand to help speed shell erection. All equipment needed to move and lift panels into place and fasten them together should be at the site, ready for use. Careful planning of details, from the loading of the truck at the shop so as to permit unloading of panels in the order needed, to an orderly plan of erection of panels in sequence is strongly advised by experienced builders.

All parts can be numbered in sequence of erection and such numbers clearly stenciled before leaving the shop so that loading will follow an orderly pattern and confusion on the site be avoided.

More and More of America's New Homes are PREFABRICATED!

Responsible for the spectacular gains of Prefabrication is the fact that Prefabrication delivers the utmost for the building dollar. New sales records continue to be set in the Prefabricated field because Prefabrication provides permanent, attractive homes geared to comfortable living and meets housing needs quickly and economically. Furthermore, Prefabrication's modern methods result in greater savings, from economy model to luxury home. In 1953, as it celebrates its 10th Anniversary, the Prefabrication Industry is ready for its greatest year. Join this big swing to Prefabrication.
Prefabrcation is the answer to increased profits for the builder of large projects. Richmond Homes will prefabricate your entire project, using your own successful plans to create a variety of exterior elevations. You can build faster, at lower cost, with fewer headaches, when you use Richmond Homes. Sections are shipped with BOTH interior and exterior finish applied. Richmond Homes are regarded by competent builders as the shining example of the finest in prefabricated homes because of conventional construction features and custom-built appearance. Investigate the tremendous profit possibilities . . . today!

Our program, naturally, has certain requirements relative to the financial status and experience of the builder. If you feel that you can qualify, we would like to hear from you. Write, wire, or phone for complete information. New 1953 brochure now available.

RICHMOND HOMES, INC.
440 Northwest "K" Street, Richmond, Indiana
Dealers say: "Norge owners are real sales boosters!"

"We think the Norge Home has the maximum of good features—easily constructed, low labor cost, beautiful exterior as well as interior, and minimum upkeep. We are tremendously pleased in every respect with this house.

"The only insulation in the house is loose rock wool in the ceiling, and the heating has been very satisfactory during the coldest days that we have had—about zero. The total cost for oil from October to March was $75.00." —Brandon Hagey

"Each Building is a Standing Advertisement!"

The enthusiasm of Norge Home owners prompts letters, similar to one received from Norge dealer Robert Nicholson, of Oak Ridge, New Jersey. In part, Mr. Nicholson wrote: "We have sold over forty Norge Homes. It is a thrill to meet prospective home buyers who tell us how completely satisfied their friends are with their Norge Homes. Norge owners are real sales boosters, and each of the erected buildings is a standing advertisement."

Erected in Just Thirty-two Hours!

Norge dealer E. Burke Finnerty, of Haskell, New Jersey, who received a Norge franchise earlier this year, writes: "The elapsed time, from the moment the first bundle of lumber hit the ground, to the finished building, was thirty-two working hours. The crew of four men, who erected this Forest Hills model building, have put up a total of thirty-one buildings."

*PATENTED INTERLOCKING SYSTEM!

The secret of the speed with which the Norge Cottage can be erected lies in the special manner of interlocking the various planks and boards. This unique and exclusive process is known as the Tregaard Interlocking System. The smaller cottages can be erected in a day, on pier or solid wall foundation, and no elaborate plans are required—only a few simple directions.

STURDY CONSTRUCTION

The tongued and grooved two-inch thick wall planks, with precision interlocking at both ends, assure maximum strength and rigidity. And the longer the cottage is up the stronger it becomes structurally. Because of the unusually sturdy construction, the Norge Cottage is an all-weather cottage.

Write today for information relative to a Norge dealer franchise for your territory. A number of choice areas still open!

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NORGE "PRE-CUT" COTTAGES
FOR STRENGTH... ADAPTABILITY... ECONOMY...

Specify these Laclede Products for your construction needs

...use LACLEDE STEEL JOISTS

FASTER CONSTRUCTION—light, easily handled—prefabricated to speed the job.

ADAPTABLE—Laclede Steel Joists combine efficient structural function with architectural versatility.

ECONOMICAL—Laclede Steel Joists assure you more room at less cost. Their high strength plus light weight provide substantial savings in foundation and framework. Utility conduits, pipes and lines are easily threaded through the open webs.

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LACLEDE STEEL COMPANY
St. Louis, Mo.
METAL building products used in light construction are far too numerous to catalog or describe in detail in this article. Plumbing, heating, wiring, appliances and fixtures in bathroom and kitchen, as well as numerous structural parts of the home use metal, either because of cost, ease of handling, strength, wear resistance, or some other special property or other material possesses for the job.

STRUCTURAL MEMBERS

The American Institute of Steel Construction specifies twelve advantages to steel construction: strength, uniformity of material, endurance under stress and service load, toughness against shock, adaptability, versatility for design, fire safety, compactness in space, speed of construction, salvage value, economy of material, and service from a giant industry.

Framing

Steel joists and complete steel framing in light construction have been found economical by many builders. Panel assemblies with nailable steel framing members may be partially fabricated at the shop of the steel distributor. Shop prefabrication can be supplemented by site cutting and final assembly. Assembling steel members on the site requires a power saw and portable welders. The nailable feature of the framing members makes it possible to apply other conventional materials to studs and joists with 8d nails.

Insulating board sheathing may be applied directly to the studs for the exterior wall. Dry-wall construction is possible inside without furring because of the nailable feature of the studs.

A number of manufacturers are now producing a wide range of standard sizes and shapes useful in bridging, trusses, or as joists, many of which units are to a large degree prefabricated by the manufacturer, ready to use.

Columns and Posts

The familiar concrete-filled steel column has long been recognized as one of the strongest building members. It is fire-resistant, economical to install, and takes little space. These columns may either be fixed or adjustable, and may be filled with concrete by the manufacturer or on the building site.

These columns are available in diameters from 2 1/2 inches to over 12 inches, and lengths from 5 feet to 20

(Continued on page 334)
Gives you a selling edge on
competition... AT LOWER COST

REYNOLDS Lifetime ALUMINUM
GUTTERS AND DOWNSPOUTS

That bright edge around the house advertises you as a modern builder. And the figures show you're a smart builder... when you buy rustproof permanence at lowest cost, and save still further by easy slip-joint application without soldering. You do better for yourself and for your customer with the permanent, non-staining beauty of Reynolds Lifetime Aluminum Gutters and Downspouts. Complete with all fittings... check your supplier. For literature and application details write to Reynolds Metals Company, Building Products Division, 2003 South Ninth Street, Louisville 1, Ky.

REYNOLDS ALUMINUM
The Rustproof Flashing
That Costs Less, Works
Easiest, Looks Best...

REYNOLDS Lifetime ALUMINUM FLASHING

Aluminum costs much less than any other rustproof flashing . . . but that’s just the first advantage. It’s also easiest to handle, form, cut. It looks best. And it cannot cause stains.

Check your supplier for types of Reynolds Lifetime Aluminum Flashing listed below. Once you’ve used this modern metal, you’ll make it standard for all your flashing use. Write for literature. Reynolds Metals Company, Building Products Division, 2003 South Ninth Street, Louisville 1, Kentucky.

IN 50-FOOT ROLLS—14", 20" and 28" wide. .019" thickness (26 U. S. Std. Gauge).

IN FLAT SHEETS—28" wide, 6’, 8’, 10’ and 12’ lengths. Also all-purpose display carton of ten 18’ x 48” sheets. All In .019” thickness.

No Rust, No Stain, No Deep Setting or Puttying . . . when you use
REYNOLDS Lifetime ALUMINUM NAILS

Roofing nails, wood siding nails, common nails, aluminum siding nails, cedar shake nails, wallboard nails, gypsum nails, asbestos shingle nails.

REYNOLDS ALUMINUM

APRIL 1953
MODERNIZE AT LESS COST
IN LESS TIME WITH
E-Z SHELVING

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IN STORES, FACTORIES,
GARAGES, HOMES, ETC.
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In addition to providing low cost, modern store fixtures for tools, paints and hardware, there is a quick sale and liberal profit on "E-Z" Brackets and Standards for Building Supply Stores and Hardware Stores selling to grocery, drug, and other type stores, factories, home builders, etc.

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Write for "E-Z" Catalog pages showing many additional uses, installation plan book, and dealers price list.

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Your Own Furniture

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HUNDREDS OF PICTURES HELP YOU BUILD

Every job is explained in careful detail. Nearly 400 large, clear drawings show exact working procedures for each step. Professional methods given for setting up shop, choosing tools and equipment, selecting proper varieties of wood, cutting and joining operations, wrapping, raising the grain, staining, sanding, smoothing, finishing, antiquing, designing furniture— everything you'll want to know.

This interesting, beautifully illustrated book has nearly two hundred big 8½ x 11 inch pages. It costs only $3.95. You'll save five to ten times this amount on the first piece of furniture you make!

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Please send me for a FREE working trial a copy of HOW TO MAKE YOUR OWN FURNITURE. If after 20 days I am not completely delighted, I will return the book and own nothing. Or, I will keep the book and remit $3.95 plus a few cents for postage and handling in full payment.

NAME ___________________________
ADDRESS _________________________
CITY, STATE _______________________

SAVE MONEY: Send $3.95 with your order and we pay postage and handling. Same return privilege guaranteed. Your money refunded if not satisfied.

The R. J. Coffman Co., Inc.
Dept. AB-4
ORLANDO, FLORIDA

AMERICAN BUILDER
Both driveways are located in the same city, and subject to the same climate conditions. You would expect that the cracked and broken driveway had been built five years ago, and that the one with unbroken paving had been built recently. Actually the reverse is true. The one on the left was constructed five years ago with American Welded Wire Fabric reinforcement; the one on the right was built a year ago without reinforcement.

Here is dramatic proof in pictures of the value of welded wire fabric. In driveways, foundations, sidewalks, terraces—in any concrete construction which goes into building a house—the proportionately small cost of American Welded Wire Fabric reinforcement pays off big dividends in long-lasting service and good looks. American Welded Wire Fabric’s small, evenly-spaced steel members bind foundations, walls and floors into a solid unit... eliminate the common causes of cracked plaster, warped floors, sagging baseboards and other damages which detract from the dollar value of a home.

Now, more than ever, prospective home-buyers are demanding real value for their money. That’s why the use of American Welded Wire Fabric can do much to assure quicker sales and satisfied buyers. It is easily handled, quickly laid. You can get U·S·S American Welded Wire Fabric in every locality from jobbers’ and dealers’ stocks.

If you’d like to receive illustrated folders, just drop a line to American Steel & Wire Division, Room 842, Rockefeller Building, Cleveland 13, Ohio.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

EVERY TYPE OF REINFORCED CONCRETE CONSTRUCTION NEEDS

U·S·S AMERICAN WELDED WIRE FABRIC

UNITED STATES STEEL
You will save
TIME • MATERIAL • MONEY
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A Versatile Support
for Concrete Forms

Adjustable. Turnbuckles provide convenient method of cambering to correct for deflection before or after concrete is poured. Special connections provide large curvature for arch centering.

Ease of Handling. Webrib HICO girders weigh only 25 lbs. per running yard; one man can easily handle one section. Two men can erect or dismantle shoring covering one thousand square feet in less than 40 minutes.

Clear Working Area. On spans up to 27 ft., there is no need for cranes or jacks. All weight of the newly-poured concrete is carried by the beams and walls, with no load on newly-laid floors below.

Durability. Webrib HICO girders have been re-used hundreds of times with no appreciable sign of wear.

An illustrated brochure showing Webrib HICO girders adapted to various types of concrete forms is available upon request.

Franchises available to qualified distributors
*Trademark

Note ease of handling Webrib HICO Girders

Intermediate section 24" Intermediate Section 37" Intermediate Section 49"

WEBRIB
STEEL CORP.
120 BROADWAY
NEW YORK 5, N. Y.

Reinforcing Rod and Wire

Reinforcing rod and wire mesh play an important part in concrete slab construction. Most prefabricated concrete slabs and joists embody some form of reinforcing rod. Load-bearing walls of combined brick and concrete construction usually contain rods also, and site-fabricated concrete slabs for floors, as well as for driveways and walls, usually contain wire mesh fabric of some kind. Other kinds of wire mesh are used for reinforcing concrete siding and for reinforcing the mortar used in tying brick veneer to sheathing.

Steel rod is also used to anchor ends of joists to concrete or masonry supports. When they rest on steel supports, welding is preferable. Steel strap functions similarly in holding up pipe, conduit, and ductwork in many locations throughout the modern building.

FUNCTIONAL SHAPES

Metals commonly used in a wide range of functional shapes and designs include aluminum, steel, galvanized sheet metal, stainless steel, bronze, nickel-silver alloys, brass, and copper in various qualities. Some shapes are made by forming sheets into the desired shape; others are extrusions of heated metal through dies or molds to produce bars with the desired shape in uniform cross-section the full length of the stock.

GUTTERS-ROOF VALLEYS

Stainless steel, copper, aluminum, and ordinary galvanized sheet metal are all used to provide roof drainage. Copper has for years demonstrated its long-lasting qualities, and stainless steel and aluminum are not far behind. Trough design for strength is important. Pipes and elbows should have tight seams, either double-locked or welded. Styles of trough and pipe may be either round or box-type.

Advocates of stainless steel stress its high strength-weight ratio which makes possible use of longer sections and easier installation, with fewer joints and hangers.

(Continued on page 343)
Saves "On the job" construction costs . . .

Builders and contractors everywhere are raving about these economical all-aluminum FAWSCO home beautifiers that are installed so easily and quickly. All aluminum, with a baked enamel finish, FAWSCO canopies are unconditionally guaranteed . . . never rust . . . never rot. They give all-weather protection summer and winter. Select FAWSCO canopies from a variety of styles in any one of these colors: Green, Red, Blue, or White. Write for catalog illustrating the canopies, and other FAWSCO building products.

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Cuyahoga Falls, Ohio

Please mail me illustrated 4-color FAWSCO catalog.

NAME
ADDRESS
CITY
STATE

Print name and address plainly, clip and mail today.

APRIL 1953
### Table of Steel Joist Dimensions

<table>
<thead>
<tr>
<th>Steel Joist Type No.</th>
<th>Design Properties</th>
<th>Maximum Span Developing Full Reveal</th>
<th>Maximum Span Developing Full Half Reveal</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ 81</td>
<td>142,000</td>
<td>5.000</td>
<td>5' 0&quot;</td>
</tr>
<tr>
<td>SJ 82</td>
<td>126,000</td>
<td>4.000</td>
<td>4' 0&quot;</td>
</tr>
<tr>
<td>SJ 83</td>
<td>110,000</td>
<td>3.000</td>
<td>3' 0&quot;</td>
</tr>
</tbody>
</table>

*Steel Joist Type Marking indicates depth of joist and top chord section.

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Dramatic sales-clenching feature for individual or group homes! Low cost, easy to install, 15 stock sizes available. No repairing or replacing EVER! Write for free literature!

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America's foremost ornamental Iron plant . . .

Offers you its facilities to expand your business and create new profits. Ornamental Iron can be used on almost every construction in both remodel and new work. A complete design service is available with no cost to you or your clients.

Illustrated below are seven of the hundreds of standard castings manufactured by TFC.

Through TFC, you may use Ornamental Ironwork comparable to the above installation, with prices competitive to millwork.

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Plasterers, lathers, architects, contractors, builders and dealers will find Keybead an easy-to-use, easy-to-handle plastering help. It is recommended for use where strong, economical, "true" plaster corners are a requisite on the job.

Quick and easy to lath, Keybead combines open-mesh reinforcing with a precision-formed bead. The open-mesh design of Keybead permits plaster to flow through the steel wires and give a generous bond of plaster to lath—a solid plaster corner results. This thorough steel wire embedment combined with the true-formed bead makes strongly reinforced, crack-resistant plaster corners. And, to prevent rust streaks, Keybead is galvanized, too.

Keybead is made in 7', 8', 9', 10' and 12' lengths; 5" width providing 2½" wings, 18 gauge 1" mesh, packed in convenient cartons. Write for further information and prices.

by the makers of KEYMESH and KEYCORNER
galvanized plaster reinforcing

KEYSTONE STEEL & WIRE COMPANY

by the makers of KEYMESH and KEYCORNER
galvanized plaster reinforcing

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

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FENCE • KEYSTONE ORNAMENTAL FENCE

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Notice how the plaster flows through Keybead providing a generous bond of plaster to lath. The steel wire mesh is thoroughly embedded producing strong reinforcement.
**metal lath**

**METAL LATH NAILED TO WOOD STUDS**

If the wood studs are spaced at 16" or less, diamond mesh or flat rib metal lath can be fastened with 4d common nails, 1" roofing nails with 7/16" heads, or 1" no. 14 gage wire staples. For studs spaced 24" apart, ¼" rib metal lath or sheet lath should be attached with nails or staples ¼" longer so as to provide at least ¼" penetration into the vertical wood supports. Common nails, when used, should be bent over to engage at least three strands of diamond mesh lath.

**METAL STUD HOLLOW PARTITIONS**

Prefabricated metal runners (often called track) are first fastened to the floor and ceiling. The studs are fastened to these runners, then 18 gage wire is used to tie the metal lath to the studs at 8" vertical spacings. Metal lath should be applied with the long dimension of the sheet across the studs and with the lower sheet lapping over the upper. If the partition is more than 10' long or 8' high, a ⅛" stiffening channel should be placed horizontally in the hollow space every 4' to 6' of partition height and wire-tied rigidly to each stud.

**SOLID PARTITIONS WITH STUDS**

When channel studs are used in solid partitions, the metal lath is applied to only one side of the studs, and the sheets are placed with their long dimension horizontal. Lathing is started at the top of the partition with the lower sheets lapping over the upper. Wood grounds are tied to the lath or studs with wire before plastering and are used to fasten cabinets, chair rails, wood paneling and fixtures to the partition. Conduit, pipe and backs of outlet boxes should be covered with a strip of metal lath and a minimum plaster thickness of ½". A complete line of shallow electrical switches and outlets is manufactured for use in solid metal lath and plaster partitions.

**SOUND INSULATING DOUBLE PARTITIONS**

Double partitions, as their name implies, are composed of two separate layers of metal lath and plaster supported by double rows of ¼" channels or prefabricated metal studs. No spacers or cross-ties which in any way connect the channels or studs on opposite sides of the partition are permissible. Each half of the partition should have ¼" channels tied horizontally to the inside face of the vertical channels or studs. These horizontal stiffeners should be used every 4', and at least two should be provided in partitions 9½' high, or over. For maximum sound insulation, ceiling and floor runners should be insulated from concrete slabs.
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Give Kawneer Your Service Station, Garage Front Installation Problems

If you, as a Builder-Contractor are erecting or remodeling service stations, garages and automotive showrooms, you can relax, and expedite building front construction problems by using Kawneer products and services. Kawneer products, building front materials, doors and entrances, colored Zourite rust- and chip-resistant aluminum facing, and aluminum roll-type awnings are quickly and properly installed by Kawneer installing Dealers.

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3. Centralized warehousing and inventories—for quick delivery.
4. Properly designed products adaptable to any kind of installation.
5. Acceptability by architects and building owners.
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7. Specially trained Kawneer field installation supervisors who are available for consultation on large or difficult jobs.

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1. It distributes a concentrated load to adjacent joints to prevent deflection of beams by the practical application of the principle of tension — it is flexible enough so that joints on required centers can be fastened just as securely as those specially placed. Provides for meeting the requirements of all building codes.
2. Does not interfere with laying of subflooring.
3. Cannot separate from joists when under load or as lumber shrinks.
4. Large free area at every pitch.
5. Aluminum only—in 3 sizes—up to 54" base.

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ONLY THE "MIDGET" LOUVER HAS THESE PATENTED FEATURES

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- For efficient ventilation, you can rely on "Midget" Louvers—all aluminum—last forever. 2 styles—for indoors or outdoors. 6 sizes - 1" to 4" diameter.

Midget Louver Company
8 Wall St. Norwalk, Connecticut
Ductwork, pipe, conduit, and tubing are considered more in detail in the sections on heating, plumbing, and wiring the house. Nearly all types of structural metals are involved at some point, and manufacturers are constantly working with heating, plumbing, and electrical contractors to develop better products to serve these needs.

Cornices, Edgings

Architectural extruded metals may be bronze, brass, aluminum, nickel-silver alloy, copper, or other special alloys. As extrusions are wrought under pressure, they are usually free from blowholes and other defects common to castings, and have a high tensile strength. Extruded shapes can thus be used with thinner cross-sections, and finished with less labor. Primarily, such shapes include opening frames, entablatures, cornices, bars, flutings, pilasters, caps, counter screens, hand rails, edgings and beadings of all kinds. Some manufacturers stock standard shapes for these purposes, and several will produce extrusions to the design of the architect on order.

Proportioning Gutters, Leaders and Outlets

Two main factors govern roofing drainage problems: (1) The greatest amount of rain which the roof will be required to take care of at a given time. (2) The actual area of the roof that is being drained.

In residential construction where an infrequent overflowing of the drainage system will not seriously damage the building, a smaller rain intensity value may be used in determining the size of downspouts and gutters. In larger stone buildings it is best to use the greatest recorded rain intensity in figuring, since an overflow may cause serious damage. The general rule to follow is 1” square downspout area for every 100 square feet to be drained.

Types of Metal Lath and Accessories

Metal lath is of three basic types: diamond mesh (also called flat-expanded), rib, and sheet. Diamond mesh is metal lath slit and expanded from metal sheets into such a form that there is no rib in the lath. Rib metal lath has either a separately attached stiffening member or an unexpanded portion which leaves the plane of the lath at an angle and returns at the same angle, imparting a certain rigidity. Sheet lath is simply slit or punched from metal sheets, usually galvanized.

Accessories used include a variety of small nose and bull-nose corner beads, base screed, concealed picture molding, and metal casing of various sorts. Special channels, hangers, and metal studs are properly considered as framing members rather than lathing accessories.

Through the years, many types of metal lath and plaster partitions have been developed to meet specific requirements. They can be described under three basic groups—hollow, solid and double partitions.

SHEETS AND PANELS

Metal sheets and panels for use in flooring, ceiling, roofing, and siding applications, are considered at length in other sections of this issue. There are, however, a number of special types of sheets and panels which should be mentioned.

One manufacturer, for example, has devised an interlocking panel which forms floor, ceiling, and joists in one operation, allowing space for large pipes and ducts, and providing convection surface to coordinate with radiant heating coils. The upper surface is prime painted, ready for flooring, and the lower surface may be left exposed for beam ceiling or may be covered with wire lath and plaster as desired. The same panels may be used vertically for partitions. A number of manufacturers produce steel deck plates, some of which are designed to use either in forming floors or as steel forms for laying concrete floor slab. Some are also built with special acoustical properties. These all-steel panels and members have the advantages of low initial cost, flexibility in handling, ease of installation, and strength.

<table>
<thead>
<tr>
<th>Table I - Area of Standard Size Leaders</th>
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<tbody>
<tr>
<td>Type</td>
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<tr>
<td>---------------</td>
</tr>
<tr>
<td>Plain Round</td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Corrugated Round</td>
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<td></td>
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<tr>
<td>Square Corrugated</td>
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</tbody>
</table>

Use this chart in selecting the proper size and shape of leaders in gutter and downspout installation.

Nixalite

ENDS BIRD NUISANCE

BEAUTIFUL CLEAN BUILDING

Nixalite is so inconspicuous that the photographs reproduced had to be retouched to show where the Nixalite is installed.

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A BUILDERS' ITEM that's a "must" wherever a house with a basement is built. Our heavy, galvanized corrugated steel window well wall has set the pace in manufacture and betterment of product since first offered in 1938. The ONLY steel areawall COMPLETELY Hot-dipped galvanized AFTER forming. Will outlast the house.

Two types: The Streamlined Straight, especially advantageous where space adjoining the house is restricted. Round type, for installation wherever projection into yard is not a factor. Both types in complete range of sizes to fit all standard window openings.

Each unit (one-piece, no attachments) has Hug-Tite Flanges for tight fit to foundation wall. Top edge rolled on all sizes, important for strength and stability.

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SPEED of installation saves time, labor, money. No painting needed. You install each unit just as delivered. Never any cracking or crumbling.

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SOUTH END WABASHA BRIDGE • SAINT PAUL 1, MINN.

AMERICAN BUILDER
STEEL access panel to provide access to drainage pipe in basementless building. Installed with metal wall around area of panel.

SPECIAL DOORS

While most kinds of doors are discussed in full detail in the section on windows and doors, certain special purpose doors are normally manufactured as complete "package" units made of metal.

Access Doors

Access doors include roof hatches, ceiling hatches, floor hatches, and scuttles. Made of steel or aluminum, roof scuttles or hatches provide easily-installed, trouble-free access to the roof of the building. The only requirement is that a roof opening of the proper size be provided. The hatch is lined up over this opening and nailed or bolted to the rough roofing through holes provided in the flanges of the unit. They are watertight and fireproof and can be set up to lock from either inside or outside.

Floor and ceiling hatches are made so that the door fits flush with floor or ceiling. Floor hatches in some instances have either smooth or patterned surface to prevent slipping.

Basement and Bulkhead Doors

Doors for use with either frame or masonry construction are available as package units which are attractive, designed for long life, and easy to install. Where the unit joins either frame or masonry, special flanges are provided to make a secure seal against rain and dirt.

Ashpit and Cleanout Doors

Installed in the bottom of chimney or stack for easy removal of soot and ashes, ashpit and cleanout doors in some instances are cast iron, but in most modern types are made of steel with welded parts and heavy-duty hinges to give long wear.

FIREPLACE UNITS

Old-fashioned fireplaces wasted heat, smoked up rooms, and caused discomfort in various ways. For the builder who has a fireplace included in his plans, there are several fireplace heating units which are designed by engineers to provide added comfort and efficient fuel consumption.

While not recommended as a substitute for heating plants in northern climates, efficient fireplaces can save fuel bills by providing heat during many cool weather days. Units which circulate the heat to every part of the room or house through ducts are available in designs that permit their use with a wide range of ornamental fireplace types.

Firebox, throat, and flues are designed for correct operation, and dampers, down-draft shelves, and smoke domes are all built into correctly fabricated units.
... and particularly the department stores built of reinforced concrete. In addition to the beauty and flexibility of this type of construction, owners and operators find that fire insurance premiums and repairs are less and that the insulating properties of concrete reduce heating and air conditioning costs.
The trend in concrete construction is to reinforce with welded wire fabric. For only fabric provides uniformly spaced steel members for proper load distribution and added strength. But be sure to specify your reinforcing fabric with the same care as you order your concrete mix. Specify Clinton Welded Wire Fabric. It meets all A.S.T.M. requirements and is available in proper sizes and weights for all reinforcing needs.
PREFABRICATED CHIMNEY units can be used in place of lined brick construction. They can be suspended from the ceiling, the floor, or installed with pier support.

To install complete chimney: (1) Nail chimney support in place. (2) Set each section and cement with acid-proof cement provided. (3) Nail flashing to roof, slide housing over sections, and cement rain cap in place.

TYPE "L" FLUE

SHUTTERS AND LOUVRES, JALOUSIES

Modern door construction frequently utilizes jalousies or louvres, the primary purpose of which is to provide adequate ventilation in rooms, corridors, and closets. While jalousies or louvres are available with wood or glass slats, and one manufacturer at least is making glass jalousie-style windows, the greatest demand is for the metal jalousie unit for installation into doors. Made of furniture steel, aluminum, or other metals, and of almost any size, these units are shipped complete and ready for installation from several manufacturers.

ORNAMENTAL METAL WORK

Ornamental metal work includes ornamental castings, wrought iron pieces, gates, canopies, fences, railings, brackets, grilles, window bars, hand rails, trellises, lamps, ornamental stairs and doors, and posts. Perhaps the most common material is cast iron, although many pieces are now made of aluminum and bronze.

THE CITY GOES TO THE SUBURBS...

As in suburban branch department stores and all types of commercial and residential concrete construction, Clinton Welded Wire Fabric is a favorite with builders everywhere. Here's why:

Simple to Form and Shape. Clinton Welded Wire Fabric possesses the proper flexibility to make it easy to bend, form or shape right on the job. It is sufficiently rigid to hold its shape after forming.

Easy to Handle and Place. Both the heavy and light gauges of Clinton Welded Wire Fabric flatten quickly and easily from the roll.

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WICKWIRE SPENCER STEEL DIVISION, New York 22, N. Y.
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PLYSCORD SHEATHING: for walls, roofs, subflooring. Available in interior and exterior types.

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MAPLE  PRIMA VERA  AVODIRE
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GUM  CHEN CHEN  VERTICAL GRAIN FIR

These are top quality plywoods—all materials are carefully processed—bonded with the best adhesives in hot plate presses—sanded to satin smoothness—and carefully stored under proper conditions. You can sell Roddiscraft quality with confidence.

AVAILABLE WHEN YOU WANT IT: A nation-wide warehouse service makes delivery of Roddiscraft Plywood fast and reliable. For complete information—sizes, thickness—prices—and prompt service get in touch with your nearest Roddiscraft dealer.
ALL types of flooring materials fall under one of three general categories: wood floors, resilient floors, or non-resilient floors. The majority of wood floors are made from woods botanically classed as hardwoods. Several excellent flooring woods fall into the classification of softwoods, but are from the harder species. For reference purposes, composition flooring materials are considered resilient flooring while those floors composed of concrete and stone products make up the non-resilient category.

Flooring Types

Strip flooring consists of pieces, available in varying thicknesses, cut in narrow strips and of uniform widths. Pieces are tongued and grooved at the factory.

Parquet or pattern flooring consists of equal short lengths, generally governed by multiples of the width, which are installed in geometric patterns such as herringbone, squares, and rectangles. A parquetry flooring is also available which consists of factory assembled blocks; sometimes referred to as block flooring.

Plank flooring consists of boards milled in random widths to produce the effect of early American heavy plank floors. Plank flooring is available with or without beveled edges; beveled edges being used when a more authentic early hand-hewn treatment is wanted. The Colonial wood peg fastening effect is simulated by wood plugs glued in holes on top of the counter sunk screws which fasten the planks.

Pre-Finished Hardwood Flooring

Some manufacturers produce flooring which is completely pre-finished at the factory. It is ready for use immediately after being laid. All species and types of hardwood flooring may not be readily available in this form; however, a producer equipped to...
America's finest plastic wall tile
to promote, to install... for profit!

Meeting every consumer demand, you sell the best when you sell the profitable TILEMASTER line! Patented Bev-All's more costly molds and careful engineering absolutely prevent "dishing."

Available in 30 rainbow colors for perfect flexibility of design and harmony. TILEMASTER colors are molded all the way through! 16 molded tile pieces permit "all-tile beauty"—eliminate any need for substitutions or bent tiles.

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14 reasons why

TILEMASTER

is the plastic
answer to every wall tile demand!

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10. Plastic resilience withstands blows or sharp knocks!
11. Cleans so easily... stays "sparkle-bright!"
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13. Accepted and endorsed by architects!
14. Assured consumer satisfaction!

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You start saving the minute you specify Vikon! The initial price is low and installation is relatively simple. Light in weight, no extra supports are required. And Vikon Tiles can be bent, cut, lapped . . . with ease!

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Washington, N. J.
Please send me, without cost or obligation, the complete story of Vikon Tile together with full color brochure and sample tiles.

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City Zone State

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Danville, Illinois

In Canada: W. D. Elmslie, Ltd.
409 Notre Dame St., West, Montreal 11, Quebec

AMERICAN BUILDER
READ THESE FACTS ABOUT POPULAR DELFAIR OAKBLOK

DELFAIR Oakblok offers to builders a truly distinctive floor, one that is equally suitable for small or large homes, commercial structures, housing projects, schools and institutions. It is especially adaptable to economical installation over concrete.

DELFAIR Oakblok is available in all standard strip flooring grades and also in the following special grades: Prime, Standard and Better, Standard, Tavern and Better and Tavern.

DELFAIR Oakblok is made of either Red Oak or White Oak, and is available either unfinished or prefinished.

DELFAIR Oakblok comes in the following sizes: 25/32" x 63/4" x 63/4", 25/32" x 71/2" x 71/2", 25/32" x 9" x 9", 1/2" x 8" x 8" and 1/2" x 10" x 10". All blocks are steel spline joined.

DELFAIR Oakblok's milling characteristics: tongue and groove end-matched—slight vee-edge on prefinished blocks — cross-wise grooves spaced to insure better mastic adhesion.

DELFAIR Oakblok can be a money-maker for you in 1953. Write today for complete information.
 Builders are becoming increasingly conscious of the new importance taken on by kitchens, breakfast bars, dinettes, and bathrooms. That's why they are seeking new, efficient, economical and convenient ways to impress new home prospects with these rooms.

New Micarta® “Mardi Gras” adds a gay, colorful, festive spirit to whatever surface it covers. What's more, its beauty is protected for years and years against normal household abuse. Long after other surfacing materials have been replaced, Micarta continues to resist scuffs, scratches, chipping, cracking and burning. In line with its bright, cheerful appearance, “Mardi Gras” leaves housewives carefree and workfree...with plenty of time to praise the intelligent long-range planning of their builders.

United States Plywood Corporation
55 West 44th Street, New York 36, N.Y.

Please send color guidebook and full application information on Micarta.

NAME ____________________________

ADDRESS __________________________

CITY _______ ZONE _______ STATE _______

Westinghouse

Micarta

Distributed by United States Plywood Corporation

354 American Builder
"We've been using
Mosaic Clay Tile for years . . .

. . . won't use a substitute,
says Arden J. Millisor, Columbus, Ohio builder.

"The goodwill of our long list of satisfied customers was
built in part by the fine performance of this quality floor and
wall material.

"We find that Mosaic Clay Tile is one of the few materials which
takes year after year soaking from shower and tub and remains
unharmed. That's why we use it in all our bathrooms, from the
most moderately priced houses on up.

"Believe me, we had to spend many good dollars for repair and
replacement before we used Mosaic Clay Tile exclusively. Now,
you couldn't sell us anything else.

"I've used Mosaic Clay Tile in over 500 homes, since 1924.
When anyone asks me what I think about tile, I give them one
answer—'see our customers, they'll tell you all you want to
know.' Here's what one of our home owners has to say about
Mosaic Clay Tile . . ."
NORTHERN HARD MAPLE helps you SELL the job so it STAYS sold!

All signs point to a year of commercial, small industrial and recreational building. For such jobs, no other floor (and certainly no mere floor covering) matches the advantages of Northern Hard Maple. When an owner is reminded how much a well-laid Maple floor adds to the structural strength of his building... When he's reminded that the beautiful walking and working surface of his Maple floor will probably outlast the building... When you point out the extra saving of Second or Second-and-Better MFMA Northern Hard Maple—the handsome "character" grades—You'll sell many a fine job against any competition. And it'll stay sold!

MAPLE FLOORING MANUFACTURERS ASSOCIATION Suite 596, Pure Oil Building, 35 E. Wacker Drive CHICAGO 1, ILLINOIS

SEND FOR THESE FREE PROFIT-BUILDING FOLDERS! They'll give you the powerful sales facts about America's finest hardwood flooring—MFMA-graded and warranted Northern Hard Maple.

FLOOR WITH NORTHERN HARD MAPLE BEECH AND BIRCH

...maple blocks laid in mastic

Suggested details and patterns for maple flooring blocks installed in asphalt mastic. Below: Flooring nails shown in approximately their actual size.

...details for subfloors

In conventional joist construction sound subflooring beneath finish floor is virtual "Must." Subfloor is ordinarily nailed directly to floor joists. Right: Maple flooring should be blind-nailed—nails driven at about a 50-degree angle where tongue leaves shoulder. Head of each nail is countersunk.
Asphalt tile installation can be made over any smooth, clean interior surface.

Concrete subfloors should be bone dry before installing rubber tile. On new construction, concrete should be pre-tested for moisture.

Cork tile can be applied directly over smooth, firm floors of cement, steel, well-seasoned wood, clay tile or other hard surface.

Subfloor Requirements

Hardwood strip flooring should be laid on a soundly constructed subfloor. Subfloor boards should be between six and eight inches wide. Face nail them solidly at every bearing point with two or three 10-penny nails. All butt joints should rest on bearings. Use adequate nailing to avoid squeaky floors. Subfloors laid diagonally afford additional bracing strength for the building. Bracing strength will be further improved if diagonal direction is reversed on alternate floors. Before laying finish flooring, be sure subflooring is dry and clean, with all bits of plaster or other dirt scraped off.

There's one important feature of Higgins Block that doesn't show in spec sheets...and that's the rich, lustrous, sales-producing look of quality!

* SPECIFICATIONS:

9" x 9" net face hardwood blocks — easy to install
3-ply cross-grain construction — when properly installed will not warp, buckle, cup or crack
Selected oak face — ready finished
Pressure bonded with marine-type glue — water-proof, climate-proof
Toxic impregnated — rot-proof, and termite-proof
Grooved back anchors into adhesive — quiet and comfortable
Can be laid without special preparation on concrete slab — ideal for radiant heat
Blocks fit flush — without large, visible V-grooves

Higgins BONDED HARDWOOD BLOCK FLOORING INC. THE WORLD-FAMOUS BOAT BUILDERS

Use this coupon for free sample block and literature
Gentlemen: Please send sample block and literature to:
Firm Name.................................................................
Address.................................................................
City..................................................State..............Zone
When Architects see WedgeWood they see IDEAS.
When Builders see WedgeWood they see SALES.
When prospects see WedgeWood they BUY.

So see YOUR Georgia-Pacific Representative today.
Georgia-Pacific’s new low-cost textured plywood with the look of luxury . . . the touch of drama that

SELLS ON SIGHT!

WedgeWood creates new beauty . . . new texture . . . new design . . . for your homes that spells SELL in any kind of styling. Excitingly effective in full room treatment . . . dramatic when used occasionally . . . WedgeWood has created new buyer interest, appreciation and desire wherever it has been used. With WedgeWood all the elegance and charm of fine wood paneling is yours at low, low cost.

Surround your prospects with the beauty that adds to the market value of your homes.

WedgeWood fits with timeless ease into modern or traditional settings.

WedgeWood puts new “buy appeal” into den or dining room, lounge or living room . . .

GEORGIA – PACIFIC
PLYWOOD COMPANY

Kentile is subjected to many critical tests to insure top-quality asphalt tile:

This amazing new electronic Color-Eye measures the shade of each Kentile color to protect uniformity.

The wear resistance of Kentile is controlled by frequent tests under the artificial "foot" of this Taber Abraser.

This research chemist is examining a Kentile sample under a binocular microscope, checking surface smoothness.

TODAY'S KENTILE is a far cry from the "original" asphalt tile... many times superior in beauty and durability. Quality Control in all phases of manufacture insures a product as perfect as modern methods can make.

KENTILE FLOORS are long-lasting floors. The rugged, fire-resistant surface resists dirt, stain and wear... cleans and stays clean with only mild soap and water... gleams like new with just an occasional no-rub waxing.

Specifications and Technical Data

INSTALLATION
Can be installed over any smooth, firm interior surface that is free from spring, oil, grease, lumps or foreign matter: metal—wood—plywood—concrete—radiant heated concrete slabs—concrete in direct contact with the earth, on or below grade.

INSTALLED PRICES
Prices given here are for a minimum area of 1,000 sq. ft. over concrete underfloor. Installed prices range from approximately 20¢ per sq. ft. for 3/16" Group "A" (darker colors) to 40¢ per sq. ft. for 3/16" Group "D" (lightest marbleized colors). (Installed prices vary according to the size of the installation and condition of the underfloor.)

THICKNESSES
Standard Kentile is available in two thicknesses: 3/16" for most residential and commercial uses... 3/16" for industrial uses and wherever extra-heavy duty is expected.

SIZES
Standard tile size is 9" x 9".

SPECIAL KENTILE is a greaseproof asphalt tile flooring with extreme resistance to petroleum and cooking greases and oils, alcohols, alkalis and most acid solutions. It can be installed wherever Kentile can be installed... is available in a wide range of marbleized colors... 3/16" and 3/16" thickness. Installed prices range from approximately 40¢ to 50¢ per sq. ft.

The KENTILE Flooring Contractor is a trained and experienced expert... fully qualified to aid you in choosing the proper floor for every residential, commercial and industrial installation.

Call on him whenever you wish as you would a paid member of your staff.

KENTILE, INC., 58 Second Ave., Brooklyn 15, New York
350 Fifth Ave., New York 1, N. Y.; 705 Architects Bldg.,
17th and Sansom Sts., Philadelphia 3, Pa.; 1211 NBC Bldg.,
Cleveland 14, Ohio; 900 Peachtree St., N. E., Atlanta 5, Ga.
2020 Walnut St., Kansas City 8, Missouri; 4522 South
Kolin Ave., Chicago 32, Illinois; 4501 Santa Fe Ave., Los
Angeles 58, Calif.; 452 Statler Bldg., Boston 16, Mass.

Copyright 1923, Kentile, Inc.
Enduring Beauty

Original design in low-cost Kentile...exclusive ThemeTile and Kensect inserts...add to the beauty and appeal of any store, shop or office...lasts for years of hardest service. Kentile colors shown are Grand Antique and Grammont.

Nationally-advertised Kentile Floors increase the value and acceptance of every home...Colors shown are Genoa Green with Toledo Red Border plus ThemeTile and Yellow Feature Strip.

The rich, modern beauty of durable Kentile Floors is easy and economically maintained...Kentile colors shown are Lamartine and Veined Carnelian with a Sailfish Kensect.

KENTILE, INC., Makers of:
KENTILE ASPHALT TILE
SPECIAL (greaseproof) KENT
KENCORK FLOORS and W
KENRUBBER TILE FLOOR
KENFLEX VINYL TILE
Choose the floor that’s NATURALLY beautiful!

BRUCE STRIP

Prefinished for economy and durability

Owners get the biggest value in hardwood floors when you specify Prefinished Bruce Strip Floors.

The charm and natural beauty of this modern oak floor is preserved by the factory-applied finish. Tests prove it outwears surface finishes 3 to 1 and home owners find these prefinished floors far easier to keep clean and beautiful.

The cost of a Prefinished Bruce Strip Floor is usually less than for an unfinished floor of the same grade after you add the expense of on-the-job finishing. There’s also a time saving of 3 to 5 days per house. Write us for complete information. See our section in Sweet’s File.

E. L. BRUCE CO., MEMPHIS 1, TENN.

Hedrich-Blessing Photo
Strip Floor Application

When possible lay strip floors lengthwise of the building. When applying over old finish floors, apply at right angles with the old floors. Thresholds are omitted in the modern home. Flooring should run continuously through doorways. Care should be exercised to stagger end joints to avoid grouping them closely together.

Resilient Floors

*Resilient Floors.* The major types of resilient floors are asphalt tile, cork, linoleum, rubber, and felt base with baked enamel surface. The use of a felt underlayment between the subfloor and resilient floor material is optional if the subfloor is of plywood or hardboard. In every other case, however, a felt underlayment is recommended if the long life and full benefit is to be expected of the resilient flooring. Subflooring must always be reasonably smooth and solid.

Resilient flooring should never be installed on wet or damp subfloors or on wood floors in contact with the ground. For full satisfaction it is recommended that at least 18 inches of air space and free circulation exist between subfloor and earth. Asphalt tile may be installed on concrete which is in contact with the ground if the concrete is fully treated with sealer. In every case, a dry condition must exist on the surface receiving the resilient flooring and underlayment.

*Flooring in Rolls.* Cut resilient flooring to fit accurately at all points with a minimum of cross seams. A thin, even coat of paste is spread on the floor and the covering is pressed into place. Then roll well with a roller to remove air pockets and insure adhesion. Except for pattern goods, all resilient flooring should be overlapped slightly at the seams and cut through both thicknesses to insure a tight finished seam joint. Pattern goods must be carefully butted without further cutting to retain symmetry of design.

*Tile Flooring.* Determine the exact center of the area to be covered with tile flooring. Do this as shown in diagram shown elsewhere in these pages. Starting at the center line, spread adhesive in a thin even coat with a notched trowel. Cover enough area for several tiles and apply at once. Start laying tiles from the center point and work toward the walls so that last tile is set on perimeter or border of the room. Cut and fit tiles carefully around all projections and fixtures. When laying tiles, butt firmly against each other but do not slide into position as this may force adhesive up between the seam joints. Borders should follow the line of permanent fixtures and border width can be varied to accommodate any dimensional variations.
houses move faster with floors of
WRIGHT RUBBER TILE

Floors of Wright Rubber Tile instantly indicate to the prospective buyer that you have put quality first. It gives him confidence in whatever you may tell him about the rest of the house . . . help you clinch the sale.

Features that show are features that sell. You install the latest cabinets, dishwashers and electric refrigerators . . . Don't spoil the effect with a drab unexciting floor. Go modern all the way with floors of Wright Rubber Tile. The customer will be impressed very favorably.

Tell the prospect . . . about the 100 year life of a Wright Rubber Tile floor . . . that no floor requires less maintenance . . . Explain to him that over the years Wright Rubber Tile floors will save him money by needing no replacement.

Just try one house! Put in one of these gleaming floors in the next house you build for sale. Then watch how much more quickly your prospect becomes a buyer.

Wright Manufacturing Co.
5203 Post Oak Rd., Houston 5, Texas

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

* WRIGHTEX—Soft Rubber Tile
* WRIGHTFLO—Hard Surface Rubber Tile
* WRIGHT-ON-TOP Compression Cove Base

VERTICAL SURFACES. Wood members to receive metal lath and scratch work for clay tile are protected from dampness by building paper, creosote or asphalt paint. If scratch coat is applied with care, mortar setting bed will provide suitable surface and "leveling" coat may be omitted. Either floating or buttering method may be used in setting tile.

CUSHION EDGE SQUARE EDGE

Tiles may have either square or cushion edges. Cushion type has slight curvature at facial edge

SINK DETAILS. Glazed tile for lavatory counters, drainboards, etc., should be scratch and stain resistant.
construction details

Metal Loth
Mortar setting bed
Glazed Edge
Sheet Metal Form
Radiation

SCALE 3'-1".

Courtesy Tile Council of America

BASEBOARD RADIATION. Installation of a baseboard convective-radiant unit

... estimating tile requirements

Table of Approximate Percentages of Allowable Waste for Various Areas

<table>
<thead>
<tr>
<th>Up to 50 sq. ft.</th>
<th>10%</th>
<th>75 to 100 sq. ft.</th>
<th>6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 to 100 sq. ft.</td>
<td>8%</td>
<td>100 to 200 sq. ft.</td>
<td>5%</td>
</tr>
<tr>
<td>100 to 200 sq. ft.</td>
<td>7%</td>
<td>200 to 300 sq. ft.</td>
<td>5%</td>
</tr>
<tr>
<td>200 to 300 sq. ft.</td>
<td>6%</td>
<td>300 to 1000 sq. ft.</td>
<td>4%</td>
</tr>
<tr>
<td>300 to 1000 sq. ft.</td>
<td>5%</td>
<td>5000 to 10000 sq. ft.</td>
<td>3%</td>
</tr>
<tr>
<td>10000 and up</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To find the number of tile needed for an area not shown on chart, such as the number needed for 85 square feet, add the number for 80 square feet to the number for 5 square feet.

Now you can install PANELYTE On-the-Job

PANELYTE
HIGH-PRESSURE LAMINATE
Easiest to install in kitchens and bathrooms
Quality Plastic Surface

Regular PANELYTE (1/16" thick) for bonding to plywood, is ideal for jobs fabricated in the shop. This durable, beautiful plastic for table-tops and work-surfaces has proved its dependability in homes, hotels, stores, restaurants and institutions for many years. It is the same fine laminate as 1/10" PANELYTE, except in thickness. Complete range of colors and effects.

NO COSTLY DELAYS. Your men can install the new, heavier PANELYTE—or local sub-contractors can easily handle the job. Composed of laminated plastic throughout its 1/10" thickness, this new form of PANELYTE is beautiful and durable!

Installation is easy and quick, using metal moldings and ordinary hand tools. Large sizes, to 4' x 10', for fewer joints and more one-piece surfaces. And you'll have mighty attractive results to show—beautiful surfaces that will last a lifetime.

PANELYTE in both thicknesses is available through dealers. Ask your dealer today or send coupon for complete information.

PANELYTE®
The Decorative Surface
BEAUTY FIRST—TO LAST

PANELYTE is made by St. Regis Paper Company, famous for paper and plastic products of highest quality.

Panelyte Division
St. Regis Paper Co.
230 Park Ave., New York 17, N. Y.

Please send me name of my nearest Panelyte dealer and complete information about PANELYTE.

Name: __________________________________________
Firm Name: ______________________________________
Address: _________________________________________
City: __________________ Zone: __ State: ___________

Panelyte Division AB-4
panels transform any wall into a WORKING WALL

decorative, functional, versatile!

"PEG-BOARD" presents a brand new concept in wall paneling—a combination of perforated hardboard matched with over 60 hanging fixtures (magazine racks, towel bars, shelf brackets, hooks, etc.) all instantly interchangeable without screws, nails or tools of any kind. Take a new look at those plans you're working on now—you'll find dozens of places to save space and add beauty and efficiency with "PEG-BOARD" panels and metal hangers.

Copyright 1953 B. B. Butler Mfg. Co., Inc.
See our catalog in Sweet's Light Construction File Section 4-E

BUILDERS: WRITE TODAY for complete descriptive literature, sample kit and prices.

B. B. BUTLER MFG. CO., INC. 3146 Randolph St., Bellwood, Ill.
all-plastic panel installations

One all-plastic panel is set in place with cutout area for fixtures. Workman nails corner moulding to studding to provide firm anchorage. No backing or insulative material is used.

... hardboard plank wall installation

Plank is 16 inches wide to cover one stud space. Has tongue and groove joint for concealed fastening. Scoring is to resemble 6 and 10-inch alternating planks. Application here is a basement amusement room.

Marlite’s ideal for remodeling any room in any building

Here are only a few of the many different types of interiors which can be remodeled faster, more economically with beautiful Marlite plastic-finished wall and ceiling panels. In the home, business, factory, and institution, Marlite is easily installed over old or new walls. The soil-proof finish slashes dollars off maintenance costs. . . . eliminates painting.

New Wood and Marble patterns, plus a complete range of striking colors, provide a versatile selection for any interior in new construction or remodeling. See genuine Marlite at your lumber and building materials dealer, or write for full-color architect and builder catalog. Marsh Wall Products, Inc., Dept. 403 Dover, Ohio. Subsidiary of Masonite Corporation.

The Marlite name on the back of every panel is your guarantee of satisfaction.
Grading of Hardwood Floors

The principal American producers of hardwood strip flooring have, through two major trade associations, adopted uniform grading rules and regulations for commercial practice. Approved by the Bureau of Standards of the U.S. Department of Commerce, these rules and regulations are enforced rigidly, in part by the organizations themselves. As a result dealers and consumers are assured high standard merchandise and the industry is protected against sharp practices. The two organizations are the National Oak Flooring Manufacturers’ Association, with headquarters at Memphis, Tenn., and the Maple Flooring Manufacturers’ Association, Oshkosh, Wis.

Every bundle of flooring produced by a member of either association is identified as to grade, and is guaranteed to meet all established specifications. Often the manufacturer’s name and a mill mark of identification are stated on each bundle.

There are no official grading rules for plank, parquet and block flooring, but generally the different grades correspond to those of strip flooring.

Hardwood flooring grades are based principally on appearance. All regular grades possess adequate strength, durability and resistance to wear, hence these qualities are not factors. Chiefly considered are such imperfections as knots, streaks, pin worm holes and in some cases sapwood and variations in color. Imperfections in processing also are factors.

OAK — In Clear Grade Oak the amount of sapwood is limited. Otherwise, variations in color are disregarded in grading. Red and White Oak ordinarily are separated, but that does not affect their grading. In most cases the average length of strip flooring pieces is greater in the higher grades. Oak is classified into three grades of quarter-sawned stock and four of plain-sawned. In descending order the quarter-sawned grades are: Clear, Sap Clear and Select. Plain-sawned grades are: Clear, Select, No. 1 Common and No. 2 Common. (See Table below).

MAPLE, BEECH, BIRCH — Rules governing the grading of Maple, Beech and Birch are virtually identical for all three species. Neither sapwood nor varying natural color is considered a defect in standard grades. These species are produced in three standard grades — First, Second and Third, with First being the highest. Each also is available in a special grade selected for uniformity of color.

PECAN — Pecan is processed in seven standard grades, two of which specify all heartwood, and one bright sapwood. Otherwise color variation is not considered.

How to Estimate the Amount of Hardwood Flooring Required for a Given Space

Strip Flooring

To determine the board feet of flooring needed to cover a given space, first find the area in square feet, then add to it the percentage of that figure which applies to the size flooring to be used, as indicated below:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>3/16&quot;</td>
</tr>
<tr>
<td>37½%</td>
<td>1/8&quot;</td>
</tr>
<tr>
<td>33⅓%</td>
<td>5/32&quot;</td>
</tr>
<tr>
<td>24%</td>
<td>7/32&quot;</td>
</tr>
<tr>
<td>33⅓%</td>
<td>1/8&quot;</td>
</tr>
<tr>
<td>25%</td>
<td>5/32&quot;</td>
</tr>
<tr>
<td>33⅓%</td>
<td>5/32&quot;</td>
</tr>
<tr>
<td>25%</td>
<td>1/8&quot;</td>
</tr>
</tbody>
</table>

The above figures are based on laying flooring straight across the room. Where there are bay windows or other projections, allowance should be made for additional flooring. It is always well to order 5% additional flooring to take care of floor layers’ cutting and possible damage.

Block and Plank Flooring

These are sold on the basis of floor coverage. It is necessary to provide only an additional 5% to floor area to compensate for floor layers’ waste and possible damage.

Rules Governing Re-Inspection

In the manufacture and grading of oak flooring the very best types of machinery, equipment and workmen are employed, but occasionally some pieces get into wrong grades by error.

Therefore, if the re-inspection results in a difference in favor of the purchaser of more than five (5) per cent in feet, as shown in the invoice, then the shipper will be considered as being in the wrong and shall issue a corrected invoice in accordance with the re-inspection, and pay all the expenses of the re-inspection.

If on the other hand, the difference is only five (5) per cent or less in feet, then the party making the complaint shall not be entitled to any reduction from the invoice and shall furthermore, be charged with all the expenses of the re-inspection.

The quality and condition of the oak flooring when it leaves the manufacturer is held to govern the re-inspection.

AMERICAN BUILDER
Cement application over furring. When the base surface (masonry, rough plaster, rough concrete, or open joists) does not provide a satisfactory base for cement application, a recommended method is to install 1x3-inch cross furring, 12 inches on center and cover with gypsum board or lath. This provides a sound base for cementing.

Mechanical installation of acoustical tile. There are several mechanical suspension systems which can be used for application of acoustical tile. The diagram above shows one recommended method. Metal carrying channels and furring strips support a surface of gypsum sheathing. Ceiling tile is screwed to this surface.

Application of acoustical tile to wood furring by nails or screws. By the use of cross furring 12 inches on center, acoustical tile may be applied by nailing or screwing, in spite of an unsatisfactory base surface. When this method is used it is important to cover the furring with a layer of building paper to prevent "breathing" at the joints.

Mechanical suspension of ceiling tile. The metal T-runners, to which the ceiling tile metal pans are clamped, may be nailed or screwed directly to wood, or suspended from metal hanger angles, as shown above at left. Another method, shown at right, calls for wire suspension of channels, to which T-runners are clipped 24 inches o.c.
NEW NAME in QUALITY TILE!

AMERCO PLASTIC WALL TILE
* Precision-Engineered!
* Non-Slip Back!
* Easier Installation!
* Minimum Clean-up!
* 17 Decorator Colors!
* Super-Gloss Finish!
* Contour Edges!
* Top Quality-Low Cost!

BEST VALUE!
You be the judge! Finest tile quality... at the right price. Send for price lists and FREE SAMPLES of AMERCO Plastic Wall Tile. Convinced yet?

Write, Phone or Wire Dept. B

177 Broadway
New York 7, N. Y.
Rector 2-3469

... how to apply finish plank

(1) Horizontal application: Nail horizontal furring strips to wall framing or anchor strips securely to masonry walls. For wall areas longer than 12 feet, install vertical furring strips on nailing bases for butt ends of units. (2) Begin in corner of room, face nailing at wall and ceiling junctures. Cover exposed nailheads later with molding. (3) In existing construction, butt plank against door or window trim or replace trim after application. In new construction apply trim over plank along edges of openings. (4) Horizontal application should begin at base of wall with tongues up. Nail or staple to furring strips 12 inches O.C. (5) Vertical application: Space horizontal furring strips as shown. (6) Apply vertical plank with tongue edge leading. Nail or staple to each strip. (7) Ceiling application: cross-fur joints with wood strips 12 inches O.C. Nail or staple units to strips. Face nail centers of 16-inch plank or apply heavy adhesive at intermediate furring strip locations. (8) Butt-end joints must center on furring strips and should be covered with building board strips, moldings or beveled to form a V-groove joint. Ends of plank should be face nailed to furring strips. (9) Apply plank to gypsum wallboard or plaster that is sound, reasonably level, and dry, using heavy adhesive and supplementary nailing. spacing nails 16 inches O.C.

... movable steel office walls

For installing asbestos cement-type wallboard use Hassall wallboard drive screws. Specifically designed with spiral threading for better holding power. Supplied with nickel-plated finish with either casing or button heads. Advise quantities. Prompt delivery.

JOHN HASSALL, INC.
190 Clay Street
Brooklyn 22, N. Y.
Established 1850

Virginia Metal Products Corp.

Movable office partitions offer easy adaptability to changing needs in small commercial and industrial buildings through interchangeable panels, doors and other fixtures, and simplified installation.
NEVAMAR® kitchen adds lasting value to any home...

Ready-to-install NEVAMAR Units Are Now Available
For New Building or Remodeling

With NEVAMAR, the pre-finished surfacing material, you can add greater value to the home you build or the kitchen that you remodel. Use NEVAMAR to surface your cabinets and sink tops or you can obtain ready-built units for quick, easy installation.* A NEVAMAR-surfaced kitchen is designed for a lifetime of service and satisfaction. This super-hard laminate never needs painting or re-finishing. It shrugs off scars, stains, scratches... even cigarette burns! It is available in a wide range of colors and patterns, including the currently popular wood grains. Write today for samples and complete information.

* We'll be glad to put you in touch with manufacturers of NEVAMAR-surfaced cabinets.
...gypsum wallboard layout

Layout for walls and ceiling of bedroom, using 1/4-inch gypsum wallboard. For lowest cost and maximum use of sheet material, board should be carefully laid out in standard lengths. This will reduce joints and help workmen get best results. Fall-back board may be used for insulation and vapor barrier.

...installing 2-ply gypsum wallboard

First step: Nailing the 1/4-inch panels to studs and joists

Then second or face-ply is cemented to first layer with laminating adhesive

Joints are concealed by reinforcing tape and cement which also feathers out at edges

...gypsum wallboard framing

Before applying wallboard, check these framing details: (1) Straight studs. (2) Uniformly dimensioned lumber, to insure flush nailing surfaces. (3) Outer faces of all bridging, fire stops and headers should be flush with nailing face of studs. (4) Nailing faces should be flush and in true alignment with plate faces, top and bottom. (5) All electrical outlets, heating ducts, etc., should be positioned for flush alignment with finished surface. (6) Nailing surfaces should be provided on both sides of vertical corners.

CLAY TILE

Clay tile is made from clay and/or other ceramic materials formed to thickness and shape and baked to produce a durable material. The two general types are "glazed" and "un-glazed." Either may be used for wall finish but for most domestic installations the glazed finish is preferred. The glaze may either be clear or opaque. Almost any color or combination of colors is available, in a veined, mottled or rippled effect.

LINOLEUM AND RUBBER

Linoleum and rubber types of wall coverings are available in rolls or cut tiles in varying sizes. Thicknesses, tile sizes and roll widths vary with the manufacturers.

Linoleum or rubber materials may be applied directly to any smooth surface, above grade, provided no seepage occurs on the base surface. This includes such surfaces as one- or two-coat plaster, hardboard, plywood, gypsum lath or dry concrete walls. It is well to note that if the surfaces to be covered are not smooth and level the glossy surface of the material will cause highlighting at random which will result in a warped and wavy appearance of the wall or surface. All unevenness is accentuated after the surface material has been applied.

AMERICAN BUILDER
Flush mounting of laminated plastic is usually preferred wherever sink size is standard. Recessed rims give greater flexibility, since they can be formed to fit sinks of unusual size or shape, but are more difficult to apply. Caulking material must be used under all metal moldings in either case.

Left: Simplest method of building outside corner is to use an applied molding. Molding may be covered with plastic sheeting or painted. Right: Simple inside corner construction. Corner moldings of veneer-on-metal or plastic-covered wood moldings may be used.

... getting ready to decorate

Before decorating gypsum wallboard, be sure finish-cement over joints has been feathered out smoothly. Conceal nailhead depressions with finishing cement.

Joint, treated nailhead depressions and other surface irregularities should be lightly sanded to insure smooth receiving wall.

Showing difference in texture between feathered out joint and field of wallboard. Joint is usually glossier; primer equalizes difference in texture.

To obtain full, uniform coat, sizer should be brushed on with semi-circular stroke. Primer and/or sealer give bonding surface for paint.

... applications of premolded membrane

In this application, membrane functions as both vapor pressure shield and capillary membrane. Treated sleepers are embedded in concrete.

Here static sleepers are bonded to membrane with mastic. Where perimeter insulation is desirable, it can be set between sleepers and box-framed at ends.

When a subfloor is desired, a double dead air space is formed in this manner between the two membranes.

In this installation a single layer of premolded membrane is cemented to the slab to serve as waterproofing membrane and flooring underlay.
To make your linoleum underlays hold tightly and lie flat permanently, secure them with Hassall annular-threaded linoleum underlay drive screws. They are cement-coated for maximum gripping power. Heads are flat countersunk type. Size: 1 1/4" x #3 gauge. State quantity when writing for prices to:

JOHN HASSALL, INC.
152 Clay Street
Brooklyn 22, N.Y.

Established 1850

Save on DRY WALL CONSTRUCTION

Faster Work With a GYP "C" JACK

- Eliminate back-breaking labor.
- Ensures true alignment and smooth finished job.
- Gives workmen complete control during installation.

GYP "C" JACKS ARE SAVING BACKS

Builders have found that workmen can install ceiling panels all day long and not become exhausted and workmen do a faster, more satisfactory job with the new GYP "C" JACK.

The new GYP "C" JACK consists of three parts . . . a 21 by 21 inch base . . . a top spring-steel spider arm for holding gypsum boards . . . a jack assembly capable of elevating a 1/2" by 1" by 12" gypsum board. The GYP "C" JACK contrasts to a height of 60° and can be extended to a height of 90°. GYP "C" JACK extensions are available for higher ceiling installations.

In cutting (top), allow for variation between inside and outside corners. Never attempt to force sheets into place or butt tightly against corners or into any type moulding. Left: Drill half way through moulding with bit slightly larger than head of 5d finishing nail. Bevel back-edge of sheet slightly to permit panel to move freely into mouldings.

... laminated plastic sink top

Typical sink top installation with laminated plastic. Material has great durability and is easily cleaned.

... plastic-faced panel do's and don't's

In cutting (top), allow for variation between inside and outside corners. Never attempt to force sheets into place or butt tightly against corners or into any type moulding. Left: Drill half way through moulding with bit slightly larger than head of 5d finishing nail. Bevel back-edge of sheet slightly to permit panel to move freely into mouldings.

... panel roof deck

Exposed joints of panel roof decking provide attractive ceiling for living room. Below: Application details for flat or pitched panel roof deck. Panels may be used as a base for built-up roofing.

Left: First fiber tile is applied to starter strip. Entire first row should be applied across ceiling before second row is installed on opposite side of strip. Second row (above) takes shape opposite starter course.
Mr. L. L. Darley, builder of the new "Young America" House and other fine homes at Knollwood Acres, Mount Carmel, Connecticut.

"THERE ARE SO MANY PLACES IN A HOME WHERE YOU CAN USE G-E TEXTOLITE* PLASTICS SURFACING TO ADD BEAUTY AND UTILITY"

"When I first began using G-E Textolite, I concentrated mostly on tops for kitchen sinks and cabinets. But I quickly found out that there are dozens of other places around the house where you can take advantage of its beauty and extreme durability."

Mr. Darley has been building fine homes for many years, and knows how highly home buyers value quality and good looks. That's why he uses G-E Textolite surfacing for kitchen sinks and counters, fine bathroom vanities, wall cabinets, tables—and for so many other places around the homes he builds.

See for yourself the beauty of the new G-E Textolite patterns, including distinctive G-E designs and nine new wood-grains. A copy of the new full-color pattern booklet is ready for you. See your nearest G-E Textolite distributor or write: General Electric Company, Chemical Division, Section 321-3B, Pittsfield, Mass.


LAUNDRY COUNTER TOPS  WALL AND BASE CABINETS  KITCHEN SINKS
FINE FURNITURE  LINEN CLOSET SHELVES  DINETTES  PANTRY SHELVES
BATHROOM VANITIES

... AND WHEREVER YOU WANT BEAUTY PLUS EXTREME DURABILITY!

You can put your confidence in—
GENERAL ELECTRIC

APRIL 1953 373
Checkerboard designs "on the square" can be laid faster when all of one color tile are installed in diagonal rows. Lay guide tile (about 20), then follow numerical order.

**PREFERRED FOR EVERY TYPE OF INSTALLATION**

**Moulflex**

IMPROVED VINYL-PLASTIC TILE FLOORING

- Available in both low-cost standard gauge and 1/8" heavy-duty thickness.
- Vinyl-Plastic throughout—no felt backing.
- Lasts for years!
- Can be installed on, above or below grade.
- Resists dirt, grease, acid, alkali and fire.
- 13 striking color combinations.

*Write today for full details!*  
**DEPT. M5-4**

**MOULTILE, INC.**

FLOORING SINCE 1929  
Juliet, Ill. * Long Beach, Calif. * Newburgh, N.Y.

**INSULATING BOARD**

Insulating board applied in paneling design

If gypsum wallboard is the base, the surface should be sealed with one coat of primer; around tubs two coats should be used. Only a non-metallic tape and cement flush-joint system should be used on the gypsum board. An opening of about ¼-inch should be left between gypsum board and recess of tubs to permit grouting with a water-resistant, non-shrinking plastic compound at the time the surface material is applied.

**METAL TILE**

Metal tiles come with a wide variety of baked enamel finishes and are of a flexible nature permitting bending for interior or exterior corners without damaging the
HERE ARE NEW METHODS WHICH MEAN SUBSTANTIAL SAVINGS IN LABOR AND MATERIALS FOR MODERN CONSTRUCTION

in both NEW building and MODERNIZATION

WRITE TODAY FOR RECOMMENDED SPECIFICATIONS ON
1. Setting Genuine Clay Tile. 2. Insulating Ducts. 3. Insulating walls and ceilings either by Direct Adhesion or in conjunction with Surface Anchors. 4. Installing floor runners; bonding furring strips.

1. Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 244 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.

2. Plaster applied over wire and cork which has been attached to aluminum SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cream and Ferguson. BUILDER, Turner Construction Co.

3. FIBERGLAS — insulation Type PF-613, 2” thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 68, New York, N. Y. CONTRACTOR, William J. Smith, Inc., New York, N. Y.

4. WOOD RUNNERS in solid oak are bonded with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2” solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

VISIT MIRACLE EXHIBIT AT ARCHITECTS SAMPLES CORP.
101 PARK AVE., NEW YORK CITY

APRIL 1953

finish. Solid colors, mottled and hammered effects, make available a wide variety of color combinations. Base material of tile may be stainless steel, steel or aluminum. Metal tile installation follows the method outlined for other tiles. They may be applied to almost any solid, clean, level surface.

A special wall tile of porcelain fused on 20-gauge steel is installed by cementing tiles to special foundation board %4-inch thick and scored in %4-inch squares, which align the tiles perfectly and speed installation.

COATED AND UNCOATED HARDBOARD

Wall-size panels with a hardboard base and factory finished by a coating, baked on, in a variety of colors, are applied in the same manner as unfinished hardboard. See the section on "Plywoods and Hardboards" for basic properties and details on how to handle, cut and fabricate hardboard panels.

Hardboard is also available uncoated for interior wall treatment. Two patterns are available—leather and tile-scored.

Factory-finished panels with hardboard base are usually %4-inch thick. Allowances should be made in construction for this thickness. Standard sizes are usually 4-foot widths and lengths of 4, 6 and 8 feet. Smaller widths are available.

GLASS PANELS

Recommended thicknesses of glass panels for bathroom and kitchen wall treatment are %4 and %4 inches. Weight is approximately 4% pounds per square foot of %4-inch thickness. Glass panels may be installed over any hard, firm wall surface which is of true plane, plumb and straight. A bond coat should be painted on the wall surface to get good mastic adhesion. An allowance of %4-inch should be allowed for setting behind the glass panel. Mastic is applied in gobs on the reverse side of the panel. Five gobs would be about right for an 8 by 12-inch plate. Sufficient mastic should be used to insure that at least 50 per cent of the total area of the glass panel is bonded to the backing.

PLASTIC SURFACES

Plastic surface panels or tiles for wall treatment consist of laminated plastic material bonded to composition building boards and installed either directly to stud or solid walls in the same manner as plywood panel installation. Standard thickness is %4-inch. Panel sizes vary greatly with manufacturer, starting at about 24-inch widths. Solid walls should be prepared plane-level and panels may be bonded to walls by the use of adhesive cements. Receptacle-type mouldings should be used on wall treatment installations of plastic finished panels.

INSULATING BOARD

Decorative insulating boards include sheets, plank and tile boards which are well standardized. Sheets are made in standard 4-foot widths, 8, 10, and 12 feet long. Plank is manufactured in 8, 10, 12, and 16-inch widths and lengths of 8, 10, and 12 feet. Tile is generally made in 12 by 12, 12 by 24, 16 by 16 and 16 by 32 inch sizes. They are prefinished in a variety of plain and colored surfaces and are as adaptable for remodeling and re-decoration as for new construction.

GYPSUM BOARD

There are three thicknesses of gypsum wallboard—%4, %6, and %6 inch. The length varies from 4 to 12 feet. The %4-inch board is made with square edges only. It is a lower-priced product designed to serve specific purposes, such as (1) temporary repairs and alteration work; (2) as a covering over old wall surfaces, and (3) for ceiling repairs where light weight is needed.

The %6-inch standard gypsum board and %4-inch wall board is available with square, beveled and recessed edges.
Insulating gypsum wallboard is made with all types of edges and thicknesses. Aluminum foil is firmly attached to the back surface of this board to provide reflective insulation and act as a vapor barrier. 

Gypsum tile board is made in 3/8-inch thickness only, and from 6 to 10-foot lengths. These boards have square edge and an ivory surface but with tile indentations 1/2 inches square.

Wood-grained gypsum board is made in 3/8-inch thickness and from 6 to 12-foot lengths. Edges are square or beveled. A paper having a photographic reproduction of knotty pine, mahogany, walnut, or figured aspen is used.

Preparing the Framework

Gypsum wallboard, like any other wall or ceiling finish, requires level and true framework. The wood supports should be properly spaced and beveled in a workmanlike manner. Faces of studs should be lined up with the faces of plates at top and bottom. Studs and joists should not exceed 16 inches on centers, except that their spacing may be increased to 24 inches when 1/2-inch wallboard is used. Substantial nailing surfaces should be supplied at all interior and exterior corners so that the ends of boards forming the corners may be securely nailed.

ASBESTOS-CEMENT FLAT BOARDS

An attractive stone gray in color, asbestos boards are hard and smooth on one side and slightly textured on the other. They are a practical material for structural wallboard use and are highly serviceable for exterior surfaces as well as interior walls.

Made in sheets 1/8 to 3/8-inches thick, four feet wide and eight feet long, the boards are light enough to be handled easily. Nailing is the usual method of application, although they can be put on with a special adhesive, supplemented by nails, moldings or other overlapping devices. As an alternate to nails, wood screws may be used.

WALLBOARD AND TILE

Wallboard and ceiling tile made of layers of wood or fiber or paper bonded with resins are available. Wallboard panels are waterproofed and measure up to 8 feet wide and 18 feet long. Panels 5/8-inch thick with pebbled surface are ideal for either painting or papering.

Dry-built, full-wall construction is economical with the use of these laminated fiber panels, waterproofed and with strong insulation value. The wall panels come in standard sizes 4 feet wide by 6, 8, 10, 12, 14, 16, and 18 feet long; and full-wall sizes 8 by 12, 14, 16, and 18 feet long. Surfaces are prepressed to provide a perfect painting surface. Ceiling tiles of similar material are cut to 12-inch squares, with edges moderately beveled. Manufacturers claim they are so completely waterproofed that they can withstand even unusual moisture conditions. Their natural finish is decorative, washable, and will take oil-base paints.

Decorative Wallboards

Also available are 7-ply laminated fiber panels in striped design, guaranteed to be permanently crackproof and possessing effective insulating qualities. They are compressed to 1/8-inch thickness, and are available in sizes 4 by 8 feet or on special order in larger sizes. They are applied directly to studs with the same type of fasteners previously mentioned. For baths and kitchens a pre-finished fiber board is available in giant size panels 8 feet wide by 12 feet long, as well as standard 4 by 8-foot size with the glossy tile-like surface embossed in various colors in squares.

Decorative Tile and Tileboard

Decorative tileboard is used almost exclusively on ceilings. These boards have interlocking tongue-and-groove joints with extra-wide nailing flange so that adjoining units fit together firmly and smoothly, and allow concealed fastening. They can be applied with stapling gun, without use of special clips. Many attractive patterns may be worked out with ceiling tile, used with or without color variations and combinations. Intricate patterns, however, require extra care in installation. They start from the center of the ceiling, and care must be taken to insure adequate furring where tiles of varying sizes and shapes are used.

ACOUSTICAL MATERIALS

Perforated acoustical fiberboard tile are particularly desirable because of their comparatively low cost and ease of maintenance. Most are factory painted and require no finishing treatment on the job but may be painted without losing acoustical qualities. The beveled units may be cemented to plaster, concrete, plasterboard ceilings, or mechanically fastened to wood furring or directly to plasterboard. The manufacturer provides a special self-clinching nail for attaching directly to plasterboard.

Glass Fiber Tile

Acoustical boards and tile made of glass fiber are well suited to suspended ceiling constructions because of their low weight and dimensionally stable characteristics. Standard acoustical adhesives may be used. However, they are not recommended for use on surfaces which are subject to frequent condensation or under conditions where the tiles will remain wet, as water-staining may result.

Mineral Fiber Tile

Another type of acoustical tile is made from mineral fibers. It is designed in both a marble pattern and etched surface. The various methods of installation with adhesives, mechanical erection, or nailing direct to wood strips according to manufacturers' specific recommendations all have advantages depending upon the specific type of construction, but adhesive application is the most widely used method and is recommended where a suitable base exists.

MECHANICAL SUSPENSION METHODS

Cold-rolled, 16-gauge steel channels are wired in some installations to furring channels for suspended ceilings or fastened directly to ceiling or wall construction for directly applied acoustical finish. Channels are set at approximately the center line of the ceiling tiles, eliminating the lining-up with the joints. Combination "clip-snap-on" metal acoustical wall trim composed of extruded aluminum or rolled 22-gauge galvanized iron is angle punched to receive the clips which not only hold the tile in place but also receive the finished trim after the job is completed. After the ceiling is laid, Cove molding is snapped into place, using the clips already set to hold the tile.

PARTITION SYSTEMS

Of particular interest to the builder who has occasion to erect small offices or light commercial and industrial structures, office partition systems are available in various combinations of wood and steel, pre-finished boards, insulating boards and other combination materials.

Steel and Glass Panels

Several types of steel and glass panels are available, most of which offer interchangeable panel and door sections, universal doors, reversible hardware, identical fittings between panels and linking panels to posts, and other conveniences of erection.
Versatility of glass as a building material has given impetus to the development of a modern style of architecture distinctly in step with the times, with entire walls of glass. Unlike single window units, these consist of multiple windows banked in a group. In homes now being built, from six to twelve such units go into one wall, usually the focal wall of the living room. Luxury ranch type home above utilizes Twindow double-glazed units.

**TYPES OF GLASS**

There are many types of flat glass available to the builder today which were unheard of 30 years ago. In addition to the centuries-old spun glass or crown glass and blown glass, there are heavy drawn and fluted drawn sheet glass, polished plate, rough plate, rolled sheet, fluted rolled, rough cast, figure rolled, tempeived plate, opal and colored opal, safety glass, pressed glass, ultra-violet glass, heat-resisting glass, and a host of others including corrugated, glass block, and architectural glass.

**Sheet Glass**

Sheet glass used for windows is commonly single strength. The safe glazing size must always be considered so that the glazed area will have sufficient strength to withstand wind stresses. The table below summarizes this information and indicates some of the basic sizes of window glass available.

<table>
<thead>
<tr>
<th>Weight per sq. ft.</th>
<th>Thickness</th>
<th>Manufactured Sizes</th>
<th>Safe Glazing Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 oz. 21 oz.</td>
<td>2/32&quot; 1/16&quot;</td>
<td>60 x 40&quot; 81 x 42&quot; or 68 x 50&quot;</td>
<td>24 x 24&quot; 30 x 30&quot;</td>
</tr>
<tr>
<td>26 oz. 32 oz.</td>
<td>1/8&quot; 3/32&quot;</td>
<td>81 x 45&quot; or 70 x 51&quot;</td>
<td>35 x 35&quot;</td>
</tr>
<tr>
<td>32 oz.</td>
<td>1/4&quot; 1/16&quot;</td>
<td>74 x 39&quot; or 58 x 30&quot;</td>
<td>40 x 40&quot;</td>
</tr>
</tbody>
</table>

Sheet glass is made in various qualities: "firsts" for cabinet work; "seconds" for picture framing and glazing; "thirds" for houses, schools, and offices; "fourths" for general glazing; and "horticultural" for greenhouses. Heavy drawn sheet glass is used as a substitute for plate in cheaper construction.

**Plate Glass**

Plate glass contains more lime and less soda and magnesia than sheet glass, and is made by the semi-continuous method of rolling, while sheet glass is made by the fully continuous method of drawing. Prior to 1923 plate glass was made by pouring molten glass onto a casting table. Plate glass is ground and polished, which may remove as much as half of its original thickness, leaving a smooth, glossy, and optically true glass, structurally sound and highly attractive. Thicknesses range from 3/8 inch to 1 1/2 inches and sheet sizes are available up to 127 by 286 inches.

Heat-absorbing plate glass excludes much of the heat in the sun's rays while transmitting most of the light. It is especially useful in industry where it is desirable to reduce interior temperatures which would otherwise be raised by the sun's heat. Exclusion of this solar heat means substantial savings of cooling costs in air-conditioned buildings. Such glass may be plain, corrugated, or wire-meshed.

**Tempered Plate Glass**

Tempered plate glass is made by re-heating a piece of plate glass and then rapidly cooling the surface with air jets. This sets up a system of balanced stresses and strains in the material which makes it many times as strong as ordinary plate glass. It cannot be cut once it has cooled, for this would shatter the balance of strain and stress and reduce the whole piece to fragments. Consequently, it must be cast to exact size before it is tempered.

Widely used in modern store fronts and entrances, as well as in display cases and some shower stalls, tem-
Pittsburgh Glass helps you get

sales instead of "stalls"

CARRARA GLASS on bathroom and kitchen walls stamps a home as having exceptional value. Builders everywhere have found that Carrara is an important factor in turning casual "lookers" into buyers. For it is recognized nationally as a high quality wall material. Its rich beauty and polished surface appeal to everyone. So does its permanence—the fact that it doesn't check, craze, or fade with age. Being glass, people know it's extremely easy to keep clean. And there are ten attractive colors to choose from. For tub recesses and stove backings, large Carrara Panels give the advantages of this structural glass at small cost.

WINDOW WALLS are a much-wanted feature in the modern home. In many cases, too, they reduce building costs. When these walls are glazed with Solex-Twindow, unmatched comfort and greater enjoyment of the outdoors from within the home are offered the buyer. These units are made up of two panes of glass (see cutaway below). The outer pane is green-tint Solex, the inner is clear Plate Glass. Between them is a sealed-in air space. Thus, you combine the heat-absorbing, sun-glare-reducing properties of Solex, with the high insulating value of Twindow—"the window with built-in insulation." Handling and installation are safe, easy and quick, thanks to the stainless steel frame around the entire unit. Architect: Carl A. Strauss, Cincinnati, Ohio.

Every nickel you spend on glass shows. And the results always far outweigh the cost.
WALL MIRRORS of Pittsburgh Plate Glass, like the one in this living room, have immediate appeal for the prospective home buyer. When you install wall mirrors in new homes—or include them in your renovating work—you make your selling job much easier. That's because these mirrors give a room a smarter, more sparkling and luxurious look. Besides, they can actually make a small room look larger—increase its apparent length or width. To cut on-the-job costs and simplify installation, Pittsburgh Mirror Brackets come packed with each custom-made mirror you order. Your local Pittsburgh branch or glass distributor can give you all the facts on these cost-saving brackets. Why not ask him?

Build it better with Pittsburgh Glass

See Sweet's Builders Catalog for detailed information on Pittsburgh Plate Glass Company products.

PAINTS - GLASS - CHEMICALS - BRUSHES - PLASTICS - FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

APRIL 1953
The Distinctive, Modern Look of Structural Corrugated Glass Catches Homes Buyers' Eyes Everywhere

A simple, effective partition of Structural Corrugated Glass by Mississippi has changed this from just another doorway into a grand entrance...it has created something unusual and desirable. And this is what today's home buyer wants. Something modern...something practical...something beautiful.

Structural Corrugated glass floods areas with softened, "borrowed light" that flatters interiors...makes rooms appear larger. It creates an air of distinction and luxury impossible to attain with any old-fashioned material.

Glass is the modern material...easy to install and maintain. And translucent, figured glass has tested sales appeal. It sells on sight right and sells on sight.

Give your homes that "different look" that buyers want. See your regular glass distributor or supplier for Mississippi Glass. Many patterns and surface finishes to choose from.

Write today for free booklets, "Modernize Your Home With Decorative Glass" and "Figured Glass by Mississippi." Photographs of actual residential and commercial installations. Many ideas on ways to use this new medium.

VA, COMPANY
88 ANGELICA ST. SAINT LOUIS 7, MO.
NEW YORK - CHICAGO - FULLERTON, CALIF.

AMERICAN BUILDER
GLAZING COMPOUND
Exclusive use of elastic glazing compound.

EDGE CLEARANCE
1/8", 3/16", 1/4" at all edges depending on size. Distribute proportionately. Do not force.

LATERAL CLEARANCE
At least 1/16" for glazing compound.

Patterns of glass is available in a wide range of colors, and may also be colored on one side for use in signs and lighted displays.

Patterned and Diffusing Glass
The use of obscure glass to prevent vision while admitting light is not new, but in recent years manufacturers of glass have come up with a wide range of attractive designs worked into the surface of both sheet and plate glass, either by pressing, etching, or sandblasting. The size of the individual pane of glass and the amount of vibration which it will receive from walking or street traffic will govern the thickness of the glass to be used. If protection against breakage and fire, as well as privacy, are desired, a figured wire glass may be installed. Glare reduction and heat reduction are also built into various types of obscure glass for industrial and commercial purposes.

glass panels installed around bathtub

1. After tub has been levelled, place roll of mastic around rim for waterproofing. Also, butter studs with mastic before setting glass panels.

2. Set the plate at the back of the tub first. Then merely nail through plasterboard flanges and use special clips supplied.

3. Do the same thing with the end panels. Let plasterboard extend beyond tub to next stud. If wainscot is 48" high, follow some sequence in setting second course.

4. Clean glass and fill joints carefully with the pointing compound supplied. This assures a thorough waterproofing installation.

After the tub has been levelled, place a roll of mastic around the rim for waterproofing. Also, butter studs with mastic before setting glass panels.

Clean glass and fill joints carefully with the pointing compound supplied. This assures a thorough waterproofing installation.
Few modern homes are being built today without at least one large double-glazed picture window. A double-glazed unit is composed of two lights of glass held in place with a metallic spacer and rubber bond, making an hermetically sealed air space. In some instances, windows may be similarly triple glazed, and a few cases have had as many as five lights of glass separated by sealed air spaces.

Double-glazed units are available in approximately 50 standard sizes ranging from 35½ by 36 inches to 72 by 96 inches. When needed, special sizes may be obtained. Installation can best be accomplished by following closely manufacturer’s instructions, which include roughly the following data:

(1) Openings must be square, free of twists or glazing obstructions. Units should not be set in poorly constructed frames, inadequate to bear the weight of the sash (6 lbs. per sq. ft.), nor be of unseasoned lumber which might warp.

(2) Sash must literally float in the opening.

(3) Use of elastic glazing compound is recommended. Do not use putty.

(4) Two lead or treated wood setting blocks as wide as the thickness of the unit are to be placed one-fourth of the opening width from each end of the unit.

(5) Place sufficient glazing compound on the back of glazing rabbet. This allows unit to be positioned, filling voids behind edge of glass.

Structural Glass

Structural glass was originally developed for sanitary purposes for washroom partitions and walls, but is now widely used also for store fronts and similar installations. Stronger and cheaper than either marble or tile, it is uniform in size, available in many different colors, and provides a permanent exterior surface of durability and beauty. It is not tempered, and may be cut, laminated, or otherwise worked in process of construction. It is also popular for bathrooms and kitchens.

Corrugated structural glass, a heavy cast or rolled glass, is available either clear or sandblasted, and may be obtained in two corrugations, one with waves one inch deep on 2⅛-inch centers, and the other ⅜ inch deep on 2½ inch centers. The former meshes with structural steel corrugated siding and may be installed along with corrugated steel in industrial buildings.

Architectural Glass

Architectural glass, as a special classification, is similar to obscure or patterned glass, but it includes as a group those sheets or panels which have very deep corrugations or patterns and are frequently patterned on one side and flat on the other. Surface finishes may be clear, fire-polished, matte, mirrored, sand-fused; actual
Everything you need to lay up PC GLASS BLOCKS

from one reliable source

DECORATIVE PATTERNS

ARGUS For decorative and lighting effects. Outer faces are smooth, inner surfaces have round flutes sealed at right angles to each other. Available in nominal 6, 8, and 12 inch squares and 6" and 8" corner and 8" radial patterns.

ARGUS PARALLEL FLUTES Same as Argus pattern except that both sets of flutes are parallel. Available in nominal 6, 8, and 12 inch squares. 8-inch block also made with fibrous glass insert to further diffuse light and cut heat transmission.

DECORA Outer faces are smooth. Block is almost transparent. Can be tastefully combined with other block patterns. Available in nominal 6, 8, and 12-inch squares plus 8" radial and 6" and 8" corner styles.

SAXON Gives good light transmission with moderate diffusion. Used where privacy is important. Inner surfaces are lightly etched. Available in nominal 12-inch squares and 6-inch corner blocks only.

VUE Transparent pattern permits general vision beyond glass block panel. Often used as vision strips in standard block panels to avoid "shut in" feeling. Both faces are smooth. Available in nominal 8-inch squares and radial shapes.

FUNCTIONAL PATTERNS

SOFT-LITE* BRISTOL S55 LX General purpose light diffusing block. Contains diffusing screen to soften light, provide extra insulation. Soft-Lite* edge eliminates glare at edge of block. Available in nominal 8-inch squares only.

SOFT-LITE* ESSEX B55 For general light diffusing or below eye level use in sunlit areas. Often used with Soft-Lite Prism B55. Available in nominal 12" (with fibrous glass insert) and in 8" size.

PRISM A55 For northern elevations where there is no sunlight. Used above eye level, throws light up to ceiling and to interior walls. Gives very good light transmission for critical seeing tasks. Available in nominal 8 and 12-inch squares.


BRISTOL B9 Light diffusing block for northern locations not exposed to direct sunlight. Provides moderate glare control while thoroughly diffusing light. Available in nominal 8-inch squares only. Often used with Prism A55 pattern.

ACCESSORY MATERIALS

WATERPROOFING COMPOUND Add to mortar when necessary to meet PC specifications.

PC OAKUM For lateral cushioning and packing of panel edges.

PC ASPHALT EMULSION For waterproof joints on sills, and as an adhesive for expansion strips.

PC EXPANSION STRIPS For side jamb and heads of panels.

PC WALL ANCHORS To anchor panel where required.

PC WALL TIES For reinforcing panel.

Pittsburgh Corning Corporation

PITTSBURGH 22, PA.

1 Send complete 40 page catalog on PC Glass Blocks for industrial, commercial and public structures.

0 Send 24 page catalog on PC Glass Blocks for residential construction.
GLASS PARTITION

...adds a lot for a little!

You know how prospects go for the extra little touches—like the panel of patterned glass in this bathroom. This glass provides privacy, but passes light through. Just a few feet of inexpensive glass—but it marks the house as different, appealing.

Many builders have used Blue Ridge Patterned Glass to give homes extra—and quicker—saleability. They've used panels by the entrance door—as a partial or full partition between rooms—as exterior glazing where they want both daylight and privacy.

Blue Ridge Patterned Glass does double duty for you—for it decorates on both sides—and needs no finishing. It comes in a wide range of patterns. Shown here (quarter size) are just seven of the most popular patterns for homes. Your L'O-F Distributor or Dealer can show you samples of these and many more. Call him. And mail the coupon for our book of decorating ideas.

BOOK OF 42 DECORATING IDEAS, “New Adventures in Decorating” shows how leading architects and decorators have used this lovely glass to add light and distinction to home interiors. Send coupon for free copy.

GLASSE BLOCK

Glass blocks are made of two sections, or lenses, fused together with a hollow, moisture-free chamber between. This dead air space makes an effective temperature barrier. Mortar edges are coated with a grit-bearing plastic coating to insure adherence to the mortar. Masons with ordinary tools can lay glass block without difficulty. In most installations it is necessary to use an expansion strip at jambs and heads of panels, plus a good gun-grade non-hardening caulking compound around all joints. Wall ties and panel anchors may be used to tie the panel to the masonry wall and to anchor the panel to the jamb.

Blocks are available in a wide range of patterns and several standard sizes, including radial blocks and curved corner blocks. Some manufacturers are offering “prefabricated” panels of glass block, and one at least is marketing a complete window unit in steel frame with sliding vision strip at the bottom. Ventilator blocks with stainless steel or glass louvres are also available to provide ventilation in situations where a solid glass block wall panel is not desirable.

MIRRORS

Mirrors are sometimes made of ordinary drawn sheet glass, but better grades utilize polished plate glass, with highly polished surfaces and backs of either silver, gold, or casting bronze. Maximum sizes of mirrors are governed by maximum sizes of plate glass. Copper back mirrors are made up to 86 by 168 inches.

GLAZING AND CAULKING COMPOUNDS

For glazing wood sash, it is recommended that whiting putty or whiting putty and white lead conforming to U.S.G.M. Spec. No. 283 be used. For glazing metal sash, use whiting putty with 5 percent litharge or a metal sash elastic glazing compound. FHA specifications which call for whiting putty require a type consisting of finely powdered natural chalk, a minimum of pure tinting color, and pure raw linseed oil.

Elastic glazing compounds differ from ordinary putty chiefly in that specially treated oils are used so that the compound will remain elastic even under extreme conditions of vibration and exposure to the elements.
Garage Corner

Litharge, which is lead oxide, is added to putty to make it set from the bottom rather than just skimming the top. White Lead and Whiting Putty consists of 10 per cent white lead with regular whiting putty. However, the trend today is definitely towards proprietary mastic glazing and caulking compounds. These are easy to use, are said to remain permanently elastic, are unaffected by heat and cold, do not harden in the container, and do not waste before being used, as is frequently the case with small amounts of unused putty. While many caulking compounds are made up for application by gun or from a tube, some also are made in pre-moulded strips for easy application by hand. Almost all are available in a wide range of tints to match wall surfaces.

Kitchens

Glass Blocks

Courtesy Kimball Glass Co.

Plan 4

Luxury Ranch Type House

Bath for Master Bedroom

Courtesy Kimball Glass Co.
PLASTIC GLASS PRODUCTS

There are two main types of plastic glass products: those which are “pure” plastic, and those which are a combination of glass and plastic. The well-known “plexiglas” bombardier’s lookout in military aircraft finds its civilian counterparts in roof hatches and skylights, in “blisters” which admit sunlight into modern ranch-type buildings.

Structural glass, impervious to steam, moisture, acids, chemicals, grease, and pencil marks, makes effective partition material for toilets and shower rooms. Compartments illustrated here have overall height of 5’ 8”. Walls may be large slabs instead of patterned ones.
Installed in place of sash, Insulux Glass Block hides outside views and makes a sound, weather-tight, insulating wall.

Daylight Engineering WITH AVAILABLE GLASS BLOCK
ENDS BASEMENT WINDOW PROBLEMS

Here's a way to end forever complaints about broken or damaged basement windows! Use panels of Insulux Glass Block.

A panel of Insulux Glass Block makes a sound, weather-tight, insulating wall that lets in light but blocks out sight. It is extremely hard to break and it can't ever rust or rot.

Supplies of Insulux Glass Block and all the installation materials are non-critical and immediately available. Installation can be made at the time the mason puts in the foundation (the 8" sizes fit 8" concrete blocks perfectly) or as replacement for old-fashioned sash in houses already built. In either case, installation is simple and easy ... requires only ordinary mason's tools.

One Insulux Glass Block job in a home can lead to others. In fact, anyone who wants light but not sight is a customer for Insulux Glass Block. Applications are practically unlimited.

Get all the information about the many profitable glass block applications you can find in the average home. We'll be glad to send you complete details about this, and other, uses of Insulux Glass Block panels. Just write Insulux Glass Block Division, Kimble Glass Company, Dept. AB4, Box 1035, Toledo 1, Ohio.

A typical example of the millions of damaged or loose-fitting cellar sash that need replacement with Insulux Glass Block.

KIMBLE GLASS COMPANY
Toledo 1, Ohio—Subsidiary of Owens-Illinois Glass Company
and treat your customers to the glamour of color and translucency . . . the economy of permanent finish . . . the safety of shatter-proof, crackproof glazing.

Home patios are beautiful and protected with a canopy of colorful, translucent Resolite — easily installed on metal or wood framing.

For decorative or utility partitioning in homes, office or shop, Resolite’s wide variety of beautiful colors makes it the ideal paneling material. Amazing lighting effects are easily obtained because of its translucency. Its corrugations are useful in obtaining special effects of height or breadth.

Patio canopies of colorful translucent Resolite afford protection from sun and rain yet avoid the gloom of opaque coverings.

Resolite is made of polyester resins, reinforced for strength and rigidity with an interwoven mat of glass fibers. Resolite is unaffected by weather extremes of heat, cold or moisture. Resolite needs no surface treatment or refinishing; its colorful glossy surface easily wipes clean.

Shatterproof Resolite is durable and safe for partitioning in home or office. Color and corrugations adaptable to any decorative plan. Resolite needs no refinishing, easily wipes clean.

For complete information on Resolite, including sheet specifications, colors and installation methods, and name of your nearest distributor, write

Resolite Corporation
P.O. Box 508
Zelienople, Pa.
Basic roof types are the gable, hip, hip and valley or intersecting gable, gambrel and flat roof. Roof sheathing supports the weight of the covering material, provides a nailing surface for it, braces the rafters and helps to keep interior warm.

**ROOF SHEATHING**

Sheathing can consist of boards laid squarely across the rafters in varying widths with edges tightly butted or matched. If desired, a diagonal treatment may be used for greater wind resistance.

Roof boards or slats under wood shingles should be not less than 3 inches wide by \( \frac{3}{4} \) inches thick. Placing of slats should begin at eaves. For asphalt or asbestos roofing, the deck should be carefully matched or shiplapped from eaves to ridge. All boards should be nailed twice at every support with 8d nails. Unless end-matched sheathing is used joints should be over rafters.

**Plywood Roof Sheathing**

Thicknesses of plywood roof decking vary with roof loads and rafter spacing. FHA accepts \( \frac{3}{16} \)-inch plywood sheathing over rafters 16 inches O.C. under both wood and asphalt shingles. However, unless \( \frac{1}{4} \)-inch plywood is used, wood shingles must be applied with nailing strips. Under certain conditions, if \( \frac{1}{2} \)-inch is used, the rafters may be spaced 24 inches O.C.

Nail \( \frac{3}{16} \), \( \frac{3}{8} \), and \( \frac{1}{4} \)-inch plywood with 6d common nails not more than 6 inches apart at edges or 12 inches elsewhere.

Laying three-tab, square butt asphalt strip shingles with cutouts centered over tabs from course to course

**PLAN 1**

**RANCH TYPE HOUSE**

**U. S. Gypsum Co.**

Laying three-tab, square butt asphalt strip shingles with cutouts centered over tabs from course to course
It is hard to keep these buildings warm in winter and cool in summer. Condensation sometimes forms, drips, causes damage. The problem is often solved by insulating with three tough, never-touching sheets of aluminum compartmented by two fiber partitions.

Steel beams are good conductors, extract much heat from the surrounding atmosphere, which causes a dew-point to be reached with resulting condensation. They need insulation against heat and vapor flow. Multiple accordion aluminum sheets are virtually non-condensation-forming, retain no moisture, have zero vapor permeability. Their heat emissivity on the cold side is 3%.

Contrast this with the necessity of heating-up tons of steel beams and ordinary insulation, sometimes wet, which wastefully radiate heat at a 90% rate on the cold side. In summer, iron and steel beams, ordinary insulations, and most building materials, often continue to radiate uncomfortable heat into a room long after the outside air has cooled.

Multiple accordion aluminum sheets are not only cooler at night, but through the hot summer day maintain temperatures which are sometimes 10 degrees to 20 degrees cooler than the shade outside.

A new form of pre-fabricated multiple accordion, very tough, aluminum insulation for steel beams and trusses is available as Infra 6HW, 1½” wider than standard, and heavier. A type 4HW, with 4 reflective spaces instead of 6, is also available.

The general question of preventing unwanted heat and vapor flow is authoritatively and interestingly discussed in Schwartz’s “Simplified Physics of Vapor and Thermal Insulation.” Steel and beam problems are included. For samples of the new insulation and copies of the manual, use the coupon.

Infra Insulation, Inc., 525 Broadway, New York, N. Y. Telephone WOrth 4-2241

INFRA INSULATION, INC.
525 Broadway, N. Y., N. Y. Dept. B4
Please send FREE “Simplified Physics of Vapor and Thermal Insulation.”
Name
Firm
Address
□ Send Prices □ Send Infra 6HW Sample

AMERICAN BUILDER
proved on HUNDREDS OF THOUSANDS of jobs!
NEW CONSTRUCTION AND REMODELING

Sisalkraft for LIFELONG PROTECTION
against water—moisture—wind—dust
Tough and waterproof to do dozens of jobs well

1. For waterproof membrane between fill and slab
2. Under all finished flooring
3. For curing and protecting concrete
4. For protecting temporary buildings
5. For protecting machinery and materials
6. For weather-tight sheathing

Sisalation for LIFELONG reflective insulation and vapor-barrier
Both surfaces coated with pure aluminum

For sidewalls
Costs 50% less than "bulk" or "blanket" types of insulation. Provides protection against condensation damage and keeps heat in during winter—and out during summer.

For floors
Applied under or between floor joists, SISALATION provides both insulation and moisture protection ... at a single low application cost.

AVAILABLE at LUMBER and BUILDING SUPPLY DEALERS EVERYWHERE

SISALKRAFT STOCK SIZES: 36"-225 sq. ft. and 500 sq. ft.; 48"-666 sq. ft.; 60"-1000 sq. ft. and 1500 sq. ft.; 72"-1000 sq. ft. and 1800 sq. ft.; 84"-1000 sq. ft. and 2100 sq. ft.; 96"-1200 sq. ft. and 2400 sq. ft.

SISALKRAFT "BLANKETS": In widths from 8'6" to 26'6"—lengths up to 100 ft.

SISALATION STOCK SIZES: 36"-500 sq. ft.; 48"-666 sq. ft.

Write Dept. AB-4 for information and samples.

THE SISALKRAFT CO. 205 West Wacker Drive, Chicago 6, Ill.
New York 17, N. Y. — San Francisco 5, Calif.

APRIL 1953
Hardboard siding provides wide laps, clean-cut shadow lines...

**Insulating Sheathing**

Roof sheathing materials which combine insulating qualities are produced in panels up to 8'x14'-feet. These require fewer handlings and nailings than materials of smaller size. Asphalt or asbestos shingles can be applied directly to such sheathing with furring strips 12 inches O.C.; for wood shingles, furring strips are nailed to rafters at centers required by shingle size.

**ROOFING**

The most common roofing types are shingles made of wood, or a mixture of felt and asphalt covered with crushed slate, or of combinations of asbestos and cement.

**Wood Shingles**

Wood shingles may be nailed over 1x3-inch or 1x4-inch strips, spaced the same distance as the shingles are exposed to the weather; or nailed on a tight deck of square-edged or matched boards. Joints between shingles in any one course should be at least 1 1/4 inches from joints in next course below to keep driving rain from penetrating underneath. Shingles in each course should be spaced not less than 1/4-inch apart.

The type of nail used is important because ordinary iron shingle nails will rust and loosen the wood shingle before the shingle needs replace-
A NEW KIND OF FIRE-INSURANCE saved this church

Rose Hill, N. C. Officials
Praise Carey Fire-Chex Shingles!

Excerpts from sworn statements by Chairman of Mt. Zion Building Committee and Rose Hill, N. C. Fire Chief—

“Owing to the fire-resistant quality of the (Carey) shingles, the fire was held in check for three hours. I have no hesitancy in saying quite frankly that all of us attribute the saving of our buildings . . . to your very fine shingle.”

Chairman,
Mt. Zion Presbyterian Church

“It is a pleasure for me to recommend your shingle, from the standpoint of fire-resistance, without any reservation. The evidence in this particular fire speaks for itself.”

Rose Hill Volunteer F.D.

CAREY FIRE-CHEX SHINGLES

With interior gutted by fire, this church at Rose Hill, N. C. still stands—a tribute to the amazing fire-resistance of Carey Fire-Chex Shingles!

Despite intense heat and flames which gutted the interior of the Mt. Zion Presbyterian Church at Rose Hill, N. C., the Carey Fire-Chex roof remained virtually intact! Even when a section of the roof collapsed after supporting members burned through, Carey Fire-Chex shingles prevented spread of fire to adjacent roof areas and certain destruction of the entire building!

Carey Fire-Chex, made of a new, patented asbestos-plastic, are the first and only shingles ever to win Underwriters’ Laboratories, Inc. highest fire-protective rating—CLASS A*. And, in addition to unequalled fire safety, Fire-Chex also offer longer life, greater beauty.

Made extra-thick (weight 325# per sq.) for extra wind and weather protection, Fire-Chex feature new shadow-blend beauty—create roof designs copyrighted as works of art.

Give your clients the priceless fire protection, rich beauty and long, maintenance-free performance of Carey Fire-Chex Shingles. See your Carey dealer—or write now for illustrated literature!

*Without asbestos underlayment
ment. Hot-dipped, galvanized nails are recommended. A round nail with blunted three-cornered point is well suited for putting on shingles as it is less likely to split the wood.

**Asphalt Roofing**

In applying asphalt roofing when old roofs remain in place, removal of the old covering generally is not necessary if (1) the deck and framing are strong enough to support workers and new roofing, snow and wind loads; (2) the deck will give good anchorage for nails. In high wind areas, shingles at eaves and rakes should be cut back far enough to allow application of 1-inch wood strips 4 to 6 inches wide.

To prepare old asphalt shingles for new asphalt roofing, nail down or cut away loose, curled or lifted shingles; remove loose and protruding nails and badly worn edging strips, and replace with new ones.

In preparing old roll roofing, slit buckled sections and nail the pieces down smoothly; also remove loose and protruding nails. If parts of the deck are exposed, examine these areas for loose or pitchy knots and excessively resinous places. Cover such defects with sheet metal.

**siding with insulating sheathing . . .**

Step by step erection of insulating sheathing: (1) Erect framing 16 inches O.C. for 1/2-inch and 25/32-inch sheathing. (2) Allow 1/4-inch space between adjoining big boards and center matched sheathing. (3) Apply center matched sheathing with tongue up. Join t&g joints securely; stagger end joints in successive courses. (4) For snug window and door frame joints, make contact close. (5) Wood siding ends should fall at center lines of studs. (6) Minimum air space between masonry and sheathing: 1/4-inch. (7) Under masonry use non-corrosive metal ties at rate of one per 160-260 square inches of wall area; 1-inch nail penetration through sheathing into studs. (8) Use sheet metal or flashing over head casings of windows and doors . . .

**waterproofing membrane . . .**

Top of gravel is covered with layer of asphalt material lapped at least two inches. Full area of lapped edges is coated thoroughly with cement and pressed together. Material is also designed for use as crawl space cover.

**Asbestos-Cement Shingles**

The interlocking design of asbestos-cement shingles permits concealed nailing.

These shingles come in strips, are self-aligning and self-spacing. Access-

(Continued on page 401)
## ASPHALT Roofings & Sidings

*for every new construction and replacement need!*

### Specifications

<table>
<thead>
<tr>
<th>WOODTEX</th>
<th>Specifications</th>
<th>Slabs Per Sq.</th>
<th>Bds. Per Sq.</th>
<th>Wt. Per Sq.</th>
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<tr>
<td>Grained Surface</td>
<td>12&quot; x 36&quot;</td>
<td>80</td>
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<td>Plain and Grained Surface</td>
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<td>Plain Surface</td>
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<td>82</td>
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<td>Grained Surface</td>
<td>18½&quot; x 20½&quot;—2&quot; sidelp</td>
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<td>3</td>
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<td>Siding</td>
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<tr>
<td>Grained Surface</td>
<td>10½&quot; x 32&quot;</td>
<td>50</td>
<td>1</td>
<td>105 lbs.</td>
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</tbody>
</table>

**Insulating Sidings available at York, Pa. and Chicago, Ill.**

### MINERAL SURFACED ROLL ROOFINGS
- Certain-teed 90 lb.
- Certain-teed 19 in. Selvage Edge Roofing
- Certain-teed Blockedge Grained
- Certain-teed Starter and Valley Strips

### SMOOTH SURFACE ROLL ROOFINGS
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*A Complete Line of FELTS, BUILDING PAPERS, ROOF COATINGS and CEMENTS*

Note: A complete list of the wide variety of colors available will be sent at your request.

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ARDMORE, PENNSYLVANIA

APRIL 1953
how to apply wide-lapped plywood siding...

Panels are ripped to 16-inch widths, beveled with tilting saw to provide drip edge. Panel edges should be sealed (above) with heavy application of high grade house primer, aluminum paint, or heavy lead and oil paint.

For deep shadow line, nail strip of plywood or 3/8-inch furring strip along top edge of each course and (below):

Place shingles over studs where the ends of panels will butt.

NEXT COURSE OF SIDING GOES OVER FURRING STRIP AND SHINGLES, WITH END LYING OVER SHINGLE AND STUD

Hassall threaded asbestos siding nails are the choice of contractors throughout the country. Made of bronze and steel with plated finish. Note threaded shank which guarantees maximum holding power. Made of #14 gauge wire (0.82) in 1", 1 1/2", 1 3/4", 2" lengths. Advise quantities. Prompt shipment.

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Also... popular, beautiful Flintkote Stri-Color* Asbestos-Cement Sidings have virtually revolutionized the siding industry. They have handsome, new colors for monotone or two-tone effects, or for combination with stone, brick, stucco, etc., and the famous DURASHIELD* water repellent, stain-resistant protective finish.

And... lovely new colors enhance our always popular line of Decorative Insulation Board and Tile. Use it to brighten up game rooms, attic bedrooms, libraries, etc. ...and to hide unsightly walls and ceilings.

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mineral wool details...

Mineral wool batt or blanket insulation for Plan 3 house: all exposed walls from foundation sill to exposed first or second floor ceilings, including junction walls of garage and house; 3-inch thick material. Entire second floor ceiling, rear entry, laundry and recessed front entry ceilings of first floor: 3½-inch thick material. All insulating material should be fitted together to provide continuous surface between studs or joists.

gypsum sheathing applications...

Gypsum sheathing is applied horizontally in 2-foot by 8-inch wide sheets with 11-gauge, galvanized large-head roofing nails 1½ inches long. Nails are spaced 8 inches on center under wood siding and other exteriors nailed through sheathing on wood framing; 4 inches on center under other exteriors such as masonry. Where gypsum siding is used, all openings should be of depth for ½-inch sheathing.
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GLUMAC
Units

The modern, time-saving way to apply weathertight cedar shake sidewalls. Save up to 70% in application costs. Unit consists of famous Shakertown Sidewalls electronically bonded to waterproof backer board. Only 22 pieces cover 100 sq. ft. at 14" exposure. Packed 11 units per carton. A quality product priced for today’s market.

SHAKERTOWN SIDEWALLS

America's most-imitated sidewall material. Finest quality Certigrade shakes with deep-grooved surface, color-treated and machine brushed for uniform quality and appearance. Nine architect-selected colors to blend with any design or structural material, for new construction or remodeling. Over 30 years of outstanding reliability. Carton protected; packed one half square per carton.

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Especially formulated for cedar shingles and shakes. Brings out the natural beauty of wood texture; adds years of service life. Has balanced capacity to penetrate for preservation and cover for beauty and protection. Smooth, even flow to the touch of the brush - saves labor cost, speeds application. Nine popular colors.

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The standard of quality in smooth-surfaced cedar shingles for roofs and sidewalls. Color-treated with a balanced blending of finest pigments and oils. Combining modern styling and beauty with extreme long life, light weight and extra insulating properties. Ideal for re-styling and modernizing. In eight standard colors and prime white. Packed four cartons per square at standard roof exposure.

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Buyers find all they want in

"Century"

NU-GRAIN

asbestos-cement
siding shingles

"Century" sided homes give more than full measure! These tough, durable shingles combine the appearance of old-fashioned split wood shingles and the lasting qualities of stone. They are virtually maintenance-free, and never need protective paint. They won’t burn, rot, or rust—or tempt termites.

And home buyers and remodelers are really enthusiastic about the three attractive, lasting colors in which NU-GRAIN shingles are made: NU-GRAIN Brown, NU-GRAIN Gray, and NU-GRAIN Green (illustrated). When the shingles are applied, the vertical joints between them disappear in the continuous grain pattern, and their straight-butt shadow lines are clear and pronounced.

Home-conscious people by the millions have seen and admired “Century” NU-GRAIN shingles on actual homes and in K&M advertisements (in color) in Better Homes & Gardens magazine. Get the complete story from your K&M Distributor or write directly to us.

Nature made Asbestos... Keasbey & Mattison has made it serve mankind since 1873

America’s first maker of asbestos-cement shingles

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FOLLANSBEE Seamless Terne Metal

WHAT IS TERNE METAL
FOLLANSBEE SEAMLESS TERNE METAL, which is the original "Valley Tin", consists of copper-bearing steel strip coated with a lead-tin alloy. In addition to its use in valleys, Terne Metal is also widely used today for all types of flashings, for gutters and gravel stops, for copings and canopies, and anywhere else metal is used on all types of roofs, such as built-up, asphalt or asbestos shingle, tar-and-gravel, slate, or tile.

COATINGS, GAGES, WIDTHS
Terne Metal is available in 50-foot continuous rolls, free of unsightly and costly cross seams, in 40 lb., 20 lb., and 8 lb. coatings, in IC and IX gages, and in widths of 4", 6", 7", 8", 10", 12", 14", 20", 24" and 28". It is supplied unpainted, painted one side, or painted two sides, as desired, and this mill-applied coat of paint doesn't interfere with soldering.

PHYSICAL CHARACTERISTICS
When weathersealing with Terne Metal, there is no need for expansion allowances or joints, for Terne expands and contracts only 0.2195" in 30 lineal feet for a 100°F. temperature change. Terne Metal is tough enough to absorb and withstand these slight changes, for it has the tensile strength of steel—45,000 lbs. per sq. in.

The Terne Metal weathersealing may be painted immediately after installation, for there is no need for weathering to condition it for the paint. The weathersealing may be painted any color, to match or harmonize with the color of the roof, or with the exterior trim of the structure.
IDEAL WEATHERSEALING

To sum up, Follansbee Terne Metal is flexible in its application as weathersealing; it comes in a large variety of widths for any purpose; it has a low expansion and contraction rate; it has the rugged strength of steel; the coating does not flake or peel off; it resists tearing in installation; it is fire-resistant, for it is all metal, with nothing to burn; and it has a low maintenance cost, only an occasional painting. All these features add up to a completely satisfactory weathersealing material.

Box Ternes are still available on special order if desired.

Pre-cut Terne Metal flashing shingles, 5" x 7", painted two sides, can be supplied in packages of 100.

The properties of Follansbee Seamless Terne Metal that make it desirable for Weathersealing also make it the best material for complete roofs. The architect and the man of the house like the good design features and the fine service it renders; the woman of the house likes its beauty of design and the color range it makes possible by the use of paint; and the builder, in addition to liking all these qualities, knows that he can build a house with a Terne Metal roof incorporating lighter structural design, because he is free of concern for the weight of the roof.

FOLLANSBEE STEEL CORPORATION
PITTSBURGH 30, PENNSYLVANIA
roof insulation application details...

Installation of roof insulation on flat, pre-cast concrete deck of factory building. Vapour-proofing course is two plies, lapped half, of 15-pound tar- or asphalt-saturated roofing felt in mopping of hot pitch or asphalt with hot bitumen between laps. Upper left: details of sealed joint roof insulation

(Continued from page 394)

Accessories such as eave starters, hip and ridge shingles and ridge rolls are purchased separately.

A clean, level roof deck is a must for maximum serviceability of these shingles. Installation should be made in dry weather. Minimum roof pitch is usually specified as 5 inches per foot. Roof boards are covered with one layer of asphalt-saturated felt (not less than 15 pounds) with a 2-inch horizontal lap, a 6-inch end lap and a 12-inch lap at hips and ridges.

A wood cant strip along the eaves, flush with the lower edge, gives a proper pitch. Starter courses are placed under the felt; the first course is laid on the felt.

**Asbestos-Cement Corrugated Sheets**

This incombustible, non-corrosive and weatherproof material is used chiefly for roofing farm buildings, garages and hangars, and light industrial buildings; it is said to be especially economical for industrial buildings because it contains nothing that can rust or rot.

Sheets are 42 inches wide and range in length from 3 to 12 feet. Average thickness is *¾-inch. Special fasteners are supplied for various types of framework.

**Steel Roll Roofing**

This type of roofing should be laid on selected waterproof paper (not tar or other paper containing acids). Nails should not be driven through the strips. Solder should be strictly half and half; rosin should be used only as a flux for soldering with all rosin removed from seams before painting. Roofers should wear rubber shoes and avoid unnecessary walking on the roof.

**Copper Roofing**

The thickness of copper roofing is determined by the type of construction and location of the building. For sloping roofs of residences 10-oz. copper has proved satisfactory; heavy industrial buildings may require up to 32-oz. per square foot, although 16-oz. copper is considered standard for general sheet metal work in building construction.
Swift sheathes

Celotex National Advertising Puts the Spotlight on You.

To help make 1953 a banner year for you, Celotex is staging a great new national advertising campaign. Big, colorful, hard-selling ads—month after month—in THE SATURDAY EVENING POST, BETTER HOMES & GARDENS, AMERICAN HOME, SMALL HOMES GUIDE. All telling prospects in your own community—"See your builder!"

These impressive, full-page Celotex ads are designed to build business for you. Tie in with them by emphasizing to every prospect that your homes are built with genuine Celotex Products. This makes your selling job far easier. For over a quarter century of national advertising has created unsurpassed public preference for the name Celotex!

Impartial survey shows
ARCHITECTS PREFER
CELOTEX
INSULATING SHEATHING
2 to 1
over the next leading brand.
homes almost 30% faster

SINCE SWITCHING TO EXTRA-VALUE

CELOTEX INSULATING SHEATHING

“Our erection crews can sheathe Swift Factory-Built Homes almost 30% faster since we switched to Celotex Double-Waterproofed Insulating Sheathing. It is easier to cut and fit, and reduces waste as much as 15%.”

Ira H. Gordon, President
SWIFT HOMES, INCORPORATED
Elizabeth, Pennsylvania

Like Mr. Gordon, leading builders all over the country have found that Celotex Insulating Sheathing speeds erection, saves labor and materials. It makes your homes stronger, more comfortable, easier to sell. Applied, it costs no more and usually LESS than ordinary sheathing. Yet it gives you all these big added values...

1. Insulates and Weatherproofs as it builds. All at one cost. No building paper needed.

2. No Corner Bracing Needed to meet F.H.A. requirements, with 4 ft. wide, \( \frac{7}{8} \)" thick Celotex Insulating Sheathing. It is laminated for extra strength and rigidity. Has about 30% greater bracing power than ordinary sheathing.

3. Goes Up 30% Faster. Easier to cut and fit. Up to 15% less waste. Shingles can be applied direct, easily and quickly.

4. Double-Waterproofed. Inside, by integral treatment that coats every fibre; outside, by asphalt coating. Yet has high vapor permeability. Lets you resume work quicker after rain.

5. It Is the Only Sheathing made of tougher, stronger, long Louisiana cane fibres—and protected by the patented Ferox® Process from dry rot and termites.

Mail coupon for free booklet telling how you can save as you build better homes with Celotex Insulating Sheathing.

Build Better... Build with Genuine

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MAIL TODAY!

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120 S. LaSalle St., Chicago 3, Ill.
Please send me free the Celotex booklet, “How You Can Build Better Homes at Lower Cost.”

Name

Address

City    Zone    State

The Celotex Corporation, 120 S. LaSalle Street,
Chicago 3, Illinois
The wise builder knows that
Nature dries best . . .

There really isn't much of a trick to drying a pre-stained cedar shake — if you are willing to take the time and go to the trouble of doing the job right. Dozens of experiments have been tried in an effort to find a "quick" way to do the job. Hot lights, hot air, and hot ideas of a dozen kinds have been tried. We at Colonial Cedar Company have studied all of the short-cut suggestions, and we've found that nothing beats good old mother nature for drying shake stain.

So we just use mother nature.

We take the time to "hang Fitite Shakes out to dry" in the good old fresh air. Takes a lot of doing, a lot of storing, a lot of waiting; but it assures us that we are giving Fitite Shakes the best stain coverage in the business. Have you compared Fitite Shakes with the rest?

COLONIAL CEDAR COMPANY, INC.
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Insulating efficiency without bulk

... Costs less ... Perfect vapor barrier, too!

REYNOLDS ALUMINUM
REFLECTIVE INSULATION

TYPE B—Embossed aluminum foil on both sides of kraft paper.
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Quickest to apply, easiest to handle! You cover 250 square feet with one 15-lb. roll... just staple the bright sheets in place. Reflects up to 95% of radiant heat from whatever direction it comes... from the sun in summer, from stove or furnace in winter. And it's the perfect vapor barrier, too. All this, at half the cost of most bulk insulations! Write for information. Reynolds Metals Company, Building Products Division, 2003 South Ninth Street, Louisville 1, Kentucky.

In rolls of 250 sq. ft. — 25", 33" and 36" wide.

Inquire also about new, low-cost Reynolds Vapor Barrier.

REYNOLDS ALUMINUM

APRIL 1953
W. P. "Bill" Atkinson...

Saves $101 a home

$30,000 saving! Bill Atkinson plans to build up to 300 quality homes like these in his new Ridge Crest subdivision at Midwest City. By using Insulite Sheathing instead of wood, he stands to cut building costs about $101 per home... a total project saving of better than $30,000! What's more, Insulite Sheathing means quality construction because it has extra insulation value... outstanding structural strength.

"Here's how to build better for less," says W. P. "Bill" Atkinson

Save! Cut sheathing time as much as 43%! One carpenter can sheath 1,000 square feet in 8 hrs. or less with Insulite Sheathing. Carpenters like to work with it because it's clean and easy to handle, easy to cut and apply.

Save! Reduce costly waste! Insulite Sheathing virtually eliminates waste! Here's an example. The waste that remained after a recent 6,000 sq. ft. sheathing job was one small wheelbarrow load!

Save! Eliminate building paper. Since Insulite Sheathing is waterproofed throughout with asphalt, there's no need for building paper. It protects against moisture, yet is highly permeable to allow vapor to escape from inner wall areas. Won't warp or buckle either. Store it or use it anywhere in any weather.

Save! Eliminate corner-bracing. When you use Insulite's 4-ft.
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Build and insulate with double-duty

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Made of hardy Northern wood

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Bildrite you can eliminate corner-bracing entirely. (4-ft. Bildrite was the first insulating sheathing to be accepted by F.H.A. for use without corner-bracing.) Bildrite's tremendous bracing strength is equivalent to that of diagonal wood sheathing—more than twice that of horizontal wood sheathing!

Write! See how you can save with Insulite Sheathing. Free literature includes cost-comparison folders with which you can easily figure your actual dollar and cents savings with Insulite. Write Insulite, Minneapolis 2, Minnesota.
MEAN EXTRA QUALITY

Deniston Nails have been sold with complete customer satisfaction since 1926. They are the best nails for applying corrugated sheet metal, aluminum, slate and tile roofings.

SELL DENISTON NAILS
AND YOU SELL THE BEST.

No. 1 No. 2 No. 3 No. 4 No. 5

No. 1. Triple-Lock Lead-Seal Straight Shank Nail. Comes Bright or Galvanized. Lead is under head and down the shank. When nail is driven, the hole in sheet is actually sealed with lead.

No. 2. Triple-Lock Lead-Seal Drive Screw Nail. Bright or Galvanized. Same head construction as No. 1.

No. 3. Triple-Lock Lead-Seal Drive Screw Aluminum Nail. Made from special alloy to insure hardness, driving without bending and extreme holding power.

No. 4. Denco Compressed Lead-Head Ring Shank Nail. Bright or Galvanized. A compressed lead head with lead both over and under a steel head. Head will not “pop” off from driving or from expansion or contraction of steel or aluminum roofing.

No. 5. Pallet Nails, Drive Screw. A quality nail 2½” long x 10 ga. Cement coated for extra holding power.

APPROXIMATE NUMBER OF LEAD-SEAL and DENGCO Nails per Pound

Length of Nail 1½” 1¾” 2” 2¼” 2½” Bright 66 104 128 170 216

Bright Galvanized 68 106 130 174 224

Aluminum 156 150 140 130 126

Packing—Steel Lead-Head and Pallet Nails—100 pounds in box. Aluminum Nails—50 pounds.

Deniston Nails are fully covered by patents

THE DENISTON COMPANY
4862 So. Western Ave. Chicago 9, Ill.

Inland Steel Co.

flexible roofing for curved trusses . . .

Flexible asbestos-cement board is applied here as roofing over curved wood trusses. Nailing of sheets starts at bottom. Horizontal joints are lapped to 3-inch minimum. Vertical joints are butted and covered with battens of same material applied over a felt gasket.

Built-Up Roofing
The built-up roof is a seamless covering of flexible waterproofed material, custom-built to fit the job. It can be applied hot or cold and is fabricated from felt, pitch, asphalt and gravel. Insulation is required because a major problem with built-up roofs is that of moisture on the underside resulting from condensation. At least one ply of roofing felt should be placed under insulation to act as a seal course.

Slate and Tile Roofing
Slate, a hard dense stone, is watertight, fireproof and stormproof. It rarely requires maintenance and has highly decorative color tones. On new roofing it is laid over asphalt-saturated felt and fastened solid with copper nails; if necessary, it can be applied directly over asphalt or wood shingles.

Exposed nails are covered with elastic roofing cement colored to match the slate. Surface texture is smooth or rough as desired. The material comes in average thicknesses of 3/16-inch to 3/8-inch, in lengths of 10 to 24 inches.

Cedar Shakes
Pre-stained red cedar shakes are suitable for roofs that have sufficient pitch to insure good drainage. Light in weight and having a low rate of expansion and contraction with changes in moisture content, they give excellent performance where exposure to the weather is greatest. They may be laid with standard exposure on roofs of not less than ¼ pitch.
SIDEWALL SHEATHING

Sheathing ties the framework of a building together as well as providing some insulation and weather-tightening qualities to the exterior walls. Proper fitting and nailing are requisites for a well-knit frame.

Wood Sheathing

Experience and tests show that a wall with diagonal wood sheathing, two nails at each stud in each board, provides more efficiently than horizontal and diagonal ties the two floors together more efficiently than horizontal and also provides a better finish-nailing surface.

Plywood Sheathing

Manufacturers claim that plywood gives more than twice the strength of diagonal wood sheathing. The minimum thicknesses for wall sheathing are 5/16-inch for 16-inch stud spacings, 3/8-inch for 24-inch. FHA minimum property requirements specify corner braces in house framing may be eliminated when 4x8-foot sheets of plywood are nailed with 6d nails, 6 inches O.C. on all edges and 12 inches O.C. at intermediate bearings.

Gypsum Sheathing

Gypsum sheathing comes in panels 2 feet wide, 8 feet long and 45-inch thick, a coverage of 16 square feet of wall area per panel. Panel weight is less than 35 pounds. The panels fit 16- or 24-inch stud spacings, reducing waste. Edges provide snug and continuous contact between sheets.

Insulating Board Sheathing

This is a structural board made of cane or wood fibers; standard brands are waterproofed with an asphalt coating or with an integral asphalt treatment. There are two main size groups, the one group has dimensions of 4x6- or 4x12-feet, the other is 2x8.

The 4-foot width is applied vertically and nailed at the intermediate studs first with large-headed roofing nails spaced 6 inches apart. Nailing spacing around edges is 3 inches.

The 2x8 sheathing, with interlocking horizontal points, is applied horizontally with the same nailing and spacing as the large sheets. Where rigid shingles are used as exterior finish, furring strips must be applied over the sheathing unless special self-clinching nails are used.

Asbestos siding shingles may be applied directly to this sheathing with self-locking nails; clatboard and ties for brick veneer are nailed through the sheathing into studs.

In Figure 6, Condensation zones.—Zone I roughly includes the areas with design temperatures —20° F. and colder; zone II 0° to —10° F. ; and zone III areas warmer than 0° F.
details for stained cedar shakes...

BUILDING PAPER

Placed between sheathing and outside finish to prevent passage of air through walls, building paper should be tough enough to withstand rough handling, retain its strength when wet, and halt moisture passage.

A vapor barrier on the warm inside wall is considered essential when insulation is placed against sheathing; it is needed to prevent moisture condensation within the wall. The vapor barrier is a paper which keeps vapor from entering the wall from inside the house. The building sheathing paper which insulates the outside wall should not only be wind and rainproof but, in contrast to the vapor barrier, should allow vapor to pass through it, and should be five times as vapor permeable as the vapor barrier.

Four main types of building paper are: (1) papers impregnated with asphalt; (2) kraft paper impregnated with paraffin; (3) laminated papers of two or more layers cemented with asphalt; (4) machine-finished papers.

SIDING

Plywood

Only exterior type plywood with waterproof adhesive bond should be used for permanent outside exposure. Plywood may be applied with molded battens, V-grooves or flush joints; it makes excellent wide siding when applied in half-panel or third-panel widths. Panels 3/4-inch thick are used successfully in low-cost construction; 1/2-inch or thicker has been found satisfactory for single-wall structures.

Non-corrosive nails such as the common hot-dipped galvanized type should be used. Nailing should be with 6d common or 6d box nails for 3/8-inch siding and 8d for thicker siding. When 4x8-foot or longer panels are used nails should be spaced not more than 6 inches O.C. at panel edges and 12 inches elsewhere.

FHA specifies that plywood used as siding must have minimum thickness of 3/8-inch with studs 16 inches O.C. If sheathing is used plywood siding may be 1/4-inch thick.

Wood Siding

Wood siding must be reinforced with sheathing except in climates where heating is not a factor.

It is always good to "lay out" siding before it is applied, so that the bottom edge of one strake will fall at bottom edges of window sills and that of another strake will run neatly over the top of the frame or drip mold. When drop or rabbeted siding is used, the lap of each board over the next below is determined by the depth of the rabbeting; with beveled siding the lap can be varied as the builder desires.

Where two pieces of siding butt, joints should be square. Corners can be finished as follows:

1. Against corner boards: One piece of corner board should be wider than the other so that when in place the board will look the same from both sides. Also, corner boards should be slightly thicker than ends of siding; minimum thickness for 6-inch siding is 3/4-inch. Heavier corner boards are needed for heavier siding.

2. Mitered corners: While more attractive-looking, these are harder to apply than corner boards. Corner board technique is more air-tight and watertight.

Bevel Siding

Customary widths of this material are 4, 5, 6, 8, 10 and 12 inches; it is usually 3/16-inch thick on the thin edge and 3/8- to 3/4-inch on the other. Bevel siding 8 inches or wider often is called "Bungalow" or "Wide Colonial" and often has shiplapped or rabbeted joints so that it lies flat against studding. This application reduces apparent thickness by 1/8-inch but permits use of extra nails.

Also, rabbeted joints require less lumber than the lap joints used with plain bevel siding. The 4- and 6-inch widths of bevel siding do not require rabbeted joints; they are usually 1/4-inch thick and rabbeting would make them too thin.

Cedar Shakes

In addition to attractive appearance, prestained cedar shakes have insulating value which resists heat transmission. Edge-grain shakes are more weather-resistant and less likely to cut or warp on the wall than those cut flatwise of the grain.

Types of cedar siding shakes include processed shakes with parallel sides and square butts; the sim-
TEMLOK® BOARDS
Insulation and wallboards 4' x 6', 7', 8', 9', 10', 12'. Thicknesses: 1/4", 1/2".
Colors: Ivory and Light Ivory.

TEMLOK PLANK
A handsome interior finish. 8", 12", 16" x 8" and 12". Thickness: 1/2". Lok-Bevel Joint. Colors: Suntan Blend.

TEMLOK TILE
A decorative fiberboard ceiling finish. 12" x 12", 12" x 24", 16" x 16", 16" x 32". Thickness: 1/2". Lok-Bevel Joint. Light Ivory or Snow White.

PERFORATED TEMLOK TILE
A fiberboard, sound-absorbing ceiling tile. 12" x 12", 16" x 16", 16" x 32". Thickness: 1/4". Lok-Bevel Joint. Light Ivory or Snow White.

CUSHIONTONE®
A highly efficient fiberboard acoustical tile. 12" x 12" x 1/4". Beveled edge. Two-coat washable white point finish.

HARDBOARDS
Patterned, tempered, untempered, and plain panels in a variety of sizes and thicknesses.

INSULATING WOOL
Enclosed Roll Blankets
Enclosed Batts
Utility Batts
Pouring Wool
Perimeter Insulation.

TEMLOK SHEATHING
An asphalt-impregnated sheathing for bracing strength and insulation. 2' x 8', 4' x 8', 4' x 9', 1/4" and 1/2" thick.

TEMLOK LATH
Provides an efficient plaster base. 18" x 48". Thickness: 1/8". Screen surface. Shiplapped edges with scoop bevel on four sides.

ARMSTRONG’S BUILDING MATERIALS

Armstrong’s building materials are designed to help you build better houses and to save money, both in materials and labor. The Armstrong name and reputation can make your houses easier to sell. For further information, write Armstrong Cork Company, 1604 Ocean Avenue, Lancaster, Pennsylvania.
Insulating board in farm structures...

Three methods of insulating frame walls: (A) One layer of insulating board on outside of studs with or without other exterior finish. (B) One layer of board inside studs, with wood siding or other finish. (C) Two layers, one on each side of studs with wood siding or other finish over outside layer.

(Continued from page 410)

ulated hand-split shake with side-grooved face and "invisible" joints; and the hand-hewn type with face side smooth, visible joints, random thickness and rustic appearance.

Lengths are 16, 18 and 24 inches. Shakes are usually designated as 4/2-inch or 5/2-inch, denoting four or five to a two-inch thickness.

Asbestos-Cement Shingles

These virtually maintenance-free shingles are fireproof and have high weather resistance. A variety of colors, textures and butt lines are made.

Installation can be over wood sheathing or over gypsum or insulating board with special fasteners. Manufacturers provide backer strips for use behind vertical joints and corrosion-resistant face nails.

Aluminum Siding

Features of aluminum clapboard siding include a curved or concave face for extra strength; and spring-tensioned joint for weather-tightness. The material is produced in individual courses 7 3/4 and 9 1/2 inches wide (6 7/8 or 8 1/2 weather-exposed) and in standard lengths of 10, 12, 14 and 16 feet.

Insulated Siding

This siding is imitation brick and stone, backed with insulating board which adds structural strength and heat resistance to exterior walls. The exposed surface is coated with asphalt.

Common sizes are 43 3/4 by 14 3/4 inches. Harmonizing corner pieces are 3 3/8 x 2 3/16 x 33 3/4 inches.

Insulation

All building materials such as wood, masonry, and even wide air spaces permit the passage of heat from the interior to the exterior in winter or from the exterior to the interior in summer. This rule also applies to insulations. Insulation never completely stops the passage of heat, but it is manufactured for the express purpose of retarding the greatest possible amount.

LOOSE FILL

Various types may be packed, poured or blown into the spaces formed by framing members or masonry. Normally, they are used for insulating existing buildings.

Mineral Wool includes three types of noncombustible insulation known as rock wool, slag wool or glass wool. They may be fabricated into nodules, into batts or blankets.

Wood fiber wool fill includes several insulations made from wood fiber to produce a lightweight fleecy material. These are generally treated to render them flame resistant, vermin repellent and moisture resistant.

Vermiculite is an inert, lightweight, granular insulating material manufactured by exploding an aluminum magnesium silicate mineral, which is a form of mica.

BLANKETS

Blanket insulations are flexible units more than 48 inches in length and wide enough to fit between studs on conventional 16- or 24-inch centers. This material is manufactured to control thicknesses and either folded in cartons or packed in rolls. It is made of mineral wool, wood fiber, cotton and animal hair. The fibers are either naturally fire resistant, moisture and vermin resistant or are treated to make them so. Thicknesses are generally 1, 2, 3 and 3 3/4 inches.

BATTs

A number of manufacturers who produce blanket insulations also make batts, using the same raw materials. Batt thicknesses are 48 inches or less in length and the same widths as the blankets—15 inches to fit between studs 16 inches on center and 23 inches for the 24-inch O.C. studs. The most common thickness for batts is three inches, although they are also produced in one- and two-inch thicknesses. They may be obtained with the insulation completely encased in paper, one side of which is a vapor barrier; with the vapor barrier only on the one side; or without the integral vapor barrier. Some manufacturers provide a nailing flange as part of the vapor barrier.

Insulating board is a product for general usage produced in four-foot widths and in lengths from six to 12 feet. Popular thickness is 1 1/2-inch, although it is available in thicker grades. It can be used satisfactorily with the natural finish but a number of manufacturers apply various colors to the surface at the factory. When applied, insulating board is usually the finish wall.

Insulating board sheathing is a structural board usually heavier in weight than building board. All of the sheathings on the market today are waterproofed either with an asphalt coating or with an integral asphalt treatment. Insulating board sheathing is supplied in two main size groups—1 1/2, or 2 1/2-inch thick, four feet wide, in lengths from eight to 12 feet with square edges, 2x8 sheets, 2 1/2-inch thick, usually with some kind of tongue and groove or fitted edge joint on the long edges.

Reflective

Reflective insulations, with their bright metallic reflective surfaces, differ from other types of insulation because they depend entirely on their surface characteristics for insulating value. Insulation value is achieved with reflective insulations only when they face a 1/4-inch or larger air space.

SLAB

Slab insulations are made of a number of materials in small, rigid units usually one inch or thicker in sizes up to 24x48 or 36x36 inches square. The general kinds are: 1—corkboard; 2—wood fiber and cement; 3—mineral wool; 4—cellular glass; 5—vegetable or wood fiber board.

In home building and light construction the slab insulations are being used at an increasing rate to retard heat loss from concrete slab floors laid directly in contact with the ground.
American Colonial ASBESTOS SHINGLES

... add character to any home—
... wear like stone—
... applied like any strip shingle—

Each shingle is designed as a rigid asbestos-cement strip, covers as much area as 5 individual shingles. American Colonials are self-aligning, nail holes are pre-punched. Application is simple and rapid.

The finished roof has the pleasing horizontal shadow line and deep-grained texture desired by so many homeowners.

YOU LIFT your houses out of the ordinary when you give them a roof of Johns-Manville American Colonial shingles. These handsome, colorful shingles have the rugged, sturdy and fireproof qualities of asbestos and cement. In addition, they have new styling and striking new beauty.

In most areas, the applied cost of an American Colonial shingle roof is lower than any other permanent type of roof you can use. The shingles are readily available nationally, easy to handle, and any carpenter can apply them. Your choice of several attractive colors. For full information write Johns-Manville, Box 60, New York 16, N. Y.
His only shield was Honor

This was Alexander Hamilton. A man of unflinching principle, he fell before the ambitious Aaron Burr who chose to fire before the signal was given.

Even before the name of Alexander Hamilton became a legend in our land, BIRD had started on the long and rewarding journey toward the respected name it now represents.

Today, BIRD Master-Bilt shingles offer you the highest quality of workmanship and the longest life of any 215 lb. shingle.

* Thick butt construction; two layers of both asphalt and firmly embedded mineral granules give added years of wear where it counts . . . on exposed tabs.
* Full line of pastels and traditional darker colors.
* Fire resistant—certified by Underwriters' Laboratories.
* 215 lbs. working weight protect every 100 sq. ft. of roof.

For more information, write Bird & Son, inc., Dept. AB-4, East Walpole, Mass.
IT IS POSSIBLE TO BUILD BETTER and SAVE MONEY at the same time

- Nova-Vite Horizontal-Sliding Windows are revolutionary—offer new advantages for every room.

- Nova Wall and Furniture Units—of many types—give more usable space in less total space.

- Nova Roller Doors—for closets and passageways—are installed in less than 30 minutes.

- Homasote Big Sheets (up to 8' x 14') save time and labor in the sheathing of roofs and exterior walls.

- Homasote Underlayment is nailed directly to the rough flooring. No felt or pad is needed.

- Sheathe and shingle in one operation with Nova Sidewalls and Roofs. Top quality: maximum economy.

- Architect, Designer or Builder...we invite the opportunity to prove to you that the products and materials here shown—and others in addition—are among the soundest purchases you can specify or make.

Our claim to your attention is based upon three factors...

(1) We have been selling building materials for the past 43 years—in all parts of the United States—serving, and in continuous contact with, thousands of architects, designers and builders. We know something about your problems.

(2) In one period of our history, we spent more than half a million dollars on pure research—covering a good many problems the average builder or architect has never had the time to explore.

(3) At another period, we were responsible for the construction of thousands of houses—in the fastest time ever accomplished, at the most economical cost.

As a result, each product here offered has been specifically designed and manufactured to be (at least) competitive in installed cost; to be unusually economical in maintenance costs; to outlast and outservice competitive products; to increase the investment value of the house—for mortgage or resale purposes; to add materially to the appearance of the house.

Through our representatives—soundly trained—you draw upon tested methods for exterior and interior design, for the scheduling of all construction operations, for setting up either site or factory fabrication, for the coordination of any or all operations. Equally important, you profit further by buying many products and materials from one dependable source.

Currently in American Builder there is appearing a series of articles by Griffith S. Clark of our firm—dealing with many of the most difficult problems currently encountered in the field of home construction. The principles there presented are applicable to residences in every price group.

The coupon below will bring you illustrated, specification material on all Homasote and Nova Products. You entertain no obligation by sending in the coupon.
"The only roof that can take it"

... says D. H. Hardman

Out in Kansas where the big winds blow, Dwight Hardman and his father before him have had a wealth of experience in the realm of roofing. Operating a chain of 28 retail yards, their record of sales tops three quarters of a million squares of shock-proof red cedar shingles, and Hardman should know when he says "no other roof material at comparable price can take it."

Like so many other lumber and building materials distributors, retailers, and experienced builders, Hardman has learned, through experience, that CERTIGRADE red cedar shingles are the best quality roof for the money. Best for protection, best for beauty, best for longer life per dollar of cost.
vermiculite slab insulation . . .

Two applications of vermiculite insulating concrete. Lightweight aggregates are porous and should be wet thoroughly before use. Usually a larger proportion of fine aggregates because of rough surfaces and irregular shapes of light aggregate particles.

application details for aluminum siding . . .

Aluminum clapboard siding in cut-out installation view. Curved face of material gives added strength, minimizes highlights or wrinkles.
WHERE TO INSULATE

VENTILATION above attic insulation is essential to summer comfort and to help control any moisture vapor and condensation conditions which might develop in winter. Two standard methods are louvers and ridge and eave ventilators.

ALL dormers should be insulated with special care. The entire surface of the exposed walls as well as the ceiling sections must be enclosed with insulating material. All narrow spaces around windows should be carefully packed to assure maximum efficiency.

INSULATION should form an envelope to separate the heated rooms of a house from the unheated porches, garage, attic and crawl space. If the attic is not used, insulation should be placed in the attic floor. If a room is built in an attic or low upper-story area, insulation should be installed in the walls and ceiling by following the outline of the room. Flow of air from the eaves to gable or ridge ventilators should not be blocked at the knee walls.

IN DETERMINING where to insulate in a structure the general rule to follow is to insulate the walls, ceilings and floors immediately surrounding the area to be heated in cold weather. For maximum comfort in warm as well as cold weather, exterior walls should always be insulated. The builder has a wide choice of insulating materials from which to choose in the two motor groups or combinations of the two mass insulations which depend on bulk or thickness for heat resistance, and reflective insulations which depend on the character of surfaces for efficiency.

WHERE HEAT IS LOST OR GAINED IN A BUILDING

Studies of typical buildings as to relative heat loss and gain through various parts or sections are given below. These values are not for the same structure and are typical enough to be indicative of heat transmissions:

<table>
<thead>
<tr>
<th>Heat Loss in Winter</th>
<th>Heat Gain in Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>32.9%</td>
</tr>
<tr>
<td>Ceilings and roof</td>
<td>22.3%</td>
</tr>
<tr>
<td>Floors</td>
<td>12%</td>
</tr>
<tr>
<td>Glass and doors</td>
<td>29.9%</td>
</tr>
<tr>
<td>Infiltration</td>
<td>14.7%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The above figures were assembled from studies of typical two-story houses. The percentages would vary somewhat on one-story houses because the ceiling area would be proportionately greater and the wall area less.
Ruberoid offers you more than the quality that's built into its products. Ruberoid, alone in the roofing and siding field, has earned the Good Housekeeping Seal of Approval. Millions of people see Ruberoid roofing and siding advertised in The Saturday Evening Post, Household, Good Housekeeping and leading farm magazines. These are the products that help you build better at lower cost and satisfy customer desires.

Color-Grained Siding
... the decorator-designed, textured asbestos-cement siding that revolutionized the siding market. Now, it has a new sales feature... Durac protective finish. Six appealing colors.

ShadoWedge
... the tapered asphalt undercoating strip that offers a tighter, better sidewall and adds extra beauty to Color-Grained Siding by providing deep shadowlines.

Tite-On Shingles
... the original interlocking, wind-defying shingle, widely imitated but never equalled in performance and sales appeal. Now available in new pastel blends.

Shake-Design Roll Siding
... shake textured mineral-surfaced asphalt beauty, plus lasting fire and weather protection, opens the door to low-cost modernization jobs.

Crawl Space Cover
... has become a best-seller for use in basementless houses and "cast-on-the-ground" concrete slabs. It's required on many F.I.A. jobs.

Perfect Balance Thick Butt Shingles
... the perfect shingle with extra coating top and bottom... for extra weight where it's needed to give thicker butt lines, extra wear and protection.

Shake-Design Roll Siding
... shake textured mineral-surfaced asphalt beauty, plus lasting fire and weather protection, opens the door to low-cost modernization jobs.

Dubl-Coverage Roll Roofing
... with fully coated sanded selvage. Suitable for cold as well as hot built-up roofing applications. 60 lb. roll meets all specifications.

Mount Vernon Asbestos Roof Shingles
... offer lifetime beauty, fire protection and economy. Butt lines provide deep, irregular shadows. A best-seller for your quality market.

These are some of the more than 100 Ruberoid products that mean good building and good business for you. For complete information on every type of asphalt and asbestos products to meet all your customer needs, see your Ruberoid dealer. The Ruberoid Co., 500 Fifth Ave., New York 36, N. Y.
Color sells homes. And here are the colors that sell best—twenty beautiful deep-tone and pastel shades carefully selected on the basis of home-buyer demand.

Offer your customers their choice of these gorgeous Fynal-Kolors and see how much faster your homes sell.

NO EXTRA CHARGE FOR FYNAL-KOLOR

Under the exclusive Creo-Dipt Optional Kolor Plan, the purchase of factory-primed red cedar Pryme-Shakes entitles you to sufficient Fynal-Kolor for one-coat coverage by brush or spray.

Mail Coupon for COLOR CHART

CREO-DIPT CO., INC.—Dept. AB-43
North Tonawanda, New York

Please send me full information on the exclusive Creo-Dipt Optional Kolor Plan and the new Fynal-Kolors for '53.

NAME

ADDRESS

CITY ZONE STATE

lock system for siding...

Applying asbestos-cement siding to gypsum sheathing by special locking system. Attachments include corner and horizontal channels and locking nails.

insulation between studs...

Aluminum reflective insulation bowed between studs; indentation made by running fingers down each side of stud. Install parallel to face of studs, starting with middle stud. Box in and cover sill and top plate.

applying blanket insulation...

Wood fiber blanket insulation is applied in continuous strips parallel with framing members, with spacing flange lapped over inside edge or face; tacked or stapled through flange for fastening until held permanently with plaster base, interior finish or flooring.
Barrett offers you the greatest all around promotion program in the Roofing industry!

Barrett provides the hard-hitting support that helps you build greater profits from roofing sales.

Just look at some of the sales aids included in Barrett's promotion program:

- Dramatic window and counter displays in full color.
- Ingenious 3-dimensional slide films which bring the Barrett shingle line right to customers' eyes.
- Newspaper mats and electros for local advertising.
- Impressive personalized business stationery and forms.
- Permanent and portable samples.
- Shingle Buyer's Guides and presentations for show-room and soliciting use.
- Mailing pieces and post-cards to arouse potential customers.
- Outdoor signs for your buildings and for job use.

... these and many more — all working to bring you customers.

And Barrett support does not stop there! National advertisements make homeowners conscious of the value, both in beauty and protection, of a new Barrett roof. They stress the importance of purchasing from recognized Barrett dealers — for application by Barrett Roofers.

If you are not yet tied in with Barrett — ACT Now! You get greater profits when you handle Barrett — famous for fine building materials for almost a century.

Building your business... is the business of...
**IN-SINK-ERATOR MFG. CO.**

**RACINE, WISC.**

**ARROW GUN TACKER**

**AUTOMATICALLY REPLACES HAMMER AND NAILS AT TRIGGER-RATE SPEED!**

Uses staples up to 9/16" leg.

Ideal for applying ceiling tile, cornerite, insulation, building paper, roofing felt, underdecker, etc.

**ARROW FASTENER COMPANY, Inc.**

1 Junius Street Brooklyn 12, N. Y.

**NO Drip TAPE**

Condensation drip from cold water pipes is a menace—damages merchandise—rusts pipes and costly fittings—creates floors slippery and dangerous.

NoDrip Tape forms a tight, moisture-proof jacket around pipes and joints. Turns idle space into dry room for work, play, storage, etc. Apply with your hands—no tools, clips or adhesives needed.

Roll covers about 10 feet of 1/2" I.D. iron pipe or 13 feet of 1/2" O.D. copper tubing.

Get at Hardware, Plumbing, Dept. Stores, Mill Supply and Refrigeration Supply Jobbers.

Write for Circular.

J. W. MORTELL CO.

Technical Coatings since 1895

505 Burch St., Kankakee, Ill.

**asbestos-cement shingle application . . .**

**CANT STRIP:** Formed after deck has been prepared by applying 1x1-1/2-inch wood lath over wood sheathing along edge of eaves.

**ASPHALT FELT:** Cover entire roof deck with asphalt-saturated felt, allowing 4-inch horizontal laps, 12-inch vertical laps and 12-inch laps at all valleys, hips and ridges.

**STARTER COURSE:** Lift up felt along eave and apply a full size starter shingle to overhang rake and eave 1-inch. Use four nails per shingle. 1-1/2-inch for new work, 2-inch for re-roofing.

Next starter goes parallel to eave with 1/16-inch space between vertical edges of shingles.

**FIRST COURSE:** Begin with half shingle, edges projecting 1-inch over eave and rake. Use four nails per shingle; do not drive nails home. Next apply full-size shingle parallel to eave.

**SECOND COURSE:** Start at rake with full-size shingle, aligning right hand vertical edge and horizontal shoulder with center notch in top joint of first course shingle.

**RIDGE AND HIPS:** For roll-type hips and ridges apply 1x3-inch furring strip on edge. For Boston type hips and ridges apply 1x3-inch furring strips flat along both sides of hip and ridge.
Plan kitchens for an efficient arrangement of equipment, with ample work surface adjacent to each work center. Sufficient storage space should be located near each major appliance, planned to fit the particular needs and habits of the family—and the cook. Try to keep traffic patterns clear of work areas, and make economical use of any remaining space.

Successful home builders have long realized that a satisfactory kitchen puts “plus value” in a house offered for sale, reducing sales costs and making the purchaser better satisfied over the years.

Planned Efficiency

Work measurement and methods analysis applied to the kitchen have revealed that half the walking in preparing a meal is between range and refrigerator. Because more trips are made from dining area to kitchen during clean-up than in serving, door to dining area should be close to sink with work space by the sink.

There should be at least 36 inches of work space by the refrigerator on the opening side, 18 inches by the range, and 36 by the sink, preferably divided on either side.

Storage space is calculated in a minimum basis of 6 square feet of wall cabinet for each permanent resident of the home, plus 12 square feet for accumulation and entertaining. Figure one person per bedroom plus an extra person for master bedroom.

Base cabinets should occupy all open space beneath wall cabinets. Actual practice has shown that for greatest efficiency there should be between four and a half and five and a half feet of counter between sink and refrigerator, and between three and four feet between sink and range.

Clearance Dimensions

Clearance of 18 inches is best between counter surface and bottom of wall cabinets. Cabinets above range should have 22 inches clearance. Major appliances are from 24 to 28 inches deep; to clear them, any door opening should be at least 30 inches from the corner. 48 inches clearance for a door next a range is desirable.

The distance between a window opening and a corner should be at least 15 inches because standard flat wall cabinets are about 13 inches
Wood wall cabinets provide convenience for kitchen in ranch type home. Wall cabinets are available from 12" to 30" in width and base cabinets in similar sizes. A wide range of special fixtures adds to efficiency.

Long-Bell Lumber Co. Data

Wood wall cabinets are made with either stationary or adjustable shelves to fit the housewife's needs. Special sections are made to fit surface cooking units, modular ovens, above and around refrigerators and counters and other kitchen units.

In depth. Underside of window sills should be at least 44 inches from floor to provide space for backsplashes.

Kitchen Arrangements

The four basic types of modern kitchen arrangement include the U-shape, the L-shape, the one-wall type, and the corridor layout. The conventional "u" is usually found to be most efficient. Placing the sink under a window on the center wall will save the most steps.

Refrigerator - Freezer

Two doors open to units with two different temperatures in this 9.4 cu. ft. model combining freezer and refrigerator. Separate controls keep both humidity and temperature at desired levels. Self-defrosting feature of lower compartment is popular with home makers. 29 3/4 inches wide and 59 inches tall, the unit fits the same space as many older models.

424 American Builder
plan an open-plan kitchen in natural birch with new Curtis Woman-Designed cabinets

Kitchen and laundry—or kitchen and breakfast nook—can be on intimate terms when you choose one of the new Curtis kitchens. Woman-designed, these smart, flush-faced wood cabinets embody 53 beauty and convenience features which women want. Available either in natural birch or finish-coated in white, ready for decoration, they offer you almost unlimited planning flexibility for any size or shape of kitchen. Hardware is furnished and hinges applied.

New Curtis Base Island Unit has double doors on both sides so two trays and sliding table are accessible from either side. Center partition in bottom.

The new Curtis Tray Units are available in 9 widths with double doors in 24" and over. Suitable for linen or pan storage. All trays dadoed for dividers.

Step-saving hanging units have shelves accessible from both sides. Shelves have safety rests and are easily adjustable in height. The new Curtis kitchens were designed, tested and approved by outstanding home economists.

Get All the Facts for Your File—Mail the Coupon!

Curtis Companies Service Bureau
AB-4, Curtis Building
Clinton, Iowa
Please send booklet on the new Curtis woman-designed kitchens.

Name: ........................................
Address: ........................................
City: ........................................... State: ...........................................
Build-in Apex Appliances... the Top-quality Line that competes on price!

APEX DISH-A-MATIC SINK.
This modern, automatic dishwashing center, streamlines any kitchen. Does a complete service for 6 to 8. Overall dimensions: 48" wide x 25" deep x 36" high, plus 4" splash panel.

BUILT-IN 4-GALLON TANK.
Every Apex DISH-A-MATIC Automatic dishwasher has this Apex Molded "Lifetime" Fibre-Glass Hot Water Tank. It maintains a constant supply of 180° hot water for hygienic dishwashing.

APEX CABINET MODEL. This popular model has all the deluxe DISH-A-MATIC automatic dishwashing features... built-in tank, "whirl-scrub" cleaning action, forced air drying, double-rinsing. Overall dimensions: 24" wide x 25" deep x 36" high, plus 4" dial panel.

APEX CUSTOMIZED MODEL... is a "drop-in" DISH-A-MATIC dishwasher for custom installation in any kitchen counter work surface. Control Dial Panel can be mounted on wall or splash panel at top-rear, or on front of cabinet. Overall dimensions: 24" wide x 24" deep x 36" high.

APEX WASTE-A-MATIC... disposes of food wastes electrically, is completely odorless, self-cleaning, and clog-proof. Pulverizes all food wastes. (Optional equipment on DISH-A-MATIC Sink)

"We don't believe in work for Women!"

New Apex Matched Laundry Set
The incomparable WASH-A-MATIC Automatic Clothes Washer, and the superb, new Apex (Gas or Electric) Clothes Dryer are styled to match in beauty and performance. "Teamed-up", they streamline utility room or basement laundry centers; are easy to install and give perfect, vibration-free performance. Dimensions: Washer, 27" wide x 281/4" deep x 36" high, plus 43/4" control panel; Dryer, 30" wide x 27" deep x 36" high, plus 43/4" control panel.

APEX GIANT SUN-GLOW DRYING ELEMENT. This big heating element is an exclusive Apex feature. Sanitizes as it dries the clothes with infra-red rays, safely, and uniformly with its thermostatically controlled drying rate.

THE APEX ELECTRICAL MANUFACTURING COMPANY
CLEVELAND 10, OHIO

Write today for complete installation data; check your selection and fill in your name and address below:

Name
Address
City State

□ Builders Specification □ DISH-A-MATIC
□ Roughing-In Manual

426 AMERICAN BUILDER
Plan above and elevation at right show how little space is actually required by modern laundry appliances in fitting up laundry section of modern kitchen-utility plan for ranch type home. Cabinets above equipment provide space for storage of soaps and detergents, laying folded clothing, and storage of overflow items from cabinets in kitchen proper.

The "L" must have storage, preparation, cooking, and cleaning work centers in proper sequence to be most efficient. The opposite walls are commonly used for breakfast nooks or laundry areas.

Wiring the kitchen today is most important, as a breakfast involving the use of toaster, grill and electric coffee maker might demand as much as 4,000 watts. If laundry equipment is in the same room, demand loads may be even heavier.

Floor and wall coverings should be durable, easy to clean. Critical to successful planning is the exact measurement of all dimensions so that no odd spaces occur which either require filler units or become dirt catchers.

Remodeling

Remodeling enables builders to contact new clients, maintain contacts with old customers, and maintain continuous sales promotion activities.

Appliance manufacturers have prepared numerous sales tools and planning aids that simplify the process and make sales easier.

In making preliminary sketches, be sure all dimensions are exact; locate water sources and present wiring; note swing of doors that open into room; check heights of window sills and ceilings. Get dimensions of any present appliances that will remain. Check the entire plan carefully with the customer.

**Special features in kitchen cabinets...**

Convenience in this kitchen is increased with metal drawers, sliding shelf hardware for mixer shelf, spice and package shelves, revolving corner unit, and accessible towel storage.

The "lazy-Susan" revolving corner unit is easily accomplished with this economical pivot hardware. A large ball bearing carries the load and insures smooth operation.

Courtesy General Electric Co.

Picture of installation shown in elevation of plan above, showing how cabinets and efficient equipment layout make laundry-utility area easy to keep clean and orderly.
as important as hardwood flooring in selling your new homes...

You Need **FASCO Ceil-n-Wall VENTILATING FANS**

FASCO Ventilating Fans' quieter, power-plus performance can make your homes more salable. Value-wise, sales-wise . . . they're as important as hardwood floors. Customer-preferred Fasco Ventilating Fans add a real sales punch! Every Fasco Ceil-N-Wall Ventilating Fan you specify proves you build extra quality houses.

**EXCLUSIVE FASCO TURBO-RADIAL IMPELLER**

Heart of the Ceil-N-Wall. Impeller is designed to deliver exceptionally high air volume through long ducts and elbows and against high static pressure. Impeller disc and baffle plate prevent air recirculation. Extremely quiet in operation.

**FREE** Get all the facts on the complete Fasco Ventilating Fan line. Write today.

**SPECIFY FASCO FOR EVERY VENTILATOR INSTALLATION**

MANUFACTURERS OF THE ONE COMPLETE LINE OF VENTILATING FANS

AMERICAN BUILDER
The strongest seller through lumber dealers in kitchen cabinet history

One look at this four-color, beautifully printed folder—and other new Long-Bell literature—and the lady of the house will immediately see herself in the picture. The picture: Long-Bell cabinets of her choice in her kitchen!

This new literature, which is part of Long-Bell's Kitchen Cabinet Merchandising plan, will prove one of the most effective sales tools you've used in a long time. These books describe to your customers all the Long-Bell cabinet features; explain the three-inch units of measurement for a fit without "fiddling around"; show different finish arrangements.

It will mean sales to you to point out to potential customers the low cost and versatility of Long-Bell cabinets. Wood cabinets mean less kitchen clatter.

The homeowner has complete range of decorating schemes. Beautiful rift grain wood can be had in natural finish or painted in color.

Let us send you samples of this new "selling-tool-packed literature." Get all the details of the complete Long-Bell Kitchen Cabinet Merchandising Program. Use the handy coupon below.
Doors of both base and wall cabinets are hinged for greatest convenience for access to storage space in this modern kitchen layout. Rolling door cabinets hang under conventional steel wall cabinets to add convenience to storage of small items. Wall cabinets mounted above laundry appliances provide necessary work and storage space for that activity.

Kitchen plan for No. 2 ranch type home provides generous work and storage space. Combination dishwasher-sink has food waste disposer. Note work area adjacent to opening side of refrigerator.

...built-in ovens and cooking tops

Drop-in cooking top and in-a-wall oven are features of this kitchen plan for No. 2 ranch type home. The convenience of peninsula snack bar to cooking top highlights the flexibility of arrangements possible with these fixtures for decentralized cooking. Heavy insulation built into the oven is the basis of "retained heat" cooking which makes for fuel economy. Drop-in cooking top fits into a waist-high counter top, where wide work surface increases efficiency.

Double built-in cooking top in an island arrangement with oven mounted on base cabinet next to the sink is a feature of this modern kitchen in the home of L. T. Kagawa, Honolulu. Cabinets in kitchen at left by Tracy.
space-saving laundry...

Laundry space in plan for ranch type house No. 1 allows three basic components of laundry to sit along one wall and still make space for necessary laundry tray. Supplementary equipment useful in the home laundry might well include stain removing agents, convenient work table, small mending kit, and possibly sewing machine as well as the usual starch, bleaching, and detergents. Fold-away ironer provides convenience of complete laundry operation in minimum space.

efficiency kitchen...

Efficiency kitchen for apartments and small homes makes possible maximum use of remaining space for other living. Housewife has a minimum of steps to take in food preparation, cooking, and cleaning. The unit in its several sizes may be used alone or in combination with other kitchen appliances and cabinets to make up an efficient working area.

plumbing connections for disposer

Local codes and good sanitary practices must be observed along with manufacturer's instructions in installation of waste disposers. Typical drain connections for GE Disposall, above, show unit installed with dishwasher not equipped with a drain pump assembly. Drain line from washer should enter branch drain from top. 1 1/2" is minimum drain pipe size from waste disposer.
The luxurious Palisade House, overlooking the Hudson River in the Riverdale section of New York City. This project will have 130 apartments.

The spacious Barclay House Apartments in Flushing, Long Island. There will be 205 apartments in this project.

Take it from this famous father-and-son team...

"For Smart Styling and Tenant Appeal we specify KELVINATOR every time"

The plans for these two great projects have just been completed by Henry Kibel. His father, Charles Kibel, is ready to begin construction early this spring.

Both projects have been planned for maximum tenant appeal. That's why, when it came to specifying refrigerators, the Kibels' choice was the same as it has been for twelve years—Kelvinator. Henry Kibel puts it this way: "Kelvinator packs a lot of features and space cubage into an expertly-designed cabinet. One of the new models we've ordered provides 9 cu. ft. of storage space in a cabinet only 28 1/4" wide. All this space together with the full-width freezer and shelves in the door appeal strongly to tenants. And the Kelvinator name in the specs is a great help, too."

Before you order refrigerators, make sure you check into Kelvinator first. For full information on refrigerators—and all other products in Kelvinator's expanded new line—write Dept. AB-4, Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

One of the many fresh, functional features found in the new Kibel projects is the "pass-through" which links the kitchen to the dining area in a delightful, practical, but unobtrusive way. Note the handiness of the refrigerator and range to the serving counter, as shown in this architect's sketch.

IT'S TIME TO GET Kelvinator AND BE YEARS AHEAD!

Kelvinator Division of Nash-Kelvinator Corporation, Detroit 32, Michigan
Refrigerators - Ranges - Freezers - Water Heaters - Washers & Ironers - Kitchen Cabinets & Sinks - Garbage Disposers - Room Air Conditioners

AMERICAN BUILDER
LOOK! COMPARE!
See Why Gunnison Homes Use
American Kitchens

LOOK—COMPARE FEATURES LIKE THESE:
1. Easy-to-clean, smooth surfaces with no dirt-catching handles.
2. One-piece tops of lifetime vinyl, no seams to catch dirt.
3. Sink bowl 15% larger — no dirt-catching ledge.
4. Rounded, one-piece drawers that clean as easily as wiping out a bowl.
5. The American Kitchens Roto-Tray Dishwasher, the most modern dishwasher on the market today, washes dishes 3 times cleaner.

Builders of the famous Gunnison Homes know how important the kitchen is in selling their homes. That’s why they use American Kitchens.

Here is the kitchen that women want most, the kitchen that helps sell homes faster! Superior construction, heavier gauge steel, expensive sound-proofing, and exclusive body-contour design are some of the many features that save hours of kitchen work. Why don’t you find out what American Kitchens can mean to the salability of your homes!

Compare construction, design, work-saving features ... and then choose American Kitchens!

AMERICAN KITCHENS
AVCO Manufacturing Corp., Connersville, Ind., Dept. AN-4
Please send me information about American Kitchens builders’ discount plan and your new Architects and Builders File.
Name
Address
City
State

AMERICAN KITCHENS
“SAVE 1000 STEPS A DAY”

APRIL 1953
New MURRAY

Smart Contour Styling

with instant appeal to the feminine eye

MURRAY CABINET SINKS

- 66" DE LUXE TWIN - also available in standard model with two drawers.
- 34" DOUBLE DRAINBOARD Deluxe Sink - also available in two drawer model.
- 42" TWIN - also available with deep bowl on left; with two deep bowls; with single shallow bowl; with single bowl, left or right.

MURRAY BASE CABINETS

- 30"-HIGH WALL CABINETS - 2-door models also in 21", 24", 27" and 36" widths; 1-door models also in 15" width. Single doors hinged left or right.

MURRAY WALL CABINETS

- 18"-HIGH WALL CABINETS - single-door model hinged left or right; 2-door models also in 21", 24", 30" widths.

CABINET SINKS

The 66" Deluxe twin bowl

WALL CABINETS

BASE CABINETS

NEW! WOOD COUNTER TOP

15" or 18" wide with 3" integral back-splash. One-piece laminated edge-grain maple. Also regular plastic cabinet tops, 15" to 36" wide, in wide range of colors.

NEW! MURRAY FOOD WASTE DISPOSER

Continuous feed, extremely quiet. Small, lightweight. Simple, one-man installation!

NEW! 54" WALL CABINET CLUSTER

Four doors, two solid fixed shelves, plus exterior utility shelf. 30" height, 13" depth - matches other wall cabinets' dimensions.

NEW! CONDIMENT CABINET

Mounts under wall cabinet. Two sliding doors with chrome knobs. Also available in 30" width.
Geared to give your houses extra sales appeal!

Builders across the country hail new program of co-operation in planning, promoting and pricing Murray kitchens for new construction.

Murray's new Builder Department is staffed by men of sound practical experience. Headed by the well-known C. J. ("Phil") Filson, these experts can really do a job on a builder's planning and selling problems. Depend on them to come up with a winning answer!

Builders can turn to these able Murray men for real help in planning outstanding sales appeal for small space and limited budget—for aid in getting out the right promotional material on a building project, large or small—and for co-operation in speeding the supply and streamlining the price of Murray kitchen units.

See—compare—the Murray line before you decide. In styling these modern beauties we've taken to heart the popular slogan "Never underestimate the power of a woman." You've got to sell a woman if you're going to sell a home—so send coupon today and see what an edge Murray gives you in style and sales appeal!

**NEW!** "LAZY SUSAN" CORNER BASE CABINET

Three 20½"-diameter revolving shelves with vertical flange at outer edge. Semicircular door is mounted on shelves.

**NEW!** "LAZY SUSAN" CORNER WALL CABINET

Three 20½"-diameter revolving shelves with vertical flange at outer edge, 15" door. Also available: corner wall cabinet with fixed shelves.

The Murray Corporation of America
Home Appliance Div. Sales Offices, 7700 Russell, Detroit 11, Michigan

Please let me know in detail how the Murray Builder Dept. is geared to help me.

Name

Firm

Address

City. Zone State
Small or sumptuous—they're alike in one respect...

They have Electric Ranges!

One house shown here sold for under $10,000. The other was in the upper-income class. But both had what all types of home buyers want—Electric Ranges in the kitchen. They've learned that cooking electrically is both economical and easy, and assures a clean, cool kitchen. No matter what the size or cost of your houses, one item of equipment that will really help you make them sell is the Electric Range!

According to Mr. Joseph P. Lenny, who built this small home in Runnemede, N. J. (he sold 25 the day he opened his model house)—"In my experience, most home buyers can't resist an all-electric kitchen. And the kitchen can't be all-electric without an Electric Range. Although my homes are moderately priced, I offer this plus item and it helps me stay ahead of the field."

Mr. Harry LeVelle, builder of this large home in Chevy Chase, Md., says, "90% of my home sales are to women who love the all-electric kitchen. They want to work in such a kitchen, although you might think that homemakers in such families would not be doing their own work."

Among the appliances that help the homemaker to achieve gracious living in the Chevy Chase home is the modern, automatic range, and—of course, it's ELECTRIC! Mr. LeVelle, the builder, is convinced that the electric kitchen is his greatest sales factor.

More Builders Every Day are Installing

Electric Ranges

Electric Range Section

National Electrical Manufacturers Association
155 East 44th Street, New York 17, N. Y.

Admiral * Crosley * Deepfreeze
Frigidaire * General Electric * Gibson * Hotpoint
Kelvinator * Monarch * Norge * Philco
Westinghouse
3 reasons WHY Harrison is THE BUILDER'S BUY... IN Steel Cabinets

HARRISON IS A complete LINE
all the cabinets...all the accessories...all the gadgets needed for any kitchen job!
- Colors and wood grain finishes
- Standard cabinet sizes 12” to 72”
- Custom units made to measure

HARRISON IS A quality LINE
contemporary design...superior construction and finish demanded for luxury kitchens!
- One-third heavier weight steel
- Radius edges  Nylon roller drawers
- Spring hinges  Sound insulation

HARRISON IS A competitive LINE
the deluxe custom-type features required for modern interiors...at standard prices!
- Priced for middle-income bracket
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APRIL 1953
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- It's new. It's big! It has selling power for you. Republic Steel kitchens offer you the industry's greatest selection of matching cabinet styles and sizes. You use economical standard cabinets to give your kitchens a house-selling "custom-made" look.

All-steel construction means standardized units all ready for fast installation. You just uncrate and install. No on-the-job cutting and fitting. No painting, ever.

It's the greatest kitchen value on the market... with new styling, new features... new ideas... new everything. All backed by dynamic new sales programs that are worthy of the big name it bears. Get all the facts now. Write: Berger Manufacturing Division, Republic Steel Corporation, 1022 Belden Avenue, Canton 5, Ohio.

IT'S THE NEW BIG NAME IN STEEL KITCHENS
Two Good Reasons You'll Build BETTER KITCHENS WITH ELKAY...

For Smart Appeal and Permanence include ELKAY Lustertone, the only sink guaranteed to outlast the home in which it’s installed. The sterling beauty of Lustertone is an unmistakable mark of quality that reflects confidence in the builder—inspires a buying urge in every prospect. Find out about the new low prices on Lustertone stainless steel sinks—see just why it’s an investment in sales appeal and permanent satisfaction you can’t afford to leave out of your plans.

For Color—Convenience—Economy you can count on ELKAY Duratone, the all-new sink and cabinet top that combines colorful beauty bonded FORMICA with a permanent, rustproofed steel core. Custom-built in any size and shape—furnished with or without famous Lustertone sink bowls, or finished to combine with any sink. For the first time ELKAY brings you the economies of a factory-fabricated Formica on steel top with a guaranteed bond. Design better kitchens with Duratone.

Duratone tops are guaranteed and will be made up in any size to fit any plan—with or without sink bowls. Priced competitively yet built for superiority. Public acceptance of the ELKAY name, together with consumer advertising support, brings you another pre-sold product. Write for literature and prices on both lines.

A. B. KITCHENS & SMALL ROOM VENTILATORS give you all 5 top quality features

INTERCHANGEABLE DISCHARGE for easy installation
CENTRIFUGAL BLOWERS for quiet, powerful suction
Drippless grille for appearance and protection
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FIVE YEAR GUARANTEE insures top quality

MODEL 1201 100 C.F.M. for bath-rooms—time delay switch optional.
MODEL 1501 300 C.F.M. for average kitchen, laundries, dens.
MODEL 2501 425 C.F.M. for large kitchens and other rooms up to 2000 cu. ft.
MODEL 3501 550 C.F.M. for installation in cabinet over range Hood optional.

5705 S. Main Street, Los Angeles 37, Calif.
three ways to vent clothes dryer...

1. **BASEMENT INSTALLATION** with double laundry tray has hose connections from hot and cold water lines.

2. **BUILT-IN INSTALLATION** has pipes concealed in wall for hose connections and drain hose.

3. **STAND PIPE INSTALLATION** has hot and cold lines running to hose connections with stand pipe drain for drain hose.

4. **CONCEALED INSTALLATION** has wood cabinet built around hot and cold water pipes and standpipe drain to improve appearance.

**Dutch Oven gas range features divided top, center oven, cabinet base, oven thermostat, and flush-to-wall construction. Additional features optional include cooking well, automatic oven lighting, oven window, lamp, drip trays.**

**30-inch range has extra-large oven, seven-stage heating units for surface cooking, automatic clock and oven control with preheat cutoff. Electric appliance outlet, top floodlight and full width utensil drawer are also standard features.**
Moving dryer and washer into the end of the garage to create separate laundry area opens up this kitchen plan for more convenience and enjoyment. Millwork cabinets combine with modern appliances to create an atmosphere of charm and warmth.

Installation with trap under sink and pipe leading into wall will have cavity free of waste water when not in use due to the 11 1/2" minimum from pipe to bottom of sink. Section shows parts used to assemble unit to cast iron sink. Check for leak-proof fit before using unit.

Installation and view by The Ideal Co.

buyers like kitchen cabinets with . . .

---

Installation details

---

Utility unit permits storage of brooms, mops, vacuum and like items, or may be used as clothes closet.

Over refrigerator unit has changeable shelf for adaptation to varying needs as shown in illustration above.

RANGE HOOD fits over cooking area on bottom of cabinet. Trade-Wind ventilating fan operates inside cabinet.

Revolving corner base-unit for storing bulky equipment. Rotates in complete circle in either direction.

Revolving corner wall unit is similar in design to the base unit shown left. Also saves space ordinarily wasted.

Partitioned drawers provide convenient, safe, sanitary storage for cutlery. May be fitted with removable sliding tray.

Sliding wire shelves give full view of contents. Permit greatest adaptability in storing food and utensils.

Storage racks — 1. Step shelves for small condiment containers. 2. Holds pan lids on inside door. 3. For soaps and scouring powder.

Maple chopping block may be inserted any place in top. Convenient for cutting meats, vegetables, slicing bread.

Stainless steel inserts in counter top near range provide handy place for hot utensils. May be any size desired.

Custom valances, moldings, forring, screens and novel parts are available for creation of individualized kitchen décor.

Courtesy Mutschler Bros. Co. & Kitchen Guild of America
1. Attach cabinet hanger bars to studs with wood screws. Use chalk line 81\(\frac{1}{4}\)" from floor as guide to line up bottom of hanger bar.

2. Hold cabinet against wall with top about 3" higher than the hanger bar. Let cabinet slide down to engage flange of hanger bar.

...how to install steel cabinets...

3. For tight fit and even distribution of load bolt cabinets together. Check for level, top of cabinets 84" from floor. Drill two holes in adjoining side panels as far front as possible.

4. Install base cabinets. Fasten to wall. Remove drawers and bolt and bolt cabinets together with stove bolts together in same fashion and also onto sink base.

5. Remove end cap from side of vinyl top which fits adjacent sink and attach sink-to-counter sealers to it and to left side of maple top. This makes water tight joint when caulked and fitted into place. End cap removed from right of vinyl to top fits onto right of maple top.

6. Counter top over serving cart is fastened to the sink cabinet with an attach channel, and supported on the left by a support bracket.
A Crosley-equipped Kitchen can be an effective sales aid for any builder, according to Stanley Praver. The kitchen is one of the first rooms prospects want to see in a new home. And a well-designed kitchen, completely equipped with brand-name appliances, can put them in a buying mood right from the start.

That's why a Crosley Kitchen makes such a difference in selling a home! Mr. and Mrs. Prospect know Crosley as a pioneer in styling and as a leader in kitchen design and engineering.

And prospects are really impressed when they learn that the Crosley Kitchen can be included right in their mortgages. This way, they can have a home already complete with Crosley appliances without the usual high short-term payments. That's a real sales help.

Take a tip from Stanley Praver! Prove to yourself how easily Crosley products can be installed in your homes and what an outstanding sales job a complete Crosley Kitchen can do for you. Make a Crosley Kitchen your salesroom.
Here's the salesroom in the Ruskin Heights homes. This beautiful kitchen is designed for care-free living. The Crosley Sink and Wall Cabinets supply more than ample working space and convenient finger-tip storage.

"LUXURY" CROSLEY KITCHENS CAN HELP SELL YOUR HOUSES!

You equip your homes with star salesmen when you equip them with Crosley products. The famous Shelvador® Refrigerator, for instance, gives prospects more refrigerated storage space than other makes. The Crosley Electric Ranges offer such sales advantages as two-area heating in the range units and completely automatic ovens.

Crosley Sinks come in a number of sizes for any wall or floor space. And Crosley Base Cabinets with vinyl-on-steel tops supply you with plenty of work space in the most compact kitchens.

And remember, Crosley will help you plan your kitchen. Let Crosley's expert kitchen planners help you add sales-appeal to your new homes.

For More Information
Clip and Mail this Coupon to:
Builder Sales, Dept. AB-43, Crosley Division, AVCO Manufacturing Corporation
1329 Arlington Street, Cincinnati 25, Ohio

CROSLEY DIVISION AVCO CINCINNATI 25, OHIO

SHELVADOR® REFRIGERATORS · SHELVADOR® FREEZERS · ELECTRIC RANGES · RANGE AND REFRIGERATOR PANTRIES · AUTOMATIC DISHWASHERS · ELECTRIC WATER HEATERS · ELECTRIC FOOD WASTE DISPOSERS · SINKS · STEEL KITCHEN CABINETS · VINYL-ON-STEEL CONTINUOUS COUNTER TOPS · HANDY ACCESSORIES · TELEVISION · RADIOS · ROOM AIR CONDITIONERS.
Cabinets in this all steel kitchen have welded construction, bonderized, baked enamel finish. Slight outward bulge of cabinet tops above doors makes knee room to stand and work, and recess at bottom makes toe room. Counter tops are vinyl plastic cemented to 18 gauge steel.

Specialties

Special features of modern kitchens include under-cabinet lighting of counters, ornamental valances that conceal lighting over sink or range, special wall shelving for condiments and small items, planning desk for the housewife, sewing machine installed in laundry area in regular cabinet, and decorative treatments of window sills.

Ranges and sinks may be arranged in island or peninsula fashion, combined with snack bar or breakfast nook or other features. Sliding door cabinets, additional (Continued on page 448)

Keeping laundry set-up within the kitchen area to save steps and ease plumbing installation, this suggestion for No. 2 ranch type home incorporates a full range of electric appliances with modern cabinets in an efficient layout. Not shown in view is suggested breakfast nook in right-hand corner of room.
cabinets in natural wood . . .

Natural wood finish enhances the charm of these cabinets, built to contain the new built-in ovens and cooking units of leading manufacturers. Featured in this layout is a base cabinet for storage of electric food mixers and accessories. Drawers are aluminum. Doors have silencers. Shelves are permanently mounted for secure load carrying.

Two plans with different arrangements of built-in oven, warming drawer, and cooking top with griddle show something of the flexibility of layout possible. Compact arrangement of cooking units in griddle top greatly increases cooking capacity of unit. Top element in oven is used for infra-red broiling.

Rough-in and installation details for built-in oven. Note two lengths of 2"x 4" to support oven. These must be level, flush with opening.

Warming drawer has similar framing, has thermostatic control to protect contents against overheating. May be used as storage drawer also.

Installation details for cooking top with griddle. Secure rough-in box to counter top with screws through holes provided in edges of box.
(Continued from page 446)
backsplash protection, and a host of special purpose cabinet fixtures make up a wide range of possibilities which the builder may draw upon to satisfy his customer.

Built-ins and Fixtures

The choice between snack bar or breakfast nook will be dictated by space available and family preferences. The snack bar may be combined with overhead cabinets, giving the illusion of more space. The built-in breakfast nook is usually more expensive, requires more space, but provides more luxury.

Cabinets and Sinks

Modern kitchen cabinets of wood or metal, designed as integrated units that harmonize with sinks and major appliances, are available in a wide range of stock sizes and shapes. The "custom look" may be had at relatively low cost.

Custom-fit counter tops are frequently installed over stock cabinets, giving a large area of work space free of cracks and joints.

The sink is the unit around which most of the cabinet layout is planned. Most modern sinks are either built into cabinets or designed to be installed in cabinets at the site. Mixer faucets with spray attachments are virtually standard equipment.

Ranges

Improved finishes, insulating materials, and modern design in both gas and electric ranges have kept pace with other advances in kitchen equipment and appliances.

Sizes range from small four burner units with underneath oven to 6 burner models with two ovens and two broilers. Other units are of modular construction which permits ovens and broilers to be built into cabinet units at various points in the kitchen, with surface cooking units in still other locations.

Washers

The automatic washer is now a "normal" rather than an unusual installation in a home laundry. Such equipment will require a single laundry tray, while the non-automatic machines and double laundry trays to facilitate rinsing operations. Plumbing should be roughed in to provide water and drainage lines, following codes relative to connections to waste lines.

Dryers

A number of manufacturers now provide a wide range of choice in compact, safe, and economical gas and electric dryers. While some locations permit venting of the moisture into the room, normal procedure requires venting to the outside to prevent excess moisture injuring plaster or woodwork.

Ironers

The addition of an ironer to the washer and dryer rounds out the equipment of a modern home laundry. They may be of the rotary or flat press type, and come in a number of sizes to fit family needs and customer's preference. Some have cabinet type lids of their own, and others are built for cabinet installation with other kitchen and laundry cabinet units.
Arrangement of food preparation and laundry areas in this plan provides for good lighting and ventilation, a minimum of steps, and relative freedom of work areas from traffic through the room. Breakfast area is designed to provide pleasant feeling of leisurely living.

luxury kitchen for gracious living...

Efficient arrangement of kitchen equipment in this plan makes for efficient operation of food handling and laundry tasks while retaining the spaciousness of luxury living. Unusually large room areas make greater distances to walk, but compact equipment arrangement by task grouping makes for economy of time and effort.

Food preparation center in this kitchen plan provides ample work space on both sides of sink and adjacent to opening side of large refrigerator. Window over sink is preferred by most housewives.

Cooking center has ample work and storage space for handling utensils and serving from stove to dishes. Freezer, visited less often than refrigerator, is out of the way yet near convenient counter space. Plenty of light in this process-line laundry arrangement. Automatic washer, dryer, and ironer are integrated with base cabinets and wall cabinets to provide necessary storage and work space for laundry operations.
Mr. Hendy of Cincinnati, Ohio, talked to builders from many states.

He questioned outstanding builders; asked them what was really behind their phenomenal sales of houses.

He came back feeling very certain that the installation of the General Electric Kitchen in his new houses would really help to sell them fast.

He found that women want the General Electric Kitchen in their new homes. He discovered, too, that this trump selling-feature cost the home-buyer only about $3.45 per month extra on monthly mortgage payments.

His judgment was right

He sold 64 houses equipped

Here is Mr. Hendy calling back on one of his new homeowners. Mr. Hendy is convinced—more than ever—that it pays to install General Electric equipment.

"Pleased as punch" with my new G-E Dishwasher," says Mrs. T. J. Radley, 1153 Morado St., Cincinnati, Ohio. "The dishes are cleaner than I can wash by hand, and G-E Disposall® is out of this world. No more garbage for us!"

"There's so much room" in my new G-E Refrigerator, and with four children, I certainly need it. I'm glad it's a General Electric Refrigerator, too, because it's a brand I know I can depend upon year after year."

"Look at my wall" and you can see how clean cooking by electricity really is. This G-E Range is wonderful. Heats up fast, too. And to think that all these G-E appliances are costing us only about $3.45 a month extra on our regular mortgage!"

AMERICAN BUILDER
with G-E Kitchens in 60 days
—before even one single foundation was completed!

Think about this a minute. Mr. William F. Hendy, builder of Arcose Company Houses in Price Hill, Cincinnati, Ohio, took a tip from the pages of other successful builders—and sold his houses in record time.

And, we say YOU can, too... when you install the G-E Kitchen-Laundry.

Two reasons why: First of all, women prefer General Electric appliances to any other brand. A 1951 survey shows that 55.7% of the people interviewed believe that G.E. makes the best appliances for the home.

Second: A G-E Kitchen-Laundry can be built right into houses in the $10,000 or $12,000 price range—and the monthly cost to the homeowner may be no more than that for a typical telephone bill, because under modern home-financing the cost of these dependable appliances can usually be included right in the regular mortgage.

Start selling your houses faster, just as many other builders are doing from coast to coast. See your local G-E distributor or write to the Home Bureau, General Electric Company, Louisville 2, Kentucky.

GENERAL ELECTRIC

APRIL 1953
Dishwasher sink beneath window; electric range moved out to establish traffic corridor between kitchen, laundry, and rest of house; and colorful built-in breakfast nook are highlights of this suggestion for the luxury ranch home kitchen. Partition to height of back splash backs up range and corner cabinets.

Refrigerator in the luxury ranch home kitchen opens towards ample counter space above built-in cabinets for food and utensil storage. Valance above cabinets is designed to match upholstery of breakfast nook. Counter space is convenient to dining room for serving and easing removal of dishes after the meal.

Refrigerators and Freezers

More efficient insulating materials and smaller power units have increased capacities of refrigerators without adding to over-all dimensions. Popular among modern units are those which combine freezer compartments or even larger freezer units built into the same piece of equipment. Both top opening and side opening freezers are available in sizes suited to kitchen installations.

Counters and Tops

Laminated plastic, linoleum, stainless steel, and tile are among the most popular materials for counter tops. Good fit and careful installation are necessary to secure tops that will not leak, pull away from cabinets or separate at the joints.

Fans and Ventilators

Ranges are ventilated on a through-the-wall basis when against outside walls, and through ducts concealed in soffits or between joists when located against interior wall. Many special types are available to operate through glass block or other special wall materials, by means of attic exhaust systems, and with hoods over the cooking area.

Dishwashers

The automatic dishwasher is often one of the "extra" features that helps clinch a sale. They are either built in as part of a cabinet sink, or may be had ready for installation in a cabinet arrangement. Selection of top or front load models should be on the basis of space requirements.

kitchen range ventilation...

Built-in exhaust blower in this kitchen range hood is baffled to draw air evenly from all sections of hooded area. It provides 18 air changes per minute between hood and range surface. Hood should be 6" longer than range for thorough coverage. Available in copper tone with brass trim or white enamel finish, the unit is easily installed with simple wooden wall frame installed on the wall so as to bring the lower front edge of the hood 69" from the floor. In new construction, this frame can be attached to studding and wall finished around it.

This type of kitchen ventilator has adjustable hood, air filter and power blower. Normal installation includes a duct which draws hot air in off the ceiling at the same time that hot air and cooking fumes are carried away from range surface. Venting is to outside through ductwork in a wall or via ductwork in a wall to an outside wall.

Higher water temperatures needed to scald dishes may require the use of a booster water heater located in the supply line ahead of the dishwasher so that other water for household use is not overheated.

Garbage Disposers

Waste disposal units—electrically operated grinders, shredders, or pulverizers, mounted in the sink.
sowing in the laundry...

A sewing machine in the kitchen-laundry or utility room is logical and convenient. This unit comes in a cabinet which matches standard kitchen cabinets in attractiveness and utility. Shown in plan are: (1) Cabinets, (2) Sewing Machine, (3) Sink, (4) Dishwasher, (5) Refrigerator, (6) Range, (7) Utility Cabinets.

Courtesy Domestic Sewing Machine Company

---

disposer fits any rough-in...

Deciding factors in home incinerator location should be convenience of housewife and chimney accessibility. For automatic disposal of burnable trash, this unit may be either gas or electrically fired to reduce waste to clean, odorless, easily removed ashes. Basement or utility room location is preferred.

Courtesy In-sink-erator Manufacturing Company

---

drain—are the modern method of handling food wastes. Elimination of odors and the outside garbage can add sales appeal that more than offsets initial cost of such units.

Plumbing and electrical installation must be made according to local codes and manufacturers' instructions. Individual incinerator units may be used in localities having plumbing restrictions. Gas or electric firing reduces waste to safe, odor-free ash removed at reasonable intervals.

Unit Kitchens

Builders of minimum space units such as motels and kitchenette apartments have profited from the development of unit kitchens in which range, oven, refrigerator and sink are combined into one space-saving unit which may take as little as 48" of floor space.

Laundry Equipment

Modern appliances make possible the satisfaction of most women's desire to have a first floor laundry to save steps and carrying. Compact units make possible an efficient laundry in relatively small space.
where the elements are at their worst

The dome of the Terminal Tower, Cleveland, Ohio, 614 feet above the sidewalk, takes a beating from wind, rain, boiling sun and subzero temperatures. The exposure to elements, beyond the endurance of most building materials, is protected with Thoroseal, as shown in above photograph.

Photograph on left shows how Bob Reynolds, of H. Reynolds Company, of Cleveland, Ohio, stands on extreme edge of hanging scaffold, 614 feet above sidewalk.

Get our new 20-PAGE BRO-CHURE, with designer's guide. Pictorially described, in detail... "HOW TO DO IT."

Standard Dry Wall Products

BOX X, NEW EAGLE, PENNSYLVANIA
A CHECK LIST OF POINTS TO PROTECT PAINT

BASEMENTLESS HOUSES
Use a heavy asphalt building paper beneath the floorboards to block the rise of vapor from the ground. Cover the ground with a layer of crushed rock, cinders or gravel, and provide grading which will direct surface water away from the building. Use rot-proof flooring, and at least 4 ventilating openings, one near each corner of the building. Insulate pipes.

FLASHINGS
Never omit or skimp on flashings. They may be needed for roof valleys, edges of roofs, junction of roofs with chimneys and dormers, headers over windows and doors, water tables, and junctions of siding with shingles, stucco or masonry. The need should be judged in the light of winter conditions. For instance, ice dams at the edges of the roof may back up melting snow well past flashings applied simply as protection against summer rain.

FOUNDATIONS
Waterproof underground walls by putting a thick outside coating of asphalt all around. Paint the foundation wall above ground on the outside with a 'masonry paint based on a polystyrene emulsion vehicle. For already built houses with a basement wall moisture problem, application of a cement-water paint system may be the solution; or painting with a polystyrene emulsion paint applied directly to the masonry and not over old paint of any type.

GREEN LUMBER
Be sure you're not using it.

GROUND CONTACT
Wooden studs and siding must not be brought into contact with the ground.

HUMIDIFIERS
Don't use them for at least 2 years in a new house with plastered walls. The plastered walls will release tons of moisture during the first few months.

JOINTS IN FREE-STANDING WOODWORK
Columns, posts, and railings whenever possible should be given the protection of roofs. If possible, such members should be made of the heartwood of naturally durable wood. Sapwood at such joints will take up water rapidly and is susceptible to decay. Dip all end-grain ends of pieces used in these joints in water-repellent preservative after they have been cut and fitted, and before fastening in place.

NAILS
Use aluminum or heavily galvanized nails to prevent discoloration of paint from rusting.

ROOF
A substantial overhang is very effective in preventing streaking of paint and making the coating last longer.

SIDING
Horizontal joints should overlap generously. Apply paint generously at these points. Vertical joints in horizontal siding should be made only over studs, and should be well staggered in the successive courses. Sealing the ends of the siding boards with paint will make a better job. Corners must be carefully fitted and covered with corner pieces or corner boards. Fit window and door cases with great care to keep out as much water as possible at the junctions with siding. Poorly joined window heads and siding butts are a menace to paint. Trim is best laid overlapping and overhanging the siding below it. Vertical siding must have battens to cover the long vertical joints. Remember that flush siding is very susceptible to penetration to rain. Building paper behind the siding should be water resistant but not too vapor resistant.

VENTILATION
Stagnant air spaces behind exterior walls will often cause condensation of water vapor, and paint failures. Be sure to provide adequate ventilation for attics, closed-off spaces under roofs, hollow columns, crawl spaces under porches and basementless buildings. Ventilation for crawl spaces should contain openings not larger than 1/4 inch; for attics and lofts, not more than 1/6 inch.

VAPOR BARRIER
Vapor barriers should be installed at the time of construction in all new houses built north of the 35 degree January isotherm line.

FOR MORE INFORMATION ON PRODUCTS ADVERTISED AND DESCRIBED IN THIS CHAPTER PLEASE USE ONE OF THE PREPARED INQUIRY POSTCARDS IN THIS ISSUE.
The real estate experts say that a good paint job increases the value of a house by 12 per cent. They also say that the three principal influences which sell a house are (1) location, (2) style, and (3) beauty—or the care and good taste with which the house has been painted, inside and out. The sales power of modern colors used with zip and understanding to create “appeal,” is a cornerstone of American merchandising.

So beauty definitely pays, and many builders of houses for sale take this lesson to heart, treating the painting phase of their operation with the care it rightly demands. This means painting with top grade materials, not only in carefully worked out color schemes, but also with proper selection and handling of the paint on the specialized surfaces involved.

Three Vital Points

Final responsibility rests with the builder, whatever may happen along the way. The vital points in this responsibility are: (1) the paint selected, (2) proper application, and (3) careful attention to those constructional details which affect the paint job. Painting specifications are a “must.” Too many contracts are verbal between builder and painter, allowing the painter too wide a latitude in the selection of material.

Kinds of Paint Coatings and Their Nature...

Many types and grades of house paint coatings flood the market. They can be classified broadly in three groups of high-grade white or tinted paints whose reliability has been well established. All three groups use linseed oil or other drying oil for the vehicle, no resin of any kind, and variable proportions of volatile thinner and drier. They differ in the nature of the pigments used, and the Forest Products Laboratory classifies them on this basis.

In group L is included pure white-lead in ready-to-use form; group TLZ includes ready-mixed paints made with titanium dioxide, white lead, and zinc oxide; group TZ includes lead-free paints made with titanium dioxide and zinc oxide for use in places where fumes of hydrogen sulfide are present, causing white lead to turn black.

Priming Coats

For exterior use, white lead is good for priming as well as finish coatings on wood of any kind. And for the following woods, which retain paint longest and withstand weathering well, a good house paint thinned properly can be used successfully as an undercoat: Western red cedar, other cedars except Eastern red cedar, Southern Cypress, and redwood. However, a modern primer is desirable with woods of all kinds, and is especially necessary with the following: Northern and Western white pine, Sugar pine, commercial white fir, Eastern and Western hemlock, Ponderosa pine, Eastern and Western spruce, Doug-

## WHAT TO USE — WHERE AND WHY

<table>
<thead>
<tr>
<th>Exterior Structural Material</th>
<th>Recommended Paint Material</th>
<th>Special Properties and Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>Ready-mixed or paste titanium-zinc or titanium-lead-zinc all-type house paint.</td>
<td>Seals against moisture, self-cleaning, minimizes dirt collection through controlled efflorescence, weather resistant, good durability.</td>
</tr>
<tr>
<td>Siding</td>
<td>On new wood or bare wood a special exterior wood primer may be used. (In many a non-urban situation, or one characterized by unusually troublesome painting conditions, pure white-lime in oil used as its own primer may give the most fool-proof, all-round performance.)</td>
<td></td>
</tr>
<tr>
<td>Trim</td>
<td>For ordinary appearance use house paint as above. For superior appearance use special alkyd resin type “trim colors” (undercoat and finish coats).</td>
<td>High specular gloss, longer retention of gloss and color, greater fade-resistance, smoother texture.</td>
</tr>
<tr>
<td>Shingles</td>
<td>Stain with creosote oil, or other type special shingle stains. On previously painted shingles, paint with house paint as above.</td>
<td>Protects wood against rot, drips to a dull finish.</td>
</tr>
<tr>
<td>Natural</td>
<td>Apply oil stain as desired. Use low solids varnish-type sealer-filler. Apply two or three coats spar varnish for gloss finish. For dull finish apply oil-wax type finishes (clear or stained), or rub with steel wool or sandpaper.</td>
<td>Protects against moisture and the ravages of weather, but does not preserve the natural color of the wood nor have the durability of painted coatings.</td>
</tr>
<tr>
<td>Masonry</td>
<td>Where NO alkali is present in masonry. A. Oil-type masonry primer followed by exterior masonry (oil) paint, or two coats of exterior masonry paint. Where higher gloss is desired the last coat may be house paint. B. Masonry paint based on alkyd resin emulsion vehicle (water thinned). Where free alkali may be present in masonry. A. First coat use chlorinated rubber-based paint, followed by second coat of chlorinated rubber paint, or long oil alkyd resin type masonry paint, or house paint. B. Masonry paints based on poly-styrene or rubber emulsion vehicles. C. Cement-water type paints, primer and finish coats.</td>
<td>Good durability, good weather resistance, minimum dirt collection. Easy to apply, moderately good durability and low sheen. Chemical-resistant, alkali-resistant, moderately good wear, water-resistant, good durability, low sheen for oil-gloss. Alkali-resistant, seals against moisture, durable, flat finish. Easy to apply, moisture resistant.</td>
</tr>
</tbody>
</table>

**Priming of inside woodwork involves the use of special priming paints made for use on highly absorptive surfaces such as plaster, cement, and wallboard. The pigments are carried in bodied oils or varnishes and seal surfaces well without penetrating into them excessively.**

**Stains**

Stains for exterior wood are basically paints very much diluted with linseed oil, a volatile thinner, and...
WHAT TO USE — WHERE AND WHY

Exterior Structural Material | Recommended Paint Material | Special Properties and Functions
--- | --- | ---
Swimming Pools | Exterior type chlorinated rubber based paints or paints based on vinyl or other synthetic resins made especially for swimming pools. | Mildew resistant, stands immersion in water, chemical resistant.
Iron and Steel | First coat on cleaned (and preferably phosphate-treated) metal. | Retards and prevents rusting and corrosion. Maximum durability.
A. Zinc yellow primer in alkyd resin vehicle. | Retards and prevents corrosion.
B. Oil-based zinc yellow primer. | Good durability, low sheen, short gloss retention.
C. On sand-blasted, flame cleaned, or wire-brushed rusted metal, first coat with red lead oil paint primer. | Better glass and color retention, good durability.
Top (finish coats) depending on end use may be: | Medium to good durability, relatively shorter gloss retention.
A. Oil-based house paint or maintenance paints. | Maximum durability, color retention, fade resistance, water resistance.
B. Trim colors, oil/alkyd resin vehicles. | This system is designed to give maximum durability.
C. Oleoresinous enamels. | All durable finishes, but only zinc dust paints will give good adhesion to metals in this group, without a phosphate pretreatment.
D. Alkyd resin exterior enamels. | Prevents tarnish.
Aluminum | Pretreat metal surface with phosphate metal treatment, and apply: | For clean finish, coat with spar varnish or exterior lacquer. | House paint where there is light foot traffic. Paint-and-deck enamel for harder wear.
A. Zinc yellow primer followed by house paint, trim color, or alkyd resin enamel, depending upon end-use. | Prevents tarnish.
B. After phosphate pretreatments, apply zinc yellow or red lead primer, followed by house paint, oil-alkyd trim color, or alkyd resin enamel, depending upon end-use. | More wear resistant.
Galvanized Iron, Zinc, or Cadmium | A. One or two coats zinc dust paint, alkyd resin or oil type. | For clean finish, coat with spar varnish or exterior lacquer.
B. After phosphate pretreatments, apply zinc yellow or red lead primer, followed by house paint, oil-alkyd trim color, or alkyd resin enamel, depending upon end-use. | Prevents tarnish.
Exterior wood steps, floors of open porches, and other outside surfaces that will be subjected to heavy traffic require paints that harden much more rapidly than house paints do. Paint for these high-traffic surfaces are made with varnish rather than oil vehicles, and this type of formulation wears down by the scraping of the traffic rather than by the slower action of the weather.

Masonry Paints

There are many protective coatings available for cast concrete, brick, stucco, asbestos-cement siding, unglazed tile, and lightweight aggregate block. These paints can be classed in four groups: highly pigmented oil paint, cement-water paint, synthetic resin-emulsion paint, and paint containing rubber in the vehicle. Under proper but varying conditions they all do a good job of protecting masonry from the inroads of weathering and provide relative degrees of water-proofing.

Metal Protective Paints

These are metal primers designed to form a good adhesive bond between the metal and the top coat. They are also formulated to retard, inhibit, and prevent rust corrosion. In composition and quality, they vary—from the general utility paint, pigmented with iron oxide and extender pigments dispersed in aspar varnish vehicle, to the highly durable zinc yellow primers in alkyd resin vehicles. Zinc yellow primers do an outstanding job. However, where there is not a thorough surface preparation including the removal of all rust, it is better to use a red lead-linseed oil type of primer.

Paints for Interior Work

Oil-type flat wall paints are made with an oil-varnish vehicle and prime pigments that have high hiding power. In addition, they contain extender pigments to build up the pigment volume so that a flat sheen is provided by the dry film. On these classes of paint—a word of caution. Flat wall paint business runs into large volume and is competitive. Most manufacturers market a “first line” quality flat wall paint under their own name. To meet acutely competitive conditions some manufacturers also market a “second line” quality product at a lower price. These products contain less oil in the vehicle and more low-cost resinous materials, such as limed rosin. Made with less hiding
WHAT TO USE - WHERE AND WHY

This table recommends suitable paint materials for most types of interior structural surfaces. The descriptions of special properties and functions will help to make the right choice in the light of requirements of the individual job.

<table>
<thead>
<tr>
<th>Interior Material</th>
<th>Recommended Paint Material</th>
<th>Special Properties and Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>A. Oil-type masonry paint.</td>
<td>Long durability.</td>
</tr>
<tr>
<td>Stone</td>
<td>B. Cement-water paint, primer followed</td>
<td>Moisture-resistant.</td>
</tr>
<tr>
<td>Concrete</td>
<td>by top coat.</td>
<td></td>
</tr>
<tr>
<td>Cinder</td>
<td>C. Chlorinated rubber masonry paint.</td>
<td>Alkali-resistant.</td>
</tr>
<tr>
<td>Brick</td>
<td>D. Rubber or polystyrene emulsion paint.</td>
<td>Water-resistant.</td>
</tr>
<tr>
<td>(In cellar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plaster</td>
<td>A. If virtually alkali free after treatment</td>
<td>Long-lasting, flax are semi-washable.</td>
</tr>
<tr>
<td></td>
<td>with neutralizer, apply first coat of</td>
<td>Gloss and semi-glass good vapor barriers,</td>
</tr>
<tr>
<td></td>
<td>plaster-primer, followed by oil-type flat,</td>
<td>semi-glass, or glass finish.</td>
</tr>
<tr>
<td></td>
<td>semi-glass, or glass finish.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Rubber or polystyrene emulsion paint.</td>
<td></td>
</tr>
<tr>
<td>Wallboard or Plasterboard</td>
<td>Special non-penetrating oil-type wall</td>
<td>Uniform sheen, durable.</td>
</tr>
<tr>
<td></td>
<td>board primer, followed by flat, semi-glass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or glass finish.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Oleoresinous emulsion paints and</td>
<td>Good washability, glass and color retention.</td>
</tr>
<tr>
<td></td>
<td>casserine paints.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Calcimines.</td>
<td>Good appearance, glass retention, long-</td>
</tr>
<tr>
<td>Fabric or</td>
<td>Oleoresinous emulsion or rubber latex</td>
<td>lasting, good adhesion, oil and grease resistant.</td>
</tr>
<tr>
<td>papered walls</td>
<td>based paints.</td>
<td></td>
</tr>
<tr>
<td>Woodwork</td>
<td>A. On bare wood apply one coat of</td>
<td>Good washability, glass and color retention.</td>
</tr>
<tr>
<td></td>
<td>enamel undercoat, followed by semi-glass or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>glass enamel, one or two coats.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. For clean finishing system, stain with</td>
<td>Good appearance, glass retention, long-</td>
</tr>
<tr>
<td></td>
<td>oil stain, if desired, or bleach for</td>
<td>lasting, good adhesion, oil and grease resistant.</td>
</tr>
<tr>
<td></td>
<td>blond finish. Apply varnish type low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>solids sealer-filler. Follow with one or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>two coats of interior varnish. (Do not use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>spar varnish.)</td>
<td></td>
</tr>
<tr>
<td>Metal Trim etc.</td>
<td>Metal primer, followed by any desired</td>
<td>Corrosion-resistant, durable.</td>
</tr>
<tr>
<td></td>
<td>oil type or emulsion finish.</td>
<td></td>
</tr>
<tr>
<td>Floors, wood</td>
<td>A. Stain with oil stain if desired, and</td>
<td>Hard, tough, wear-resistant and finish system.</td>
</tr>
<tr>
<td></td>
<td>apply first coat of varnish type</td>
<td>High strength, washable, washable, washable,</td>
</tr>
<tr>
<td></td>
<td>sealer-filler, or a coat of two pounds</td>
<td>wear-resistant, resistant, weather resistant.</td>
</tr>
<tr>
<td></td>
<td>shell varnish. Follow with two coats of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>floor varnish. Wax, if desired.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. For dull finish, use penetrating oil-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wax clear, or stain.</td>
<td></td>
</tr>
<tr>
<td>Linoleum</td>
<td>Use linoleum lacquer. Do not use varnish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>because of discoloration.</td>
<td></td>
</tr>
<tr>
<td>Asphalt Tile</td>
<td>Wax only, Solvents in paint or varnish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>would be harmful to asphalt tile.</td>
<td></td>
</tr>
<tr>
<td>Concrete</td>
<td>If alkali is present, paint with chlorine-</td>
<td>Abrasion and wear resistant.</td>
</tr>
<tr>
<td></td>
<td>rain ed rubber floor paint.</td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>Use special clear synthetic resin finishes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>designed specifically to give frosted effect.</td>
<td></td>
</tr>
</tbody>
</table>

Oil-type flat wall paints, as well as oil-type house paints, are marketed in both ready-mixed and paste form, and some new types for interior use are practically odorless. The paint product is usually sold to painters who then add oil and thinners to the paint. They end up with a ready-to-apply product which is comparable to the ready-mixed paint in composition. By this procedure certain economies to the painter are supposedly achieved.

Semi-sheen and gloss finish paints are also used for wood trim in general and for walls and ceilings where good washability is important and moderately or highly glossy surfaces are customary. These too, are enamel types, made with a varnish vehicle, normally applied in two coats after the wood has been primed. Highly glossy finishes accentuate any defects or irregularities in the wood surface unless the wood has been carefully smoothed and finished.

RUBBER-BASED PAINTS

Marketed in ever-increasing volume for interior work are the satin-sheen type of rubber-base wall paints which dry quickly to a film that has many characteristics of rubber itself. Most of the particles in the paint are too large to strike into the surface, but coalesce into a solid film, even over porous surfaces. Pioneered on the market in 1949 these latex paints were developed with the needs of the amateur painter and decorator in mind and are very easy to use. They are odorless and contain neither drying oils, turpentine nor similar paint thinner. The thinner in the can is water.

VARNISHES

Varnish is not just varnish—to be put on everywhere or anywhere. The so-called all-purpose varnishes are at best compromises. Their performance on any given surface can always be excelled by the use of a varnish designed especially for that job.

A spar varnish is one of high oil and low resin content. It is designed to be flexible, water resistant, and weather resistant. Its particular function is to give maximum protection to surfaces subject to ex-
terior exposure on which a clear coating is wanted. A spar varnish is the wrong type of finish to use indoors. On interior woodwork it will be too soft and on warm humid days may get tacky. On floors, it is not tough enough to give satisfactory wear. On furniture, it would soften under body heat.

An interior varnish has less oil and more resin content than a spar. It is designed for woodwork, but is not hard and tough enough for floors or furniture. If used outside, it would be less durable than spar.

A floor varnish is still higher in resin content than interior varnishes. It contains enough oil to give it sufficient flexibility so that it can stand the bumping of hard hitting heels and furniture moving. Its higher resin content gives it the extra toughness needed to withstand the wear and abrasion from heavy foot traffic.

A rubbing varnish, a bar varnish, and furniture varnishes are of still higher resin content. They have a high gloss which may be rubbed with pumice and oil to any desired lower lustre. If they are to be used on table tops or bars, they are made with the type of resins which are alcohol resistant.

Flat varnishes are available in any of the above types. The difference is that they contain stearates or silicates, or other ingredients which cause them to dry to a lower than normal gloss.

Shellac varnishes are solutions of shellac in alcohol and are classified according to composition and color. The solvent generally used in their manufacture is denatured alcohol. They produce a pleasing finish, with a dull lustre, and can be applied easily and dry rapidly. However, they turn white from contact with water and are easily injured.

**Waterproofing**

The common problem of damp basements has naturally brought into the market a great variety of paint products and others which claim to have "waterproofing" qualities when applied to masonry walls. In approaching this whole problem of waterproof coatings it must be clearly understood that no such coating is of itself a cure-all. Improper drainage of the site, poor workmanship, and defective construction in the building itself can nullify any type of waterproofing.

The so-called waterproof coatings include the four types of masonry paints, described above; colorless surface waterproofings, some of which have a silicone base, some...
containing chlorinated rubber in solution with benzol or naphtha, and still others being a water emulsion of waxes; cementitious coatings and proprietary materials (Portland cement and sand, iron dust and sal ammonia, etc.); hot bituminous coatings (asphalt, coal tar, asphalt roof coating, asphalt emulsion, bituminous plastic cement) used on outside walls below grade and also often used on the inside faces of masonry walls.

... installing tile with adhesives

Note: Either of the two methods described below—buttering or floating—may be used at contractor's discretion for wall tile. Floor tile must be floated.

1. Buttering Method—Wall Tile

Place on back of each tile one or more daubs of adhesive of such quantity that the adhesive, when compressed, will cover 70° to 80° of the back of each tile, approximately 1/16" thick.

2. Floating Method—Wall Tile

a. Spread adhesive, using a saw tooth trowel having notches approximately 1/4" by 1/4" and 3/4" apart, covering surface evenly with a thin layer of adhesive and leaving no bare spots. Coverage shall not be more than 50 square feet per gallon of adhesive.

b. Press each tile firmly into wet adhesive within one hour after adhesive is spread, using slight twisting motion. Do not slide into place as adhesive will build up on tile edge and squeeze through joint, making satisfactory grouting difficult. Maintain horizontal and vertical joints plumb, true and even and of specified width.

3. Floating Method—Floor Tile

a. In areas where fitting is required, fit tile sheets before applying adhesive.

b. Spread Floating Type MIRACLE ADHESIVE on surface to be tiled, using a 4" saw toothed trowel held at a 45 degree angle, covering surface evenly with a thin layer of adhesive and leaving no bare spots. Do not cover in one application a larger area than that to which tile can be applied in 1/2 hour.

c. Press tile sheets firmly into wet adhesive with a slight sliding motion, and align carefully with adjacent sheets. Do not slide sheets for any great distance, as adhesive will build up on edges of tile, making satisfactory grouting difficult.

d. Not later than one hour after setting tile (and earlier, if surface being tiled is absorptive), remove paper backing by wetting and align individual tiles if required.

e. When through delays or other causes, the adhesive films over or dries before tile can be applied, scrape off dried adhesive and butter the back of the tile lightly with fresh adhesive. Do not leave any area coated with adhesive, which cannot be tiled the day of application. Apply fresh adhesive as specified when work is resumed.

f. Clean off any excess adhesive from face of tile with an approved solvent when adhesive is wet, or cut it off with a sharp knife when dry.

g. Apply approved grout and cure in accordance with manufacturer's instructions.

HOW TO APPLY AN OIL PAINT TO WALLS AND CEILING

Use a 3½- or 4-inch brush. Finish ceiling first. Complete a 3-foot strip across the ceiling, doing the final brushing in the same direction on each section. Finish another 3-foot strip, and so on, until ceiling is completed. On sidewalls, start at ceiling and work down in about 3-foot square sections, cross-brushing horizontally and finishing with vertical brush strokes toward the ceiling. Completely finish a 3-foot strip from ceiling to baseboards.

HOW TO REMOVE WALLPAPER

Soak the paper thoroughly with warm water, using a large sponge and plenty of water. Use a putty knife to lift off wallpaper. Remove all traces of paste on wall by washing with a solution of 1 to 2 tablespoonsful of paint cleaner in a gallon of warm water.

ADHESIVES

"Construction by adhesion" is a phrase appearing more and more frequently in trade literature as special adhesives are developed to handle a wide range of fastening functions in modern building practice.

Generally speaking, adhesives may be of two types: buttering, or floating. Adhesives designed for the buttering method are frequently of a medium or heavy dough consistency. Those applied by the floating method are usually thinner, or a medium to light dough or light butter viscosity.

Applications of adhesive are almost without number. Surfaces ranging from brick, concrete, glass, marble, and metal to plaster, wood, plywood, wallboard, stone, terrazzo and slate may have bonded to them nearly every type of building material.

Building papers are bonded to sheathing and foundations. Ceramic and metal tile are bonded to wall surfaces. Plank and ceiling tile are bonded to all types of wall or ceiling surfaces. Rubber and asphalt tile, linoleum, and plastic materials are bonded to floors, walls, counter tops, and other surfaces.

The scope of adhesives is increased by the use of numerous types of metal fasteners, usually consisting of nails or studs anchored to a flat base plate. In use, the base plate is bonded to the tile or other material being applied after the stud or nail has been driven into the supporting material.

Most manufacturers of ceramic tile, rubber tile, asphalt tile, and other surfacing materials either produce suitable mastics or adhesives or recommend specific types of adhesive which are found suitable for specific applications of their products. The entire field of adhesives is so complex, and the results obtained from one adhesive in a given situation will vary so greatly from those obtained from using another, that extreme care must be taken to follow manufacturers' recommendations together with instructions furnished with the adhesive material itself.

HOW TO PATCH PLASTER

To fill large cracks, undercut as shown in drawing, and fill with a suitable compound. Sand smooth and prime with a sealer or with thin shellac.

DO'S AND DON'T'S WHEN FINISHING WOODWORK AND FLOORS

DO—allow plenty of time for coats to dry.
DO—paint when weather will permit opening window to allow ample ventilation.
DO—remove all hardware before you start to paint. You'll get a better job and save time.
DO—be careful when painting high places. Use a sturdy ladder and be sure the paint can is set on a steady surface.
DON'T—paint over grease, oil, or wax. Remove with turpentine.
DON'T—paint or varnish over a glossy surface. Rub it down with sandpaper.
DON'T—pile on heavy coats of paint or varnish. Two thin coats will always be better than one thick coat.
DON'T—fail to putty up all cracks, crevices and nail holes after the first coat is dry.
DON'T—fail to stir the paint thoroughly. Half-heated stirring results in poor hiding, lack of uniformity in the finish coat, differences in degree of gloss, etc.
DON'T—leave paint or varnish uncovered when through for the day. Cover tightly to prevent skin from forming on the top. If skin has formed, don't mix it in. Carefully remove the skin before stirring.
control systems

It is fully as important to have a good control system as to have a good heating system, for without it the heating system will not function at maximum efficiency. The following control set-ups are basic and will be used depending on the heating system selected and the degree of automatic control desired:

**Hand-fired coal, gravity warm air.** A room thermostat governs operation of damper motor, which is connected to both draft and check doors on furnace or boiler by a chain arrangement. Limit control closes draft door and opens check door if the furnace overheats.

**Hand-fired coal, forced circulation.** This system has a thermostat, damper motor, transformer, limit control, and, in addition, a relay to start and stop blower motor or booster pump motor. There is also a reverse-acting control in the voltage power circuit for starting the booster pump or fan motor in case the room thermostat is not calling for heat. This takes care of any override in temperature within the heating unit itself so that no injury will result from overheating.

**Stoker-fired coal, gravity circulation.** Almost identical to system No. 1 above, these controls differ in the use of a timer relay rather than a damper motor and transformer. The relay provides for regular minimum feeding of coal to maintain the fire in the heating unit during the long intervals when room thermostat does not call for heat.

**Stoker-fired coal with forced circulation.** These controls are the same as system No. 2, except that a timer relay is used in place of damper motor and transformer. In some hook-ups a stack control is used instead of relay for the hold-fire. This, however, has a tendency to corrode and deteriorate. Timer relay is preferred.

**Oil-fired forced warm air.** This is similar to oil-fired gravity circulation, with the exception of a limit control. Instead, a combination fan and safety switch is installed. This starts the fan motor when the bonnet of the furnace has sufficient heat. It will also stop the oil burner in case of excessive bonnet temperature. This hook-up delays the starting fan until heat is built up, thus warming instead of cooling rooms when the unit starts up.

**Stoker-fired gravity circulation.** This system is identical with hand-fired and stoker-fired coal hook-ups except that the protecto-relay replaces timer relay or damper motor. This protecto-relay is for the intermittent burner ignition, probably the most essential control in any oil burner installation.
**Oil-Fired Gravity Circulation**

It stops the burner if there is a stoppage in oil flow, and also stops ignition motor if ignition fails.

**Oil-fired Forced Hot Water**

Oil-fired forced hot water. When the room thermostats call for heat, the relay closes the power circuit and starts the booster motor. This also energizes the protecto-relay, which starts the oil burner. The aquastat will stop the oil burner if water temperature becomes too great, while the booster pump will continue to run until the room thermostat is satisfied.

**Gas-fired Gravity Circulation**

The line voltage power circuit is reduced in voltage for operation of a solenoid gas valve installed in the gas supply pipe. The valve operates from a low-voltage thermostat, through the limit control, which prevents overheating of the unit.

**Gas-fired Forced Warm Air**

Gas-fired forced warm air is similar to the gas-fired warm air system except that an aquastat is used in place of combination fan and safety switch. Booster pump operates directly off room thermostat, runs as long as it calls for heat. The aquastat is strictly limit control.

**Stoker-fired Steam System with Year Round Domestic Hot Water**

Stoker-fired steam system with year-round domestic hot water. This has the same controls as for stoker-fired steam with gravity circulation, except that a single-pole, single-throw relay is used instead of a timer relay. An immersion aquastat connected in parallel with the thermostat causes the stoker to run enough to maintain heat within the unit and heat domestic water. This also acts as a hold-fire control.

April 1953

Automatic Incinor gives you full profit—no trade-ins.

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Act now for complete details.
National Log Structures
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Here is the labor-saving material to meet the popular demand for rustic type homes and commercial buildings.

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CHALKING PROCESS ON A WHITE SURFACE

The sun's rays and weathering destroy the oil in the top glossy layer. The pigment particles become loosened, rolling up accumulated dirt as they do so and are washed off by the rains, exposing the second coat to the same process. This is "chalking," and in a good house paint the process is chemically controlled to (1) keep the house clean and bright in appearance, (2) prevent the paint coating from becoming unduly thick with repainting, and (3) to relieve certain stresses and strains which occur within the coatings and cause checking and cracking. The normal 3-coat job in the United States is durable for about 5 years, but the chalking process will go faster in southern Florida, for instance, where there is more sunshine and more rain, than in northern Maine, where there is not so much sunlight. In very dry sections, like New Mexico, the erosion by chalking is slowed down.
BELT DRIVE FAN INSTALLATIONS

Basement
If basement windows are large enough to provide ample exhaust, this location is sometimes preferred. Enclose stairwell and locate fan under stairs (removing risers) or on one side.

Gable Installation
When the attic is finished, making it airtight, the fan is often installed behind a manual shutter or metal louver in the gable. Entire attic serves as a suction box for opening in attic floor.

Attic Stairway
Fan is connected with an enclosed portion of the stairwell. No ceiling grille is required, attic door is opened when fan is operating. Valuable attic floor space is saved.

Suction Box
Because many attics are not sealed, it is necessary to use an airtight suction box over a centrally located ceiling grille to assure the full effect of the fan in the rooms below.

Vertical Discharge
All Hunter belted units can operate in a horizontal position, discharging vertically. This solves installation problems in many modern homes having limited attic clearances.

Attic Wall
In homes where main portion of attic space is finished, unit may be mounted in partition wall, discharging into unfinished attic space. Fan is installed in the shipping crate.

PRESSURE OF ATMOSPHERE FOR VARIOUS READINGS OF BAROMETER

<table>
<thead>
<tr>
<th>Barometer</th>
<th>Pounds per Inch</th>
<th>Barometer</th>
<th>Pounds per Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.00</td>
<td>13.75</td>
<td>29.75</td>
<td>14.61</td>
</tr>
<tr>
<td>28.25</td>
<td>13.87</td>
<td>30.00</td>
<td>14.73</td>
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<td>28.50</td>
<td>13.99</td>
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<td>28.75</td>
<td>14.12</td>
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<td>29.00</td>
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<td>29.25</td>
<td>14.36</td>
<td>31.00</td>
<td>15.22</td>
</tr>
<tr>
<td>29.50</td>
<td>14.48</td>
<td>31.25</td>
<td>15.34</td>
</tr>
</tbody>
</table>

BAMBOOFOOLD

NEEDS LESS SPACE THAN A DOOR!
IS MORE DECORATIVE THAN A DOOR!

BAMBOOFOOLD is the answer to difficult door problems. It encloses, provides privacy for dining and cooking areas... is ideally suited for walk-in closets. BAMBOOFOOLD permits circulation of air—preventing mold, odors, warpage and moths. Now being used by leading builders throughout the country.

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AMERICAN BAMBOO CORP.
General Office: 171-06 Jamaica Ave.
Jamaica 3, N. Y.
Republic 9-1062-3
Plants: Jamaica, N. Y.—Tullytown, Pa.

APRIL 1953

465
#### Types and Styles of Metal Trim

8 BASIC GROUPS • Metal trims are divided into eight groups shown on this page. Each group includes several different styles of trims for the same general purpose. For example, nosings include those with flanges that extend under the coverings; those with a flange which fits into a groove; and those without flanges. Also, many Chromedge sections are not limited to a single use. For example, No. 102, a nosing listed as an INSERT TRIM, is also used as a cap trim. These trims are classified as to their most frequent use. (Insert trims are grouped separately).

CAP TRIMS • For upper edges of dado, wainscot, or cove-base. Those with a projecting lip at upper edge in back can be used also as nosings.

WALL TRIMS • or divider bars—conceal joints between panels of either like or contrasting coverings, used for decorative paneling.

INSERT TRIMS • Shown separately because of colorful inserts this group includes nosings, wainscot caps, corners and coves.

COLOR RECESS TRIMS • This group of nosings features painted recesses for decorative beauty.

PRICE TAG TRIMS • A separate group of nosings for specialized use. Available for all standard price tickets held by grooves in moldings.

CORNERS AND COVES • Inside and outside corners, horizontal or vertical. Many have matching end stops and corner fittings.

EDGINGS AND BINDERS • These trims bind, seal or protect edges of coverings where exposed to wear, stress or moisture. Includes sink-well edgings, carpet-bindings, threshold saddles and similar sections.

NOSINGS • For outer edges of bars, counters, cabinets, tables, sink tops, drain boards, stair treads and similar points. Nosings with flat backs serve also as wall trims. Those with a raised lip provide non-drip counter edges.

---

**Belson's superior hand wrought columns are available in two convenient stock heights 76, 80; each height is adjustable 6 by cutting upright posts to receive anchor plates. For heights exceeding 80, custom-built columns are readily fabricated. Single panel flat or double panel 90 corner columns are available in all designs.**

**STANDARD SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Upright posts 1 square Width 11 over all Scroll panels 1/4 x 1/4</th>
<th>Finish: rust inhibitor primer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP22</td>
<td></td>
</tr>
</tbody>
</table>

**Free Prompt Estimates**

Wrought Iron Columns  Gates -Write for Complete Catalog-

**Belson Manufacturing Company**

Home Ave. and Butterfield Rd. Aurora & Whiting

SEND YOUR PLANS TODAY

---

**More than six times as many men of your age will die of lung cancer this year as died in 1933. Our research scientists still don’t know why. The do know, however, that over half of those who will develop lung cancer can be saved...if they get proper treatment while the disease is still in the silent, symptomless stage. That’s why we urge you to have a chest X-ray every six months no matter how well you may feel.**

For more information call us or write to "Cancer", care of your local Post Office.
THE COMPLETE...COMPACT TYPEWRITER
FOR PROFESSIONAL AND SMALL BUSINESS USE

Here it is—a typewriter that's just right for the professional or small business office. And its low price is just right too! The new Remington Office-riter has every needed, practical typing feature for general correspondence, invoicing, carbon copies and stencil cutting. Accurate columnar typing is easy with the exclusive Miracle Tab that sets and clears tabulator stops from the keyboard with a flick of the finger.

The fast, responsive action and crystal clear printwork that are the hallmarks of a fine office typewriter are yours with the Office-riter. So, if you have been thinking of getting a new typewriter for your office—and if you want to make a substantial saving — get complete information today from your dealer...and be sure to ask him about convenient terms.

STANDARD 11-INCH CARRIAGE WITH A FULL 10\(\frac{3}{10}\)-INCH WRITING LINE

The Office-riter's 11-inch paper capacity is large enough for all general office typing, and the writing line is the longest of any 11-inch carriage machine now manufactured. The Office-riter easily takes paper, carbon packs or forms up to 11 inches wide.

Plus all these other office typewriter features:

- Exclusive Miracle Tab
- New direct-set visible margins
- Standard keyboard with 42 keys, 84 characters
- Pat. simplified ribbon changer
- Super-strength frame construction

A PRODUCT OF Remington Rand

APRIL 1953
SAVE MONEY MR. BUILDER
WITH NO CUT IN QUALITY

Use
USF
Standard
WINDOW WELLS

REINFORCING
SAFETY BEAD

WIDE
MOUNTING
FLANGES

STRAIGHTLINE
CORRUGATED

A REAL ECONOMIZER

Here's a round type window well that features sturdy, streamline corrugated 16 gauge steel construction, full commercial weight bright galvanized coating, and a sturdy reinforcing safety bead for strength across the top.

Its cost is low, yet it offers plenty of lasting quality. ASK for USF Standard Window Wells.

FOR YOUR BEST JOBS

USF's top quality Window Well is the Custom grade, available in both the straight or round type in a full range of sizes. They offer an extra bright, full 2 oz. galvanizing coating, super-sturdy extra-deep corrugations on 16 gauge copper steel, and are reinforced with a full-round safety bead across the top.

SEE YOUR BUILDING MATERIAL DEALER

PRODUCTS
Hollow Metal Doors and Frames
Prefabricated Metal Buildings
Corrugated Metal Window Wells
Highway Guard Rail Structural Plate Bridge Flooring Corrugated Metal Pipe

UNITED STEEL FABRICATORS, INC.
WOOSTER, OHIO

when there's more than one floor...

Save hours of Figuring
with the RADER WOOD JOIST
and RAFTER SELECTOR

Given any four of the five factors—span, load, stress, spacing and joist size—the fifth can quickly and accurately be determined by simply sliding the scales in accordance with the known factors and the pre-calculated answer is at your finger tips. The Selector is of plastic, comes in a leathertette case with instructions. Satisfaction guaranteed or your money back in thirty days. Write today...

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BOX 372 BOWLING GREEN STATION, NEW YORK 4, N. Y.

Everett Rader Company
Box 372 Bowling Green Station, New York 4, N. Y.
Gentlemen: enclosed please find $ for Check Money Order for
2 Selectors and $2.50 each, postpaid in U.S.A. Mail money
back if return the Selector within 30 days. (No C.O.D. please.)
Company Name
Individual's Name
Address
City Zone State

AMERICAN BUILDER
how to install aluminum shade screening

1. Cut Shade Screening 1" to 1½" larger than inside frame width so fabric overlaps rails of frames ½" to ¾" on all four sides. Use ordinary shears or tin snips.

2. Lay Shade Screening on frame following directions on selvage so louvers slant down and out. Place a piece of wood or metal, the same thickness as the frame, on work table to keep loose screening from sagging. Line up verticals with sides of frame.

3. Staple. Use ordinary ½" staples, galvanized preferred. Stapling machine pictured simplifies operation. Smaller staples should be used, staple every vertical. Do top rail across first, then pull screening taut (there is no stretch to Shade Screening) and apply staples on bottom rail as on top rail.

4. Trim off excess that will not be covered by moulding on top and bottom. Any reasonably sharp knife will do. A linoleum knife is easiest. Start in the center and cut out toward the sides.

5. Apply moulding. Use ½" to 1" aluminum or galvanized brads if obtainable. These brads on the side rails should be through screening and will be all that is necessary to hold screening on the sides.

Use process for re-wiring old screen frames

LOW COST GLIDE-ALL Sliding Doors

Beautiful ... Modern ... Smooth, Easy Operation...

Architects and builders who know the "buy appeal" modern sliding doors add to any building, will recognize the extra sales value of the new top-roller Glide-All Sliding Doors.

Buyers appreciate the modern beauty, the smooth, fingertip operation and the simple, trouble-free design. Architects and builders benefit by the low installation cost, the versatile floor-to-ceiling heights, the unlimited decorative possibilities and the actual dollars-and-cents savings in material and construction costs.

Why not find out how new Glide-All Sliding Doors meet the budget requirements of your next job? Write for the new Glide-All Technical Bulletin Today!

Glide-All Sliding Doors are a product of WOODALL INDUSTRIES INC.
DETROIT 34, MICHIGAN

and are manufactured in the following Plants:
CHICAGO, 3504 Oakton St., Skokie, III. • LAUREL, Miss., P. O. Box 673 • NEW YORK, Glen Cove Rd., Mineola, N. Y. • SAN FRANCISCO, 1970 Carroll Ave.
Address requests to plant nearest you.
Now!
The wall covering that closes sales!

Yes! ... Here's a striking new wall beauty that carries your sales story straight to Milady's heart — where home sales are closed! FAB-RIK-O-NA fabric wall coverings stamp your whole house with the mark of quality and luxury. Beautifully textured fabric ... in warm, vibrant tones that fit any scheme of decoration, modern or traditional. Goes on like wallpaper ... stays on and wears like armor plate! FAB-RIK-O-NA Burlap — for a rugged, homespun air ... or Amer spun, a finer, more subtle weave.

fab-ri-k-on-a
FABRIC WALL COVERINGS

Send for booklet with samples.

H. B. WIGGIN'S SONS CO.
Makers of Fine Fabric Wall Coverings Since 1894
56 Arch St., Bloomfield, N. J.

In the same space, a large number of possible arrangements of appliances and cabinets with built-ins and other fixtures are possible, as is illustrated here with but a few of the possible combinations. Whether the kitchen is used more for cooking, for eating and lounging, for laundry and utility activities, will determine its best layout. The laundry layouts shown below also represent only a few of the many possibilities offered today with the host of modern appliances, special purpose cabinet units and other built-ins available to the builder.

kitchen - dining combinations ...

kitchen - laundry layouts ...

Send for booklet with samples.

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H. B. WIGGIN'S SONS CO.
Makers of Fine Fabric Wall Coverings Since 1894
56 Arch St., Bloomfield, N. J.
Mr. Builder: Here's a concise, handy reference of appliances for house merchandising. There's a model and size for every home. Check space requirement charts.

WESTINGHOUSE REFRIGERATORS

Designed with the home builder in mind, these refrigerators come in three standard widths of 24", 28" and 32". Eliminate fractional dimensions in your planning. Flush-type hinges available on certain 24" models where door swing must be held to a minimum. Choice of right or left-hand door opening on all models. Every model has a big, full-width Freezer that women prefer, and striking arctic blue interior trim. Most models have an 18-lb. Meat Keeper. All have the famed Economizer Mechanism with proved 24-year record of low-cost operation and maintenance.

WESTINGHOUSE HOME FREEZERS

Today's leading builders are keeping pace with homemaking trends by providing space for home freezers in their new homes. Westinghouse Home Freezers are ideal for kitchen installation because of their upright design. There's no waste of floor space, wall space, or sacrifice of cabinet arrangement. Available in 8.5, 12, and 18 cu. ft. sizes with either left or right-hand doors.

REFRIGERATOR SPACE REQUIREMENTS

(All models available with either left or right-hand door opening)

<table>
<thead>
<tr>
<th>Model</th>
<th>Height</th>
<th>Width</th>
<th>Depth Including Hardware</th>
<th>Depth Door Fully Open</th>
<th>Width 75° Door Opening</th>
<th>Shelf Area Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFE-114</td>
<td>65½”</td>
<td>32”</td>
<td>20½” 29¾” 56¼”</td>
<td>34½”</td>
<td>19.0</td>
<td></td>
</tr>
<tr>
<td>DFE-12</td>
<td>65½”</td>
<td>32”</td>
<td>28½” 28½” 56¼”</td>
<td>34½”</td>
<td>20.4</td>
<td></td>
</tr>
<tr>
<td>DFE-10</td>
<td>57½”</td>
<td>28”</td>
<td>25½” 25½” 52½”</td>
<td>30½”</td>
<td>14.4</td>
<td></td>
</tr>
<tr>
<td>DFE-8</td>
<td>57½”</td>
<td>28”</td>
<td>24½” 24½” 52½”</td>
<td>30½”</td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td>DFE-75</td>
<td>57½”</td>
<td>28”</td>
<td>24½” 24½” 48½”</td>
<td>26½”</td>
<td>16.1</td>
<td></td>
</tr>
<tr>
<td>DE-8</td>
<td>57½”</td>
<td>28”</td>
<td>24½” 24½” 50½”</td>
<td>24½”</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>SE-8</td>
<td>57½”</td>
<td>28”</td>
<td>24½” 24½” 50½”</td>
<td>24½”</td>
<td>16.1</td>
<td></td>
</tr>
<tr>
<td>HE-8</td>
<td>57½”</td>
<td>28”</td>
<td>24½” 24½” 50½”</td>
<td>24½”</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>HE-6</td>
<td>50½”</td>
<td>24½”</td>
<td>28½” 28½” 50½”</td>
<td>24½”</td>
<td>11.8</td>
<td></td>
</tr>
</tbody>
</table>

HOME FREEZER

<table>
<thead>
<tr>
<th>Model</th>
<th>Height</th>
<th>Width</th>
<th>Depth Including Hardware</th>
<th>Depth Door Fully Open</th>
<th>Width 75° Door Opening</th>
<th>Shelf Area Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UFE-180</td>
<td>67½”</td>
<td>36”</td>
<td>31¼” 31¼” 62½”</td>
<td>38½”</td>
<td>18.6</td>
<td></td>
</tr>
<tr>
<td>UFE-120</td>
<td>65½”</td>
<td>32”</td>
<td>29¼” 29¼” 56½”</td>
<td>35½”</td>
<td>13.7</td>
<td></td>
</tr>
<tr>
<td>UFE-85</td>
<td>57½”</td>
<td>28”</td>
<td>29¼” 29¼” 52½”</td>
<td>31½”</td>
<td>11.4</td>
<td></td>
</tr>
</tbody>
</table>

HOME FREEZERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Height</th>
<th>Width</th>
<th>Depth Including Hardware</th>
<th>Depth Door Fully Open</th>
<th>Width 75° Door Opening</th>
<th>Shelf Area Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UFE-180</td>
<td>68”</td>
<td>36”</td>
<td>31½” 31½” 62½”</td>
<td>38½”</td>
<td>18.6</td>
<td></td>
</tr>
<tr>
<td>UFE-120</td>
<td>65½”</td>
<td>32”</td>
<td>29½” 29½” 56½”</td>
<td>35½”</td>
<td>13.7</td>
<td></td>
</tr>
<tr>
<td>UFE-85</td>
<td>57½”</td>
<td>28”</td>
<td>29½” 29½” 52½”</td>
<td>31½”</td>
<td>11.4</td>
<td></td>
</tr>
</tbody>
</table>

*Trade Mark: U.S. Patent Issued, Nos. 2,459,173 and 2,524,309
WESTINGHOUSE ELECTRIC DISHWASHERS

Here for the first time, is a dishwasher that is styled to look like an appliance, one that stands out in a kitchen and adds beauty. The front-opening, top-loading design offers many advantages. The top is a full-time, unbroken work surface. Shelves or cupboards can be installed over it at standard height. Has greater washing capacity than any other dishwasher, yet is only 24" wide.

Available in four models: the 48" Dishwasher-Sink and 24" Under-Counter Model (both illustrated); the 24" free-standing Cabinet Model, with porcelain enamel top; and a 24" Portable Model. All have completely automatic pre-rinse, wash, double-rinse and drying cycles.

Dishwasher connects to the sink drain line by means of a special "Y" tail-pipe. This eliminates need for separate drain line and trap. Operates on 110-120 volts, a-c.

**DISHWASHER SPACE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Width</th>
<th>Height</th>
<th>Depth Including Hardware</th>
<th>Depth With Drawer Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under-Counter, DW B-13</td>
<td>24&quot;</td>
<td>34 1/2&quot;</td>
<td>26 1/2&quot;</td>
<td>42 1/2&quot;</td>
</tr>
<tr>
<td>Cabinet, DW B-24</td>
<td>24&quot;</td>
<td>36 1/8&quot;</td>
<td>26 1/2&quot;</td>
<td>42 1/2&quot;</td>
</tr>
<tr>
<td>Portable, DW-24P</td>
<td>24&quot;</td>
<td>36 1/8&quot;</td>
<td>26 1/2&quot;</td>
<td>42 1/2&quot;</td>
</tr>
<tr>
<td>Dishwasher-Sink, DW B-480SC**</td>
<td>48&quot;</td>
<td>36 1/8&quot;</td>
<td>26 1/2&quot;</td>
<td>42 1/2&quot;</td>
</tr>
</tbody>
</table>

* Add 4" for backsplasher
** Also available less top. Order Model DWB-4850.

WESTINGHOUSE WASTE-AWAY® FOOD WASTE DISPOSER

An appliance that adds "buy appeal" far in excess of actual cost. A Waste-Away shreds food waste, even bones, and flushes it away, down the sink drain line in seconds. Performs equally well when connected to city drain lines or with septic tanks. Eliminates need for garbage can, garbage chute, or garbage incinerator.

Easily and quickly installed in cast iron, formed metal or enameled sheet steel sinks with 3 1/4" to 5 1/2" drain openings. Requires only 8 1/4" between bottom of sink bowl and center line of drain line in wall for drain connections. Pugged opening in upper housing permits Westinghouse Dishwasher to drain through Waste-Away. Operates on 110 volts, a-c.

**WESTINGHOUSE LAUNDRY EQUIPMENT**

It's amazing how prospects "go" for houses equipped with Westinghouse Automatic Laundries. In city after city, this has proven true. People like the convenience these famous appliances provide, especially when the house is small and washing and drying facilities are limited. You can provide a complete laundry in only 5 ft. 3 in. of floor space, regardless of models selected.

**LB-6 LAUNDROMAT**

Automatically washes, triple-rinses and damps-dries clothes, eliminating need for stationary laundry tubs. Does not require bolting down and can be installed in basement, kitchen or utility room. Features the popular Weigh-to-Save Door and Water Saver. Its thorough, yet gentle Agi-Tumble washing action cleans dirtiest work clothes, yet is safe for the new miracle fabrics. Operates on 115 volts, a-c. This Laundromat and the Clothes Dryer make an identical "Twin" installation to produce compact laundering facilities.

**RL-1 LAUNDROMAT**

The bolt-down, economy version of the LB-6 operates in exactly the same manner and does the same fine job. Does not have the Weigh-to-Save Door and Water Saver. Operates on 115 volts, a-c.

**D-6 CLOTHES DRYER**

A Westinghouse Clothes Dryer eliminates need for an extensive drying area. It electrically dries clothes completely or to desired dampness for ironing. May be installed in basement, kitchen or utility room. Features handy-loading shelf door and Singing Signal which sounds when clothes are dry. Can be conveniently and economically vented outdoors from right side or back of the appliance. Dryer can be quickly converted from 115/230 volt to 115-volt, a-c operation.

**LAUNDROMAT AND CLOTHES DRYER SPACE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Width</th>
<th>Height</th>
<th>Depth</th>
<th>Depth With Door Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB-6</td>
<td>31 1/2&quot;</td>
<td>36 1/2&quot;</td>
<td>27 1/2&quot;</td>
<td>43&quot;</td>
</tr>
<tr>
<td>RL-1</td>
<td>27 5/8&quot;</td>
<td>35 5/8&quot;</td>
<td>23 3/4&quot;</td>
<td>36 1/2&quot;</td>
</tr>
<tr>
<td>D-6</td>
<td>31 1/2&quot;</td>
<td>36 1/2&quot;</td>
<td>27 1/4&quot;</td>
<td>42 1/8&quot;</td>
</tr>
</tbody>
</table>

*Removal of plastic filler pipe cover permits installation under standard height counters.
** Allow a minimum of 3" from back of appliance to wall for plumbing connections.
LB-6 Laundromat can be flush mounted by use of a special bracket available as an accessory.
WESTINGHOUSE SPEED-ELECTRIC RANGES

The impressive list of features that were first introduced by Westinghouse in the electric range industry have made these ranges hot promotional items for builders. To mention a few: FIRST with the Super Corox Unit, a surface unit that gets hot instantly, red hot in 30 seconds; FIRST with a Miracle Sealed Oven that assures perfect baking results in any rack position; FIRST with the exclusive Automatic Corox with Electronic Eye . . . the world’s first completely automatic surface unit.

The new 1953 Westinghouse Speed-Electric Ranges are beautifully styled and available in models and sizes for every need. All are simple to install, requiring only the usual 230-volt, a-c range circuit.

COMMANDER MODEL AD-774
This deluxe, double-oven range has the exclusive Automatic Corox Unit with Electronic Eye . . . so positive in temperature control that even if the pan boils dry, FOODS CAN'T BURN. Also has the Super Corox Unit that gets RED HOT in 30 seconds . . . Plug-in surface units to speed cleanup . . . a Giant Miracle Sealed Oven that bakes perfectly in any rack position . . . a second sealed Oven for extra baking or roasting capacity . . . beautiful Color-Glance Controls, plus a Two-Level Speed Cooker for fast French frying . . . Built-in Oven Timer and two large aluminum storage drawers on nylon rollers.

COMMANDER MODEL BD-74
This big, new range has the sensational Super Corox Unit, Giant Miracle Sealed Oven, Two-Level Speed Cooker for fast French frying, Color-Glance Controls, Built-in Clock and Automatic Oven Timer.

RANGE SPACE REQUIREMENTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Width</th>
<th>Height</th>
<th>Depth With Door Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD-774</td>
<td>40''</td>
<td>47 3/4''</td>
<td>42 1/2''</td>
</tr>
<tr>
<td>BD-74</td>
<td>40''</td>
<td>47 3/4''</td>
<td>42 1/2''</td>
</tr>
<tr>
<td>DD-74</td>
<td>40''</td>
<td>44 1/4''</td>
<td>42 1/5''</td>
</tr>
<tr>
<td>CD-74</td>
<td>40''</td>
<td>43 1/4''</td>
<td>42 1/5''</td>
</tr>
<tr>
<td>ED-74</td>
<td>40''</td>
<td>43 1/4''</td>
<td>42 1/5''</td>
</tr>
<tr>
<td>HDA-244</td>
<td>30''</td>
<td>40 1/2''</td>
<td>44 1/2''</td>
</tr>
<tr>
<td>EDH-74</td>
<td>21''</td>
<td>40 1/2''</td>
<td>44 1/2''</td>
</tr>
<tr>
<td>FD-64</td>
<td>24''</td>
<td>40 1/2''</td>
<td>44 1/2''</td>
</tr>
<tr>
<td>FD-63</td>
<td>21''</td>
<td>40 1/2''</td>
<td>44 1/2''</td>
</tr>
</tbody>
</table>

CHAMPION MODEL DD-74
Beautifully styled. Has a Super Corox Unit, Giant Miracle Sealed Oven, Two-Level Speed Cooker for fast French frying, Color-Glance Controls, Automatic Appliance Outlet, Built-in Clock and Automatic Oven Timer.

COMMODORE MODEL CD-774
A truly deluxe electric range with famous Miracle Sealed Oven plus a Second Sealed Oven for extra-cooking capacity. Has a Super Corox Unit, plus three other speedy Corox Units. Tel-A-Glance Controls, a Built-in Light, Clock and Automatic Oven Timer, two large storage drawers.

IMPERIAL 30 MODEL HDA-244
This is a space-saving range with deluxe features that takes only 30 inches of floor space. Features a King Size 24'' Miracle Sealed Oven with Look-in Door, and Oven Light. Super Corox Unit plus three other speedy Corox® Surface Units, Built-in Clock and Automatic Oven Timer, Appliance Outlet, Minute Timer, and one extra-large storage drawer.

CHALLENGER MODEL ED-74
Here's real value in clean, cool, fast electric cooking. Features a big Miracle Sealed Oven, three speedy Corox Units and a 6-qt. Econo-Cooker, Tel-A-Glance Controls, Appliance Outlet, three storage drawers. (Can be equipped with accessory Clock and Oven Timer.)

MODEL EDH-74
Here's the perfect electric range for locations needing a full-sized, low-priced model. This solid base model has an extra-large True-Temp oven, four fast Corox surface units, two 8 inch and two 6 inch. Also includes famous Westinghouse Tel-A-Glance Controls, Single Dial Oven Control, Oven Signalite, and Appliance Outlet.

CORONET RANGES

APARTMENT HOUSE MODELS

FD-64 Only 21'' wide. Has four full-sized Corox Surface Units, large Tru-Temp Oven insulated on all six sides, Appliance Outlet, and Titanium porcelain enamel range top.

FD-63 Same as model FD-64 except that this range has three surface units instead of four.
WESTINGHOUSE ELECTRIC WATER HEATERS

The well-known Westinghouse name on Water Heaters in your homes gives an immediate impression of quality—an impression that carries over to all details of your homes. It adds a real selling feature to your homes.

Westinghouse Water Heaters can be installed anywhere—basement, kitchen, utility room, alcove, closet. Need no provision for flue or fuel storage. They can be installed nearest point of greatest use. This is an economy advantage that eliminates long pipe runs.

All Westinghouse Water Heaters carry a liberal 10-Year Protection Policy against tank failure. All have economical, efficient, direct-immersion heating elements; accurate, automatic temperature control, and Fiberglas insulation.

DE LUXE MODELS—In 30, 40, 52, 66 and 80-gallon capacities, with single or double heating elements.

TABLE-TOP MODELS—In 30, 40 and 50-gallon capacities, single or double heating elements. Table-Top Water Heaters have porcelain enamel platforms with four-inch backsplashes that provide a standard-height work surface. New 50-gallon size requires no more space than the 40.

UNDER-COUNTER INSTALLATION

(see illustration)

Table-Top Heaters can be installed under custom work surface, simply by removing the porcelain enamel platforms. On 50-gallon size, a slight recess in underside of custom work surface (described in installation instructions) may be necessary to accommodate hot water line.

SIMPLIFIED TABLE-TOP PLUMBING

Special recessed back on all Table-Top models simplifies plumbing, permits water connections to be made at rear, through floor or wall. Illustration at right, with top removed, shows how recessed pipe channels permit installation flush against wall.

WATER HEATER SPACE REQUIREMENTS

<table>
<thead>
<tr>
<th>De Luxe Models</th>
<th>Capacity</th>
<th>Height</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF-10D</td>
<td>10 gal.</td>
<td>20 1/4&quot;</td>
<td>18 1/2&quot;</td>
</tr>
<tr>
<td>CF-30D</td>
<td>30 gal.</td>
<td>45 1/2&quot;</td>
<td>20 1/2&quot;</td>
</tr>
<tr>
<td>CF-40D</td>
<td>40 gal.</td>
<td>56 1/4&quot;</td>
<td>20 1/2&quot;</td>
</tr>
<tr>
<td>CF-60D</td>
<td>60 gal.</td>
<td>69 1/4&quot;</td>
<td>20 1/2&quot;</td>
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<tr>
<td>CF-80D</td>
<td>80 gal.</td>
<td>69 1/4&quot;</td>
<td>20 1/2&quot;</td>
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</table>

<table>
<thead>
<tr>
<th>Table-Top Models</th>
<th>Capacity</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
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</thead>
<tbody>
<tr>
<td>AF-10T</td>
<td>30 gal.</td>
<td>36&quot;</td>
<td>21&quot;</td>
<td>25&quot;</td>
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<tr>
<td>AF-30T</td>
<td>30 gal.</td>
<td>36&quot;</td>
<td>24&quot;</td>
<td>25&quot;</td>
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<tr>
<td>AF-40T</td>
<td>40 gal.</td>
<td>36&quot;</td>
<td>24&quot;</td>
<td>25&quot;</td>
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<td>AF-50T</td>
<td>50 gal.</td>
<td>36&quot;</td>
<td>24&quot;</td>
<td>25&quot;</td>
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</table>

*Add 4" for backsplasher.
FREE Information

Read the ads! Manufacturers want you to know all about their products and how to use them properly. Use this BIG card, the easy way, to get all the facts.

ABOUT ADVERTISED PRODUCTS

The postcard below is designed to help the readers of American Builder get further information about the Products and Equipment Advertised in this CATALOG-DIRECTORY issue.

Keep your product file up to date. Get this FREE information. All you have to do is check the items below and mail the postcard to us. No postage necessary. We will forward your requests to the manufacturer, who will promptly mail you complete data.

WE PAY THE POSTAGE

Mail this entire card — WE PAY THE POSTAGE

Print name and address

NAME ___________________________

FIRM ___________________________

STREET ___________________________

CITY ___________________________ ZONE STATE ___________________________
Keep abreast of the constant changes taking place in the building field. The products advertised in this issue are designed to help you do a better building job in 1953. Read the pages of this issue with care. Be sure to see your local LUMBER and BUILDING SUPPLY DEALER for all your building needs. If he doesn't carry the products you're interested in, here's a quick, easy way to get complete information. Just check and mail the postcard below. We'll do the rest.
1953 American Builder Directory

This, the third issue of the annual directory compiled by the American Builder, gives the latest and most complete product and data information in the building field. Here contractors, builders, architects, and building material retailers will find information as to building products, their manufacturers, and brand names.

Section I—an alphabetical list of building products and equipment and their manufacturers;

Section II—an alphabetical list of brand names identified with names of manufacturers;

Section III—an alphabetical list of manufacturers of building products and equipment with addresses;

Section IV—an alphabetical list of industry and allied professional associations;

In addition, service organizations prepared to render aid to the industry and to furnish helpful information on special problems are listed under appropriate titles.

This year round reference directory is designed to serve the builder, contractor, architect, and dealer. As every effort was made to make it as accurate as possible, the American Builder cannot be responsible for changes in names, addresses and other discrepancies.

The names of manufacturers who advertise in American Builder are printed in boldface here, in the brand names list and in the list of manufacturers' names and addresses starting on page D-76.

SECTION I
Alphabetical List of Building Products and Equipment Manufacturers

This section includes only the names of the manufacturers. The addresses of these manufacturers are listed in alphabetical order in Section III, starting on page D-76.

As an example, suppose that Mr. Jones wants to find the name and address of a manufacturer of ladder accessories. First, he will turn to the heading “Ladder Accessories” in Section I. Here he will find the address of the company (Coit Street, Irvington 11, New Jersey.) in its alphabetical order under the name Red Devil Tools.

Turning to Section III, he will find the address of the company (Coit Street, Irvington 11, New Jersey.) in its alphabetical order under the name Red Devil Tools.
Manufacturers' Names and Addresses Start on Page D-51
Manufacturers' Brand Name Identifications Start on Page D-52
Manufacturers’ Names and Addresses Start on Page D-61
Manufacturers’ Brand Name Identifications Start on Page D-52
<table>
<thead>
<tr>
<th>Manufacturers' Names and Addresses Start on Page D-61</th>
<th>Manufacturers' Brand Name Identifications Start on Page D-59</th>
</tr>
</thead>
<tbody>
<tr>
<td>APRIL 1953</td>
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</tbody>
</table>

**Flooring, Hardwood**

**Pecan**
- Anderson-Tully Co
- Argentina-Oak Co
- Bradley Lumber Co of Ark
- Bruce (E L) Co
- Central Oak Products Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flooring, hardwood, pre-finished**
- Bradley Lumber Co of Ark
- Bruce (E L) Co
- Central Oak Products Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flooring, rubber**
- Armstrong Cork Co
- Central Oak Products Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flooring, steel**
- Armstrong Cork Co
- Central Oak Products Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flooring, sub-composite**
- Barrett Div Allied Chemical & Dye Corp

**Flooring, underlayment**
- Armstrong Cork Co Building Materials Div
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flower boxes**
- Air Control Products Co
- Armstrong Cork Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Flues & chimneys**
- Prefabricated
- American Vitrified Products Co
- Consumers Glue Co
- Curtis Mfg & Asbestos Co
- Evercrete Corp
- Flexrock Co
- Horn (AC) Co
- Ideal Co
- Keystone Asphalt speeded Co
- Master Builders
- Porete Mfg Co
- Price Brothers Co

**Forms, silo**
- Standard Form Clamp Co

**Fountains, drinking**
- American Radiator & Standard Sanitary Corp

**Frames, door & window, metal**
- Aeta Steel Products Corp
- Aluminum Window Corp
- American Welding & Mfg Co
- Bailey & Miller Co
- Buechle Co
- BEAGLES, MFG CO
- CECO Steel Products Corp
- Chein-Hu Denver Co
- Cigar Industries Inc
- Comfort-Miracle Products Co
- Cooper Steel & Engineering Co
- Crystalite Inc
- Delaware Metal Door Co
- Dixielite Co
- Fensetra Building Products
- HOPE'S WINDOW
- International Steel Co
- Kewanee Co
- Knapp Brothers Mfg Co
- Memorex Products Co
- Metal Crafters
- National Kalamazoo Co
- one-Way Products Co
- Pittsburgh Plate Glass Co
- Richard-J. Wilcox Mfg Co
- SIGMA PRODUCTS
- Wallace-Steel Corp

**Frames, door, wood**
- American Sash & Door Co
- Andersen Corp
- Bill-en-Cullom Lumber Co Inc
- Bradley Lumber Co of Ark
- Burt-Mulick Co
- CARR ADAMS & COLLIER CO
- CROSSETT LUMBER CO
- CURTIS CO
- Door Park Floor Industry Inc
- Durate Lumber & Coal Co
- Farley & Lochter Co
- Flanders' Lumber Co
- General Panel Corp
- HEGG & SON
- Honest Sash & Door Co
- Hotting Mfg Co
- Hough Sash & Door Co
- Hughes-Murphy Co
- Ideal Co
- Keaywood Frame & Mfg Co
- Kissimmee Pine Mills Co
- Lancaster Wood Products
- LONG-BELL LUMBER CO
- MALTA MFG CO
- McMurtry Millwork Co
- Munro Co
- Morgan Sash & Door Co
- National Lumber Co
- Pacific Metal Door Co
- Bech & Moore Mfg Co
- Rock Island Millwork Co
- Sanborn Lumber Co
- Southern Pacific Millwork Co
- Wallside Door Co
- WEL-BILT PRODUCTS CO
- WERNER'S SURFACE WOOD PRODUCTS
- Wisconsin Flush Door Co

**Frames, metal for structural glass**
- Beave Mfg Co
- Building Inter. Co
- CURTIS CO INC
- FAWSCO MFG CORP
- FAYE'S MFG CO
- JOHNS-MANVILLE CORP

**Frames, sink well**
- American Sash & Door Co
- Andersen Corp
- Bill-en-Cullom Lumber Co Inc
- Bradley Lumber Co of Ark
- Burt-Mulick Co
- BEAGLES, MFG CO
- CECO Steel Products Corp
- Chein-Hu Denver Co
- Cigar Industries Inc
- Comfort-Miracle Products Co
- Cooper Steel & Engineering Co
- Crystalite Inc
- Delaware Metal Door Co
- Dixielite Co
- Fensetra Building Products
- HOPE'S WINDOW
- International Steel Co
- Kewanee Co
- Knapp Brothers Mfg Co
- Memorex Products Co
- Metal Crafters
- National Kalamazoo Co
- one-Way Products Co
- Pittsburgh Plate Glass Co
- Richard-J. Wilcox Mfg Co
- SIGMA PRODUCTS
- Wallace-Steel Corp
FRAMING, STEEL
Alabama Metal Lath Co
American Bridge Co
Bickton Mfg Co
Brady Lath & Steel Co
GREAT LAKES STEEL CORP
INLAND STEEL PRODUCTS CORP
International Steel Co

WHITE PINE SASH CO
Roach & Musser Co
Missoula Island Millwork Co
Wood Products Lumber Co
Morgan Sash & Door Co
Vacaville Mutual Door Co
WHITE PINE SASH CO

FURNACES, CONVERTIBLE,
COAL, OIL, OR GAS
American Foundry & Forging Co
International Steel Co
Meyer Furnace Co
Norton Products Co
Williamson Heater Co

FURNACES, COUNTERFLOW
UNITS
DELCO APPLIANCE DIV GENERAL MOTORS CORP
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co

FURNACES, FLOOR
AIRTEMP DIV CHRYSLER CORP
AMERICAN RADIATOR & STANDARD SANITARY CORP
Armstrong Products Co
Barron Co
DELCO APPLIANCE DIV GENERAL MOTORS CORP
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co

FURNACES, SUSPENDED
COX MFG CO
Gilbert & Barker Mfg Co
Jackson & Chase
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

FUSE BOXES, ELECTRIC
SERVICE
American Electric Co
All-Steel Equipment Co
Apollo Mfg & Engg Co
Cale Electric Products Div Federal Electric Co
Columbia Metal Box Co
Electrical Equipment Co
Federal Electric Products Co

GREAT LAKES RUST-PROOF STEEL CORP
Western Wire Electric Div Federal Electric Co

GARAGE DISPOSERS
AMERICAN CENTRAL DIV AVCO MFG CORP
AMERICAN RADIATOR & STANDARD SANITARY CORP
AERONAUTICAL ELECTRICAL MFG CO
Barker (Thomas W) Inc
CHRYSLER DIV AVCO MFG CORP
GENERAL ELECTRIC CO APPLIANCE DIV
GIVEN CO
IN-SUNK ERATOR DIV
KELVINATOR DIV
MARTIN-VEIT WEIS CO

GAS, BOTTLED
American Liquid Gas Corp
Bluebonnet
Camarillo & Carbon Chemicals Dist Union Carbide
Delta Trub Mfg Co Inc
Eskimo Gas Co
Gulf Oil Corp
Morgan Oil Co
National Oil
Standard Oil Co

GASKETS, SEWER PIPE
American Vitrified Products Co
AMERICAN BUILDER
Card Co
Eagle Pipe Co
JOHNS MANVILLE CORP
NATIONAL CLAY PIPE MFGS INC
Phillips Clay Products Co
Universal Concrete Pipe Co

GATES, FARM
AMERICAN STEEL & WIRE CORP
AMERICAN RADIATOR & STANDARD SANITARY CORP
Barron Co
DELCO APPLIANCE DIV GENERAL MOTORS CORP
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

GATES, FOLDING
CYCLONE FENCE DIV AMERICAN STEEL & WIRE CORP
GREAT LAKES RUST-PROOF STEEL CORP
Western Wire Electric Div Federal Electric Co

GREAT LAKES STEEL CORP
Western Wire Electric Div Federal Electric Co

HESS CO

FURNACES, GAS FIRED
AIRTEMP DIV CHRYSLER CORP
AMERICAN RADIATOR & STANDARD SANITARY CORP
Armstrong Products Co
Barron Co
DELCO APPLIANCE DIV GENERAL MOTORS CORP
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

FURNACES, GAS FIRED
AIRTEMP DIV CHRYSLER CORP
AMERICAN RADIATOR & STANDARD SANITARY CORP
Armstrong Products Co
Barron Co
DELCO APPLIANCE DIV GENERAL MOTORS CORP
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

FURNACES, WEBSTER DIV COX MFG CO
Graham Mfg Co
Jackson & Chase
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

GREAT LAKES STEEL CORP
Western Wire Electric Div Federal Electric Co

GUIDE ANCHOR MFG CO

HESS CO

FURNACES, WALL
EMPIRE STOVE CO
HESS CO
Meyer Furnace Co
Norman Products Co
Williamson Heater Co
York-Shipley Inc

HOLLAND RUST-PROOF STEEL DIV
AMERICAN RADIATOR & STANDARD SANITARY CORP

HOLIDAY MFG CO

FURNITURE, BUILT-IN
BICCO MFG CO

HOLLAND RUST-PROOF STEEL DIV
AMERICAN RADIATOR & STANDARD SANITARY CORP

HORIZON MFG CO

FURNITURE, BUILT-IN
BICCO MFG CO

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AMERICAN RADIATOR & STANDARD SANITARY CORP

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BICCO MFG CO

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AMERICAN RADIATOR & STANDARD SANITARY CORP

HORIZON MFG CO

HOLLAND RUST-PROOF STEEL DIV
AMERICAN RADIATOR & STANDARD SANITARY CORP

HORIZON MFG CO
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<th>Brand Name</th>
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<tr>
<td>Chamberlin Co of America</td>
<td>COFFMAN (RG) CO INC</td>
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<td>Decatur Iron &amp; Steel Co</td>
<td>DENNIS (W J) &amp; Co</td>
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<td>Southern Wire &amp; Iron Works</td>
<td>FISHER (S J) Hardware Mfg Co</td>
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<td>Medina Mfg Co</td>
<td>ROBBINS MFG CO</td>
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<td>Holmes Mfg Co</td>
<td>SOUTHERN STEEL MFG CO</td>
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<tr>
<td>SKIL CORP</td>
<td>MILWAUKEE ELECTRIC TOOL CORP</td>
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<tr>
<td>WEEGLEY ELECTRIC TOOLS</td>
<td>STANLEY WORKS</td>
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<td>STANDARD STEEL CABINET Co</td>
<td>SOUTHERN WIRE &amp; IRON WORKS</td>
</tr>
<tr>
<td>Manufacturers’ Brand Name Identifications Start on Page D-51</td>
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<tr>
<td>Manufacturers’ Name and Addresses Start on Page D-52</td>
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</tbody>
</table>
Manufacturers' Addresses and Names Start on Page D-61
Manufacturers' Brand Name Identifications Start on Page D-52
| Manufacturers' Names and Addresses | Start on Page D-61 | Manufacturers' Brand Identities Start on Page D-52 |

**JACK S, CEILING**

Gorman Ceiling Jack Co

**JACK S, HOUSE**

American Scale Co

**JACK S, LADDER**

American Ladder Co

**JALOUSI E**

Caryelrent Hardware Co

**JAMBS, DOOR METAL**

DELUXE METAL TRIM CO

**JAMBS, PACKAGED DOOR**

FRAZIER WOOD CO,

**JIGS, BORING**

Cor knight Lock & Hardware Co

**KITCHEN CABINETS, METAL**

HEINZBURGER MFG CO

**KITCHEN CABINETS, WOOD**

ABBOUR (G H) & CO INC

**KITCHEN VENTS**

BADGER CORRUGATING CO

**KNIVES, CUTLERY**

WHITING & CO

**KNIVES, JAPAN**

AKINO (USA) CO

**KNIVES, TOOL**

Binks Paint Spraying Co
PREFABRICATED BUILDINGS, FARM
Bauser Mfg Co Clayton & Lambert Mfg Co Clayco-Te-Co Mfg Co Crawford Corp
Factory Built Homes Inc
Green Lumber Co Haggin Co
Hodgen (J F) & Son Houston Builder & Sheet Metal Works Houston Ready-Cut House Co Jomes Mfg Co
Johnson Co
Potter Mfg & Lumber Co Prefabricated American House Corp Prefab Industries
STEELRAFT MFG CO
Super-Structures Inc Texas Housing Co Inc
TIMBER STRUCTURES INC
TRUSCION STEEL CO
U S Challenge Co Uni-Structures Inc Weyerhauser Sales Co
PREFABRICATED CLOSETS
Mengele Mfg & Mo. Mfg Co
PREFABRICATED GARAGES
Adairlanders Ltd Co Inc Bennett Industries Inc Brown-Whitaker Mfg Co
Crawford Corp
Durbin-Wisden Mfg Co Factory Built Homes Inc FORD (IVON R) INC
GMR-WAY HOMES INC
Green Lumber Co
Hodgen (J F) & Son Kyle Park & Mfg Co
Johnson Co
Pro-Industries Inc Reilance Steel Products Co Sectional Garage Works Smith-ter Inc
Soule Steel Co
STEELRAFT MFG CO
Super-Structures Inc Templeton (Herbert A) Lumber Co
Tiger Mfg Co
U S Prefab Corp
PREFABRICATED HOUSES
Adairlanders Ltd Co Inc Bennett Industries Inc Central Builders Co
American Builders Co American Homes Inc Bennett Lumber Co
Butler Mfg Co
Central Mfg Co
Jomes Mfg Co
Johnson Co
Potter Mfg & Lumber Co Prefabricated American House Corp Prefab Industries
STEELRAFT MFG CO
Super-Structures Inc Texas Prefabricated Housing Co Thyer Mfg Corp
WES! COAST MILLS WYERHAEUSER SALES CO
UNITED STEEL FABRICATORS INC
United Structures Inc
PREFABRICATED LOG CABIN PANELS
Penn Co of America Potter Furnace Co Inc
PREFABRICATED WALL PANELS
American Builders Co
Atlantic Mfg Co
ATLAS MATH CO
FENESTRA BUILDING PRODUCTS
Mahon Co
PRESERVATIVES, CANVAS
American Test & Aiding Co
Arturo Co
FROSTAL THERMAL CHEMICALS INC
Fundamental Chemicals Inc
CUPRINOL DRY DARROWTH INC
Fundamental Chemicals Inc
Gas Chemical Co
India Pot (E1) d Nomars Co Inc
Ring Chemical Co
Rust Oil & Grease Mfg Co
PERMA PRODUCTS CO
SAGE WOOD PRODUCTS INC
PITTSBURGH PLATE GLASS CO
PRESERVATIVES, WOOD
American Wash Co
Barnett Chemical Co
Barnett Triplex Co
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Manufacturers’ Names and Addresses Start on Page D-61
Manufacturers’ Brand Name Identifications Start on Page D-52
BRAND NAMES used to identify principal building products and equipment of major manufacturers are listed in this section in alphabetical order with the names of manufacturers using the brand names. Trade and brand names popularly used in the building industry are listed irrespective of their registration. This selective list is presented for the convenience of builders, contractors, architects and retail material dealers who will find it helpful in identifying the manufacturers of certain building products and equipment.

The names of the manufacturers are listed after the brand or trade name. The addresses of the manufacturers will be found in Section III beginning on page D-61.

**ALPHABETICAL LIST OF BUILDING PRODUCTS AND EQUIPMENT**

List of Manufacturers’ Names
With Addresses Starts on Page D-61
1953 American Builder Directory

SECTION III

Names and Addresses
Manufacturers and Associations

P R I N C I P A L M A N U F A C T U R E R S of building products and equipment are listed in this section in alphabetical order. In some instances, the manufacturing organization is listed under the name of a division rather than under the parent company, popular usage served as a guide in these cases. For example, the manufacturer of Chevrolet Trucks is listed as—Chevrolet Motors Div., rather than as—General Motors Corp., Chevrolet Motor Div.

In other cases such as those involving departments of companies, the more popular major name is used as the key to the index. For example, the garage hardware department of the Stanley Works is indexed as follows—

Stanley Works, Garage Hardware Dept.

Care has been taken to make this index as accurate as possible, but the American Builder is not responsible for changes in addresses and other discrepancies.

Air Rectifiers Inc 3734 N Southport Ave
Adams Rite Mfg Co 540 West Chevy Chase Dr Glendale 1 Calif
Aetna Steel Prod Co 730 Fifth Ave New York 20 N
Air Control Products Inc Glade St at Larch
Aldrich Co Wyoming Ill
American Hardware Corp Russell & Erwin
American Hardware Corp Corbin (P & F) Div 102 Washington New Britain Conn
American Floor Surfacing Machine Co 515 S 22nd St Columbus 6 0
American Kitchens Div Avco Mfg Corp Stenib 102 Washington New Britain Conn
American Machine & Foundry Co 511 Fifth Ave New York N Y
American Radiator & Standard Sanitary Corp P.O. Box 1226 Pittsburgh 30 Pa
American Rectifier Corp 401 South St Boston 13 Mass
American Shipping Co Inco 1026 N La Brea Ave Los Angeles 33 Calif
American Stained Glass Co 540 West Chevy Chase Dr Glendale 1 Calif
American Steel & Wire Co 1420 Rockefeller Bldg, New York 20 N
American Telephone & Telegraph Co 195 Broadway New York 20 N
Anderson Corp 210 Washington New Britain Conn

*Advertisers Only

APRIL 1953
FORMICA Helps a House Become a Home

The heart-warming colors and smooth pleasant feel of Formica lead to love at first sight for home buying prospects. But equally important, Formica on kitchen and bathroom surfaces is easy to live with, easy to clean, and a joy to own far into the future. Its resistance to boiling water, alcohol, acids and alkalies, and all-round hard use is so well known to homemakers that the name Formica has a sales magic all its own.

Look in the classified phone book under "Plastics" for a Formica fabricator who will do a custom job to your specification. Many nationally sold kitchen cabinets are available with Formica tops. Always ask for Formica by name and look for this assurance directly on the product.

THE FORMICA COMPANY, 4514 Spring Grove Ave., Cincinnati 32, Ohio
In Canada: Arnold Berfield & Co. Ltd., Toronto, Ontario
Modern, simple designs
Easily installed
Smooth operation
Extra-long service life

For greater home comfort all summer

Enjoy healthful fresh air on the open porch, safely protected from flies and insects, with adequate screening. Open, screened windows throughout the home also allow for the circulation of clean, cool air with maximum sanitation safeguards. These efficient screen accessories are enjoying popular demand at this season of the year. Order your supply today!

No. 90 Screen and Storm Door Set
No. 93 Screen and Storm Door Set
No. 196 Screen Door Turnbuckle