THE RED BOOK

PLAINTIFF'S EXHIBIT

USG-1737

U S G

BUILDING MATERIALS

1939 EDITION

UNITED STATES GYPSUM COMPANY

BB024 0974

HISTORICAL FILE
1939
DO NOT DISCARD

A Catalog of

BUILDING MATERIALS

MANUFACTURED AND SOLD BY

UNITED STATES GYPSUM COMPANY

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(ARCHITECTURAL)
1939

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UNITED STATES GYPSUM COMPANY

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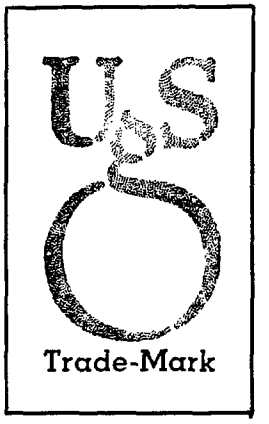
EXPERIENCE—The United States Gypsum Company is a pioneer in the gypsum industry in America. For more than thirty-five (35) years, the company—through its laboratories, experimental departments and field investigations—has closely studied the requirements of the building industry. Its formulae and mechanical equipment have been painstakingly designed to adapt each of its gypsum and other products to meet comprehensively these requirements.



exceptional national distribution facilities and a product specially manufactured to fulfill variable local climatic conditions.

The list below shows the location of the USG centers and visualizes these important service facilities.

SALES AND SERVICE FACILITIES—The twenty-five sales offices in the important building centers guarantee adequate service to architects.

COMPLETE DIVERSIFIED LINE OF PRODUCTS—Wherever gypsum is adapted to building uses there is a USG* product specially designed to fulfill the particular requirement.

The broad scope of the company's gypsum and other products is indicated by the Products Index.

MANUFACTURING AND DISTRIBUTING FACILITIES—The superiority of USG products is based upon high grade raw material, perfected processes of manufacture and one control of the gypsum products from mining to shipping.

The fifty mines, mills, and warehouses, strategically located throughout the United States, assure

THE TRADE-MARK—Products bearing the trade-mark of the United States Gypsum Company are safeguarded against imperfections. They are rigidly inspected by experts at every stage of production, from the selection of the raw materials to the shipment of the finished products.

Any variation from the highest USG Standard means rejection.

This rigid maintenance of quality over a long period of years has established the name and trade-mark of the United States Gypsum Company as synonymous with the highest standard of excellence in building materials.

GENERAL OFFICES

300 WEST ADAMS STREET, CHICAGO, ILL.

SALES OFFICES

Atlanta, Ga.....1440 Citizens and Southern Bank Building
Baltimore, Md.....1400 Standard Oil Building
Birmingham, Ala.....1203 Comer Building
Boston, Mass.....731 Statler Office Building, 20 Providence St.
Buffalo, N. Y.....514 Brisbane Building
Cincinnati, Ohio.....3012 Carew Tower
Cleveland, Ohio.....627-629 Hanna Building
Dallas, Tex.....1302 Santa Fe Building
Denver, Colo.....514 18th St.
Detroit, Mich.....10090 W. Jefferson St.
Houston, Tex.....706 Sterling Building
Indianapolis, Ind.....815 Architects' and Builders' Building
Kansas City, Mo.....438 Ward Parkway
Los Angeles, Calif.....807 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis.....(At Mill) 439 W. Oregon St.
Minneapolis, Minn.....1310 Foshay Tower
New York City, N. Y.....30 Rockefeller Plaza
Omaha, Neb.....921 Woodmen of the World Building
Philadelphia, Pa.....1616 Walnut St.
Pittsburgh, Pa.....712 Grant Building
Portland, Ore.....302 Spalding Building
St. Louis, Mo.....1047 Big Ben Blvd.
Salt Lake City, Utah.....400 Dooly Building
San Francisco, Calif.....2501 Harrison St.
Washington, D. C....Investment Bldg., 15th and K Sts., N. W.

Samson Plaster Board Company, Sales Agents for United States Gypsum Company, Crosby Building, Buffalo, N. Y.

MILLS, MINES, QUARRIES AND DEALER SERVICE WAREHOUSES

Alabaster, Mich.
Boston, Mass.
Bronx, New York City
Buffalo, N. Y.
Chicago, Ill.
Cleveland, Ohio
Cordova, Ill.
Detroit, Mich.
East Chicago, Ind.
Eldorado, Okla.
Evans, Wash.
Falls Village, Conn.
Farnams, Mass.
Fort Dodge, Iowa
Genoa, Ohio
Grand Rapids, Mich.
Greenville, Miss.
Gypsum, Ohio
Harrison, N. J.
Heath, Mont.
Jacksonville, Fla.
Jersey City, N. J.
Lancaster, Ohio
Laramie, Wyo.
Lisbon Falls, Me.
Los Angeles, Calif.
Loveland, Colo.
Miami, Fla.
Midland, Calif.
Milwaukee, Wis.
Nephi, Utah
New Brauniels, Tex.
New Brighton, S. I., N. Y.
North Kansas City, Mo.
North Tonawanda, N. Y.
Oakfield, N. Y.
Oakmont, Pa.
Philadelphia, Pa.
Piedmont, S. D.
Plasterco, Va.
Quincy, Ill.
St. Paul, Minn.
San Francisco, Calif.
Skaneateles Falls, N. Y.
Southard, Okla.
South Bend, Ind.
Southgate, Calif.
South St. Joseph, Mo.
Sweetwater, Tex.
Warren, Ohio

*Registered Trade-Mark

BB024 0978

RED BOOK · SECTION A

Plasters · Plastering Bases · Plastering Systems
Exterior Stucco

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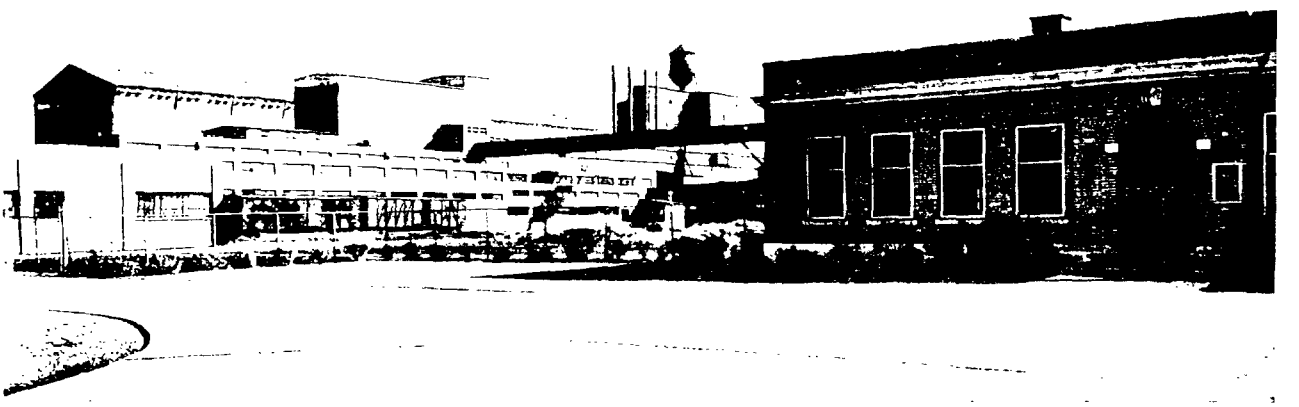
GYPSUM

A BASIC USG PRODUCT



East Chicago Mill—East Chicago, Indiana
One of Twenty (20) USG Gypsum Mills

GYPSUM • TECHNICAL DATA

GYPSUM—Chemically, Gypsum is hydrous calcium sulphate $CaSO_4.2H_2O$. It is a widely distributed mineral found in rock formation. The rock gypsum is crushed, ground and then calcined, which drives off a part of the molecular water, forming the hemi-hydrate or plaster of paris. This product, when mixed with water, recrystallizes or sets.

FIREPROOF—The superior qualities of gypsum as a fireproof building material have been definitely established by numerous tests made by the Underwriters' Laboratories, Inc., The Bureau of Standards, Columbia University, and by the bureau of buildings in many of the larger cities. (Authentic test data if desired will be furnished on request.)

The temperature of the unexposed side of the gypsum slab cannot exceed 212° F. while there is any water of crystallization in the gypsum. This is due to the fact that the water of crystallization in the gypsum must be vaporized during the application of fire to it, and as the gypsum slowly calcines, the cellular structure fills with steam. It is this barrier of calcined material which stubbornly resists the progress of the fire.

BB024 0979

PLASTERS

GYPSUM PLASTERS • GENERAL DATA

GENERAL FEATURES

DESCRIPTION—Gypsum Plasters are made by driving off water of crystallization from gypsum rock through calcination, or heat treatment. The addition of water to this basic material (calcined gypsum rock) forms a plastic mass which unites with the same amount of water as was driven off during calcination. When this plaster is mixed with water it re-crystallizes.

QUICK-SET—FAST DRYING—Gypsum Plaster sets up uniformly hard and homogeneous within two to six hours after application. Inside of thirty-six hours, under proper drying conditions, the plaster dries and there is no further dampness or sweating.

ADVANTAGES

ADAPTABILITY—Gypsum Plaster adheres satisfactorily to gypsum, wood or metal lath; gypsum or clay tile; brick or other approved plastering surface.

FIRE RETARDING—Made of gypsum, it is fireproof.

EXCEPTIONAL ADHESIVENESS—Its exceptional adhesiveness greatly increases structural durability.

DOES NOT EXPAND OR CONTRACT—It does not expand and tear itself loose from the surface to which it is applied, even when subjected to fire. It will not crack of itself, shrink or stain.

DURABLE—Gypsum Plaster will withstand the wear and tear of occupancy during the life of the building. It affords a substantial foundation for the finish coat and applied decoration.

SAVES TIME—It sets in two to six hours and dries within 36 hours—interior trim and finish may thus, reasonably soon, follow the plastering without danger from moisture.

PLASTICITY, RICHNESS and "SLIP"—USG Plasters have been developed as much for the convenience of the plasterer as for the above qualities. The result is an unusual richness and "slip" which is appreciated by the competent mechanic. They mix easily at the mortar box; they go on quickly and spread far, resulting in maximum coverage with minimum labor.

UNIFORMITY

The quality of USG Plasters is rigidly controlled by repeated chemical tests, physical tests, and by effective inspection in every stage of manufacture, from the crude gypsum rock to the finished product. Samples from every shipment are retained for future reference.

All USG Plaster meets the standard specification for Gypsum Plaster of the American Society for Testing Materials.

IDENTIFICATION • RED TOP* BAG

In addition to the USG trademark on each bag of plaster, the United States Gypsum Company's Plasters are contained in the standard Red Top bag, which provides a positive means of identification that discourages substitution.

PLASTER PACKAGE

GENERAL—Every package of USG Gypsum Plaster bears the familiar trade-mark (see front cover), and bags have the Red Top. Each bag bears the brand and the mixing directions.

REINFORCED PAPER BAG—The paper bag, made of layers of strong kraft paper, is the standard bag of the United States Gypsum Company.

COVERING CAPACITY

The covering capacity of USG Plasters is as great for each type of material as it is possible to obtain.

Covering capacity necessarily depends upon conditions under which the plaster is applied—upon the mechanic, thickness of grounds, kind and trueness of the surface to be plastered, spacing or voids of lath, quality of sand, etc.

The covering capacity given hereinafter with each type of material and for the various surfaces to receive the plaster is based on average conditions.

BRANDS

The standardization nationally of USG plasters under the "Red Top" brand is a protection to the architect and a convenience to the trade. The architect is assured that the quality of the plaster, from whatever mill shipped, will be identical.

When specifying "Red Top" for use in a distant city, the architect is assured (1) that the plaster will be the same as that with which he is familiar; (2) that a shipping mill is in close proximity; (3) that the plaster will be recognized as standard by the local mechanics.

*Registered Trade-Mark

BB024 0980

CEMENT PLASTERS
(Fibered and Unfibered)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top*	Niagara	King's Windsor*
Granite	Peerless	Red Top Eldorado*
Big-4*	Hardwall	(Gypsite)

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Red Top Cement Plasters are "neat" materials—sand to be added at the job. They are unusually rich, spread well, and, when mixed properly with a good grade of sand, are uniformly satisfactory in ultimate results in the finished wall.

Manufacture under the "Red Top Process" assures the maximum in sand carrying capacity, easy workability, and bulk. They set in a uniform time over any base unaffected by ordinary job conditions.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions Gypsum Cement Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	180–210 (Sanded 2 to 1)	105–135 (Sanded 2 to 1)	225–240 (Sanded 2 to 1)	165–200 (Sanded 3 to 1)	235–255 (Sanded 3 to 1)

WOOD FIBER PLASTERS

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top.
Red Top Eldorado (Gypsite).

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Wood Fiber Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster, to which is added finely shredded wood fiber, uniformly distributed. Made of pure gypsum reinforced with wood fiber, it is extremely tough, strong, dense, and durable. It is superior to sanded plaster in fire-resistance, insulation, and sound-deadening. Its great flexibility adapts it to withstand vibrations and strains.

Wood fiber plaster avoids the handling of sand, dangers of poor sand, and oversanding. It is smooth, fatty, and spreads easily. When applied, it weighs about two-thirds as much as sanded cement plaster.

It is especially adaptable to alterations and is desirable for winter use. It may be sawed like wood.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions this plaster mixed and applied as specified will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath
Sq. yds. per ton	90–100 (Unsanded—water only added)	55–65 (Unsanded—water only added)	115–120 (Unsanded—water only added)

PREPARED PLASTERS
(SANDED)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top* Sanded Plaster.
Red Top Sanded Plaster for Brick or Tile.
Red Top Sanded Wood Fiber Plaster.

DESCRIPTION—Prepared Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster to which is added nothing but sharp, clean plastering sand, thoroughly graded and screened.

Correct proportions and mixing are accomplished by automatic machines at the factory.

Prepared plasters are desirable in localities where good sand is difficult to obtain.

Since they are ready to apply with the addition of water only, they are particularly well adapted for use in winter when unfrozen sand of good quality is difficult or expensive to obtain.

Since these plasters may be readily mixed inside the building, they are useful for repair and remodeling work in all seasons.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions Gypsum Prepared Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	60 to 70	35 to 45	75 to 80	45 to 55	65 to 70
	(Plaster mixed with water only—no sand added)				

*Registered Trade-Mark

BB024 0981

BONDCRETE* • For Interior Concrete Surfaces

USE—Use for scratch and brown coats over concrete.

DESCRIPTION—Ordinary gypsum or lime plaster does not adhere properly to concrete—consequently Bondcrete, a specially made plaster for concrete surfaces, is recommended. Water only added on job.

Bondcrete permits moisture, expelled from concrete for approximately a year, to be carried through and evaporated on the surface, thus avoiding a condition approaching a sweat-out. Any plaster finish can be used over Bondcrete. Oil paint decoration should be deferred for a year.

Bondcrete adheres strongly to dry concrete due to its cementatious qualities and its practically unchanging volume during setting and hardening. It needs only water to make it ready for use.

Do not apply Bondcrete over a smooth, oily or efflorescent surface. Provide a semi-rough, clean surface. It should not be covered with a sanded brown coat on ceilings.

Finish coat must never exceed ¼ inch in thickness. Provide furring and lathing where more than ¾ inch of plaster is required or ornamental plaster is suspended.

DIRECTIONS—*(See Master Specifications, p. 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—From 90 to 120 sq. yds. to the ton depending upon regularity of concrete surface and thickness applied.

Note—*See "Covering Capacity," page 2.*

PREPARED GYPSUM FINISHES

USE—Use for finish coat only.

BRANDS—Note—*See "Brands," Page 2.*

Trowel Finishes
Red Top* Trowel Finish.
Red Top Universal* White Trowel Finish.
Red Top Adamant* White Trowel Finish.
Red Top Adamant Slate Colored Trowel Finish.
Red Top Adamant IXXX Trowel Finish.
Red Top Badger* Gray Trowel Finish.

Sand Float Finishes
Red Top* Silica White Sand Float Finish.
Red Top Adamant Gray Sand Float Finish.
Red Top Adamant White Sand Float Finish.
Red Top Sand Float Finish (Light Gray).

DESCRIPTION—Prepared Gypsum Finishes require only the addition of water to make them ready for use.

Made of gypsum, they form a perfect and natural bond with any gypsum plaster base coat.

The sand float finishes contain selected sharp, clean silica sand, properly graded, screened and thoroughly dried, thus assuring a uniform mix of correct proportion. They are especially recommended for use in winter when unfrozen sand of the requisite quality is difficult to obtain. Decorations may safely be applied as soon as the finish dries out.

DIRECTIONS—*(See Master Specifications, pp. 26, 27, 28).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under *average* conditions Gypsum Trowel Finish, if mixed and applied in accordance with standard specifications, will cover about 350 to 400 yds. per ton; Gypsum Sand Float Finish about 250 to 275 yds. per ton.

ORIENTAL* INTERIOR COLORED FINISH PLASTER

USE—Use for textured or floated plaster finish coat.

DESCRIPTION—Oriental Interior is a colored finish plaster. The material is made in thirteen standard shades and white. Tints are produced with mineral colors, great care being taken to assure absolute uniformity of shade. It is ready for use with the addition of water only.

With ordinary tools, attractive, tinted, float, textured tile and stone finishes may be obtained.

The positive regulation of color insures walls with the minimum amount of "joinings" and avoids the danger of inaccurate mixing.

DIRECTIONS—*(See Master Specifications, pp. 26, 27, 28).*

PACKAGE—Shipped in 100-lb. paper bags. Order Oriental Interior by color name designated on color cards or samples.

COVERING CAPACITY—Approximately 250 to 300 sq. yds. per ton, varying according to textures.

GAUGING PLASTERS

USE—Use for finish coat only in conjunction with lime putty described below.

BRANDS—Note—*See "Brands," page 2.*

Slow Set—Red Top* (Gray).
Red Top Star* (White).
Red Top Superfine Finishing (White).

Quick Set—Red Top* (Gray).
Red Top Champion* (White).
Red Top Kings Diamond* (White).
Red Top NYC Mills*.
Red Top Quick Setting.
Red Top Fast Setting.

*Registered Trade-Mark

BB024 0982

GAUGING PLASTERS (Cont'd.)

DESCRIPTION—These plasters are made of raw materials carefully selected from gypsum deposits unusually well suited for plasters for this purpose.

Aside from saving time, gauging plasters are far more satisfactory than screened cement plaster.

They are made in both "slow set" and "quick set," and are uniformly ground to just the right fineness to insure easy working and mixing qualities.

Gauging plasters used according to directions contribute early hardness and freedom from shrinkage cracks.

DIRECTIONS—Full directions for mixing and application are given under Finishing Lime.

PACKAGE—Shipped in 100-lb. paper bags. Also shipped in 250-lb. (230 lb. net) barrels and 320-lb. (300 lb. net) barrels.

COVERING CAPACITY—Under average conditions one ton of Gauging Plaster, mixed with two tons of dry hydrated lime by weight, will cover about 1000 to 1400 sq. yds.

FINISHING LIME

USE—Use finishing lime for finish coat only in conjunction with Gauging Plaster or Keene's Cement.

BRANDS—Note—*See "Brands," page 2.*

Hydrated Finishing Lime
Red Top Ivory*.
Red Top Grand Prize*.
Red Top.
Cheshire* Hydrate (High Calcium).
Plastimax* Finishing Hydrate (High Calcium).

Finishing Quicklime
Cheshire* Quicklime (High Calcium)—in Lump, Pulverized and Superfine.
Peerless Quicklime (High Calcium)—in Lump and Pulverized.

DESCRIPTION—These limes are specially prepared for finishing purposes. They possess a rich plasticity that makes them spread easy and far; hence they save time and labor.

Hydrated lime saves the time and trouble of slaking and screening lime on the job.

The Red Top Hydrated brands are made from the famous Ohio dolomite which, with USG standards of manufacture, produce a lime unexcelled for finishing purposes.

They are of a snowy white color and are absolutely free from "pops" and "pits." They meet the standard specifications for hydrated lime of the American Society for Testing Materials and are accepted for United States Government construction without specific tests on the certification of the United States Gypsum Co. that the lime conforms with government requirements.

Plastimax lime is a specially processed quick-soaking hydrate.

Cheshire Quicklime is wood burned and of exceptional quality. Because of the exceeding purity and the physical characteristics of the stone, this lime is unusually quick slaking. It has a high putty yield.

DIRECTIONS—*(See Master Specifications, pp. 26, 28).*

PACKAGE—Hydrated Lime is shipped in 50-lb. paper bags. (Plastimax in 40-lb. bags.)

Quicklime is shipped in 180-lb. and 280-lb. net weight wood barrels and steel drums, also in bulk. The Cheshire Finish Quicklime is shipped also in 80-lb. and the Peerless Quicklime in 50 and 100-lb. Multi-Wall paper moisture-proof bags.

COVERING CAPACITY—Under average conditions one ton of Red Top Hydrated Lime, when used with the proper proportions of gauging plaster, should finish from 500 to 700 sq. yds.

A ton of Quicklime, when used with gauging plaster, should finish about 1000 yards.

RED TOP* KEENE'S CEMENT

USE—Use for high grade plasterwork, particularly to receive fine decorative treatment and where the utmost in hardness, density and sanitation is desired.

DESCRIPTION—Red Top Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is made from selected gypsum mined at Southard, Oklahoma. It excels in smooth, uniform working qualities and in tensile strength, due to the selected material and the USG improved methods of manufacture and rigid mill inspection.

Keene's Cement is ground to extreme fineness, is pure white in color and takes a very high, glass-like polish. It is impenetrable to rodents and vermin. It is easily cleaned. It contains no alkali to stain delicate wall tints or saponify the oil in paints, hence it is an ideal base for fine decorating.

Beside the standard Keene's Cement, Red Top Keene's Cement is made in three special types: Red Top Casting Keene's; Red Top Scagliola Keene's and Red Top Quick Troweling Keene's.

Red Top Casting Keene's, especially adapted to high class ornamental work, has minimum expansion. It is white, non-staining, non-corrosive, non-acid. It has a final set within two hours.

Red Top Scagliola Keene's is made expressly for the purpose. Initial set is 3 to 6 hours; final set, 15 to 20 hours.

Quick Troweling Keene's is always used with lime putty for finish plaster. Its rapid set permits application and finish troweling in one operation. Setting time is within two hours, when final troweling should be given.

DIRECTIONS—*(See Master Specifications, pp. 26, 27).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions one ton of Keene's Cement, when used neat and in accordance with specifications, will cover about 400 to 500 sq. yds.

*Registered Trade-Mark

BB024 0983

RED TOP (ARIDIZE*) MOULDING PLASTER

USE—Use for ornamental moulded plaster work.

BRANDS—Note—*See also "Brands," page 2.*

Red Top* (local moulding).
Red Top No. 1 (White).
Red Top No. 2 (White).
Red Top King's Diamond (White).
Golden Seal (White).

DESCRIPTION—The requirements for moulding plaster are distinctly different from any other class of plaster.

Gypsum deposits suitable for making material of this particular type are exceedingly rare.

Aridize Moulding Plasters are made from selected gypsum ideal for the purpose and unequaled for whiteness and purity. This, together with the special patented process of manufacture, produces a particularly smooth working plaster of absolutely uniform setting quality.

These plasters are ground much finer than other similar products, assuring a more thorough solution and a finer surface to the finished work. The fine satin-like surface increases the life of the moulds.

In addition to these qualities, the plasters are cooler working and slower setting, which accounts for low expansion and absence of warped moulds. The slow generation of heat in setting insures protection to gelatine or glue moulds. Slow setting gives time for blending and working out trapped air bubbles and working the plaster into angles and corners of moulds.

Even when green, moulds made of these plasters possess great strength, and breakage by handling and manipulation in the moulding and casting stage is diminished.

DIRECTIONS—*(See Master Specifications, p. 28).*

PACKAGE—Shipped in 100-lb. paper bags; 250-lb. (230 lb. net weight) barrels and in 320-lb. (300 lb. net weight) barrels.

ORIENTAL EXTERIOR STUCCO

DESCRIPTION—Oriental Exterior Stucco is a completely factory-mixed exterior stucco material of the highest quality. The finish coat is scientifically colored in a wide range of tints. It is the product of careful and thorough investigation and research by the United States Gypsum Company.

Oriental Exterior Stucco Finish is furnished in white and eleven standard colors. Water only needs to be added at the job. A uniform color and correct mixture are assured by machine mixing at mill, entirely eliminating the unavoidable variations which occur when stucco is hand-mixed on the job.

Bases—Oriental Exterior Stucco should be applied over stucco mesh weighing not less than 1.8 lb. per sq. yd. or self-furring diamond mesh metal lath weighing not less than 3.4 lb. per sq. yd.

Base Coat—Oriental Exterior Stucco Base Coat is a specially prepared, factory-mixed, permanent, water-resistive base for Oriental Exterior Stucco Finish, with the correct proportion of uniformly graded, selected sand, and other ingredients added to make it plastic.

Being made ready for use by the addition of water only, it is economical of time and labor and assures a base of uniform suction and strength.

Finish Coat—Oriental Exterior Stucco Finish is mixed with mineral colors and prepared ingredients that make it water-resistive. The formula used is based upon methods used in producing the famous Old World stuccoes and one successfully used in America for 25 years.

CHARACTERISTICS—Oriental Exterior Finish sets slowly enough to permit proper finishing, thus avoiding unsightly streaks or shading. It is easy to achieve the smooth trowel, stipple, sponge, rough cast, period textures or spatter-dash finishes.

Oriental Stucco Finish increases in hardness, strength and water resistive qualities with age.

NOTE—*Oriental Exterior Stucco Finish may be applied over standard portland cement base coats.*

USE—Use for base and finish coats of exterior white or colored stucco of the highest quality.

PACKAGE—Oriental Exterior Base Coat is shipped in 100-lb. paper bags, and Oriental Exterior Finish Coat is shipped in 100-lb. paper bags. Order Finish Coat by the number on color cards or samples.

COVERING CAPACITY—

NOTE—*See "Covering Capacity," page 2.*

Base Coat—The approximate covering capacity of one ton of Oriental Exterior Stucco Base Coat (scratch and brown coats) on the basis of the average job, is as follows:

Plastering surface	Brick and clay tile	Metal lath	Wire fabric	Cement and cinder tile	Concrete
Sq. yd. per ton	20 to 25	25 to 30	22 to 28	20 to 22	20 to 25

Finish Coat—One ton of Oriental Exterior Stucco Finish, not to exceed ¼ in. in thickness, will cover from 150 to 200 sq. yds., depending on the texture selected.

*Trade-Mark

BB024 0984

PLASTERING BASES

PERFORATED ROCKLATH* · FIREPROOF LATH

Qualified for One Hour Fire Rating

DESCRIPTION—In Perforated Rocklath the United States Gypsum Company offers the building industry an improved gypsum lath.

In appearance this lath is like other bundled Rocklath except for the perforations which give it its distinctive qualities. These consist of perforations spaced at regular intervals throughout the surface of lath. These perforations provide "mechanical" keying of plaster in addition to the already superb bond of plaster to the surface of the lath.

The outstanding advantage of Perforated Rocklath is its added resistance to the progress of fire. It has all the advantages of Rocklath including maximum bond with plaster, economy, and non-combustibility. Its plus value is persistence of the bond between the lath and plaster for a longer time after having been attacked by fire.

ONE HOUR FIRE RATING—Tests run at the U. S. Bureau of Standards on a partition lathed in the approved manner with Perforated Rocklath and plastered with a full half inch of Gypsum Plaster demonstrated that this construction had sufficient fire resistance to stand up in a typical building fire test for one hour.

SIZES, WEIGHTS, ETC.—Perforated Rocklath is made ⅜ in. thick and in two sizes—16 x 32 in. and 16 x 48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32-in. boards contains 21⅓ sq. ft. and weighs about 30 lb.; each bundle of 48-in. boards contains 32 sq. ft. and weighs about 45 lb.

Either size provides the usual vertical joint break without cutting for framing members 16 inches o. c.

SPECIFICATIONS—See Master Specifications, pages 24 and 26 for application of Rocklath and plastering.

ROCKLATH

Rocklath is a solid sheet of gypsum, ⅜ in. thick, 16x32 in. and 16x48 in., encased in a tough fibrous covering, forming a uniform, strong, fireproof plaster base. The fibrous covering affords uniform suction, insuring a permanent, strong bond with gypsum plaster. Rocklath is easily and quickly nailed to wood studding, furring or joists. It saves plaster and protects the framework from the unnecessary absorption of moisture and the warping that may result from it. It does not stain plaster nor create lath marks.

Rocklath has the USG* patented rounded reinforced folded edge which gives maximum strength, protects the boards, and does not injure the hands.

SIZES, WEIGHTS, ETC.—Rocklath is made ⅜ in. thick and in two sizes—16x32 in. and 16x48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32 in. boards contains 21⅓ sq. ft. and weighs about 30 lbs.; each bundle of 48 in. boards contains 32 sq. ft. and weighs about 45 lbs.

Either size provides the usual vertical joint break without cutting for framing members 16 inches O. C.

SPECIFICATIONS—See Master Specifications, pages 24 and 26 for application of Rocklath and plastering.





*Registered Trade-Mark

BB024 0985

INSULATING ROCKLATH

Insulating Rocklath is standard ⅜ in. Rocklath upon the back of which is mounted a thin, smooth, bright sheet of aluminum foil. Applied with the foil side next to framing members and facing a dead air space, its insulating value is equal to or better than that of a half-inch thick fiber insulating lath.

The insulating efficiency of Insulating Rocklath is based on these facts. Heat passing through the walls or roof of a frame building (from inside out or from outside in) must pass across the air space between the studs and rafters. Approximately seventy-five per cent of such heat travel is by radiation. Insulating Rocklath resists the passage of radiant heat. In summer it resists heat by reflecting it back as a mirror reflects light. In winter time, when the heat flow is outward, Insulating Rocklath insulates by reducing the flow of heat by radiation.

The efficiency of bright surfaces, such as that on the back of Insulating Rocklath, to reflect radiant heat, or to refuse to emit heat by radiation has been conclusively proved in laboratory tests.

SIZES, WEIGHTS, ETC.—Same as Bundled Rocklath.

SPECIFICATIONS—See Master Specifications, pages 24 and 26, for application of Rocklath and plastering.

ADVANTAGES OF ROCKLATH

FIREPROOF—Does not burn or readily transmit heat. It interposes a continuous fireproof sheet of substantial thickness over the wood frame, thus tending to confine the fire to the room in which it originates. Does not disintegrate or corrode.

NO EXPANSION OR CONTRACTION—Does not expand, warp or buckle when wet plaster is applied, consequently will not shrink when plaster dries out.

EXCEPTIONALLY STRONG PLASTER BOND—The strong fiber covering with its uniform suction prevents the plaster from "slipping" when applied. Gypsum plaster is easily applied and bonds more firmly to Rocklath than to other types of lath. Because there is no sap in Rocklath, there is no consequent discoloration.

In U. S. Bureau of Standards' Tests a pull of six pounds per square inch was required to separate the plaster from the gypsum lath, providing a factor of safety of 144.

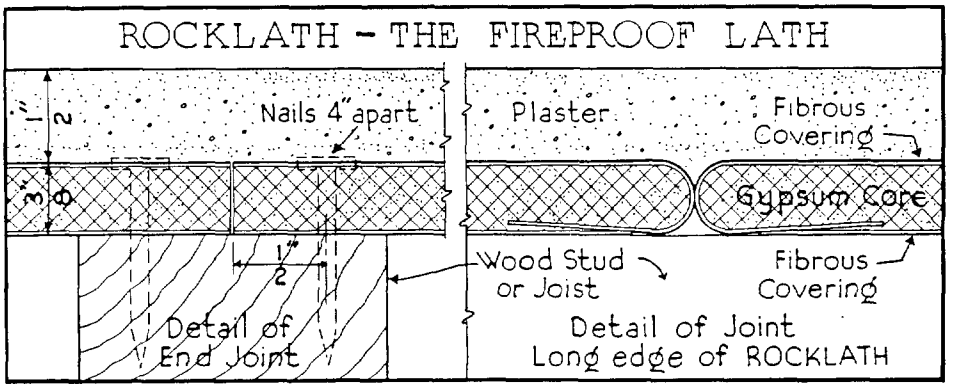
ECONOMY IN ERECTION—Compared with ordinary lath, Rocklath bundles are stacked and carried and the light weight units handled and erected quicker and with greater ease—there are no splinters. One piece of Rocklath equals 9 wood laths and requires 15 to 20 nails, depending on the size of the lath unit, instead of 27 or 36. One man will erect an average of from 125 to 150 sq. yds. a day compared with 100 to 115 sq. yds. with wood lath. It scores and cuts cleanly and easily without waste.

UNIFORM THICKNESS — Since no plaster is lost through droppings pushed through the lath and the ragged keying plaster behind the lath, the thickness is uniform throughout and approximately 20% less plaster is required.

ELIMINATES MOISTURE—Rocklath needs no wetting before plaster is applied. The continuous dry gypsum sheet, ⅜ in. thick, eliminates its proportionate part of the usual wet plaster moisture and at the same time seals off the applied plaster moisture from contact with the absorptive wood framing, preventing much of the usual swelling and subsequent shrinkage.

Since there is less moisture present, the plaster and building are dry and ready for the application of interior wood trim and decorating in the minimum time.

COMPARATIVE COST—The completed wall (Rocklath and plaster) costs less than metal lath and plaster, and about the same as wood lath and plaster.



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METAL LATH and ACCESSORIES

INTRODUCTION

That the United States Gypsum Company might furnish all materials required for lathing and plastering, it acquired the metal lath division of the Youngstown Pressed Steel Company and the North Western Expanded Metal Company, both for many years well and favorably known in the industry. As a result, those whom the company serves have the advantages of mixed car shipments and of centralized responsibility.

The high quality products of the two metal lath companies will be found in the Red Top Line of Metal Lath Products. In addition, the Red Top Line includes many special accessories. All brands and types of metal are distinctly tagged for identification.

NOTE—*For application, see Master Specifications, pages 23 and 24.*

RED TOP* DIAMOND MESH LATH (JUNIOR MESH)

Description—A small (5/16" x 9/16") diamond mesh expanded metal lath (patented). The stiff sheets are easy to erect.

The small mesh enables the lather to engage a greater number of strands in nailing or tying, yet the "diamonds" are amply large to freely admit the tie wire.

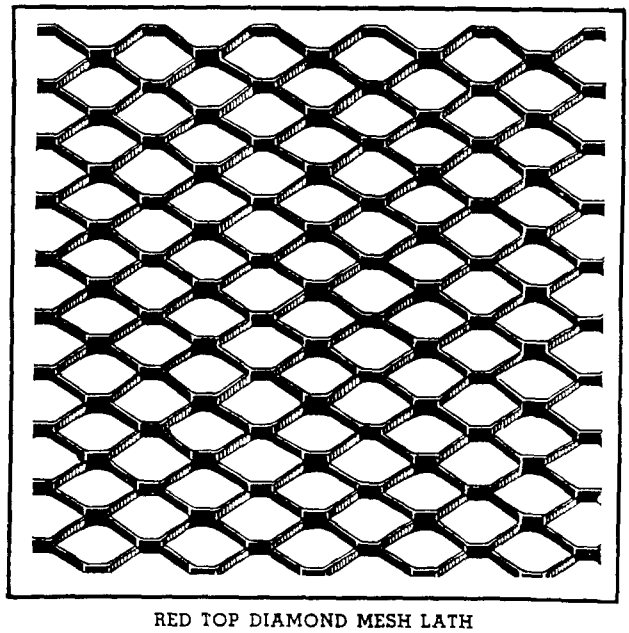
Mortar spreads easily on the smooth stiff surface, without waste and the small mesh affords a superbly keyed bond.

Weights—2.2, 2.5, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black in all weights. (2) Galvanized steel in 2.5 and 3.4 lb. weights. (3) Copper bearing steel (so tagged), painted black in 3.0 and 3.4 lb. weights. (4) Armco Ingot Iron (so tagged), painted black in 3.4 lb. weight.

Self-furring and Corrugated—All above weights and materials furnished in the Self-furring and Corrugated types.

Sheet Size—27 x 96 in., packed 10 sheets (20 sq. yds.) per bundle. Also size 24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle on order.



RED TOP DIAMOND MESH LATH

RED TOP 1/8 in. Z-RIB LATH (Flat Rib)

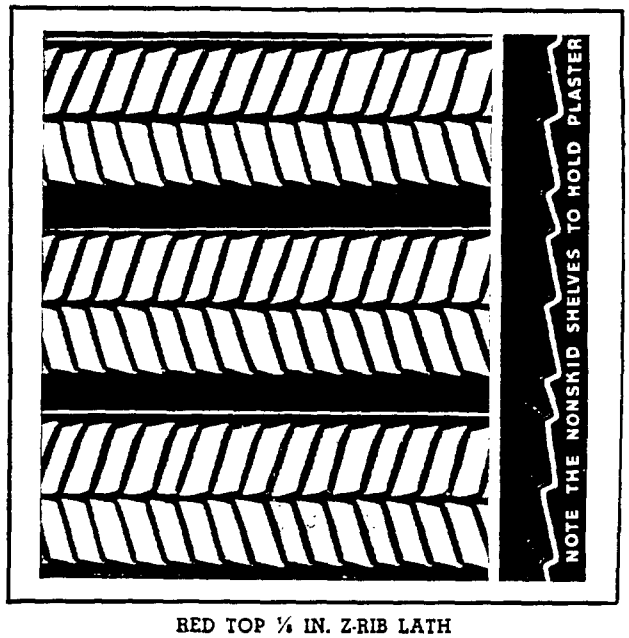
Description—A distinctive type of flat rib lath for nailing on wood construction or tying on metal furring.

The narrow "Z" ribs (1/8 in. deep, 1 1/2 in. o.c.) add exceptional rigidity and provide shelves which hold the wet plaster in place, both front and back, without waste.

Weights—2.75, 3.0, 3.4 lb. per sq. yd.

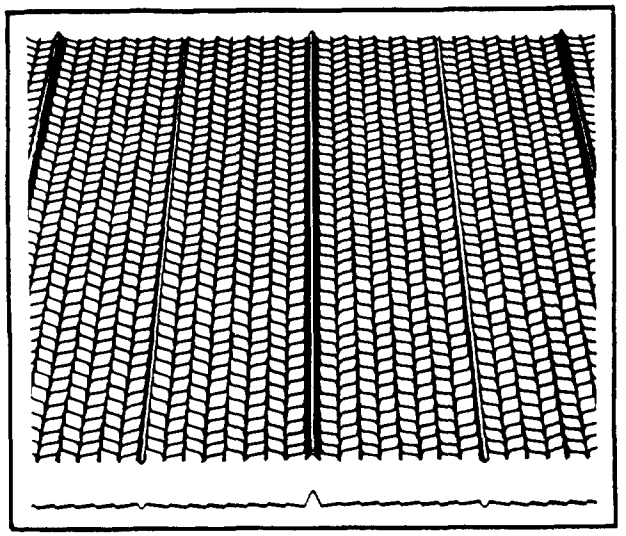
Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Galvanized steel in 3.4 lb. weight. (4) Armco Ingot Iron (so tagged) painted black, in 3.4 lb. weight on special order.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP 1/8 IN. Z-RIB LATH

*Trade-Mark



RED TOP ⅜ IN. RIB LATH

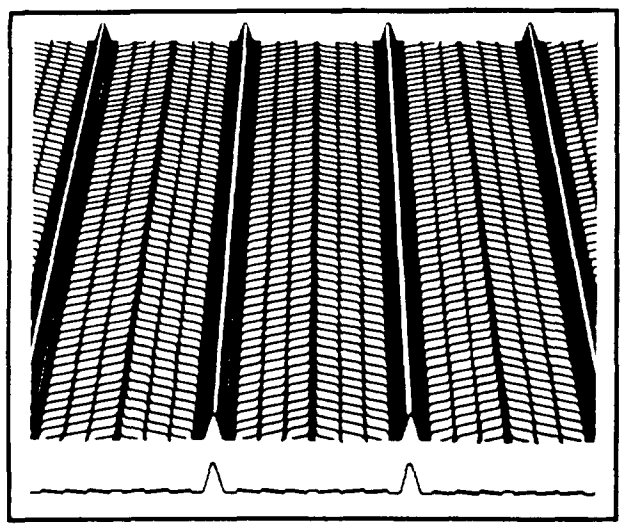
RED TOP ⅜ in. RIB LATH

Description—A very rigid reinforcement for use in floor and ceiling construction with steel joists, also ceilings under steel tile construction and where wide spacing of supports is desired. It provides for nested lap at the outside ribs with no lumps. Its use assures a permanent, economical and absolutely satisfactory result in every way.

Weights—3.0, 3.4, 4.0 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Armco Ingot Iron (so tagged), painted black, in 3.4 lb. weight. (4) Galvanized steel in 3.4 lb. weight.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP ¾ IN. RIB LATH

RED TOP ¾ in. RIB LATH

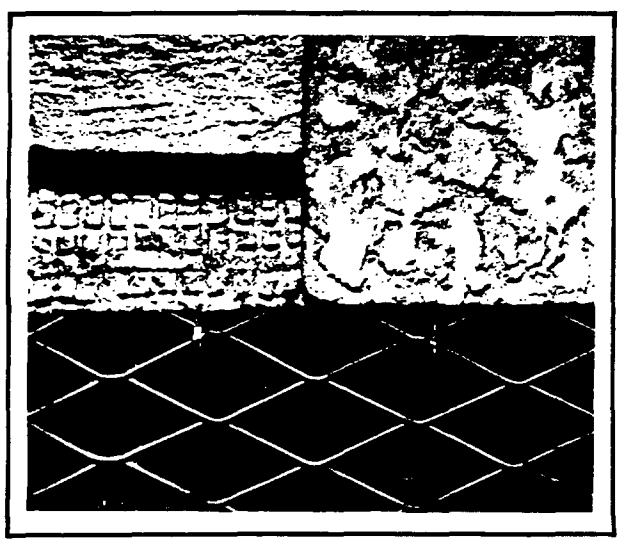
Description—The exceptional stiffness (ribs ¾ in., 4.8 in., o.c.) of this heavy weight, self-furring, expanded metal lath adapts it particularly for centering and reinforcement for concrete roofs and floors, and for plaster partitions and ceilings on extremely wide spacing of supports. Advantageously used on many forms of special work, such as column and beam protection, balconies, concrete tanks and fences, etc.

Weights—.50 (28 ga.), .60 (26 ga.), .75 (24 ga.) lb. per square foot.

> **Note**—*¾-in. Rib Lath is sold by the square foot. All other lath types sold by the square yard.*

Materials—(1) Open hearth steel, painted black. (2) Copper bearing steel (so tagged), painted black (on special order only).

Sheet Size—24 in. wide, 8, 10 and 12 ft. long (other lengths on special order).



RED TOP EXPANDED STUCCOMESH

RED TOP EXPANDED STUCCOMESH

Description—An expanded metal reinforcement for exterior stucco, cold-drawn from the highest grade of copper bearing steel into diamond mesh 1⅜ x 3⅛ in. wide. Its diagonal strands provide a correct distribution of steel to overcome the initial shrinkage, temperature changes and wind stresses, and a positive protection against unusual shocks. Apply with Red Top Economy Stucco Furring Nails.

Weights—1.8, 3.6 lb. per sq. yd.

Materials—Copper bearing steel (so tagged), painted black. (Plain steel and galvanized steel on order.)

Sheet Size—48 in. wide x 99 in. long. Packed 10 sheets (36⅔ square yards) to the bundle.

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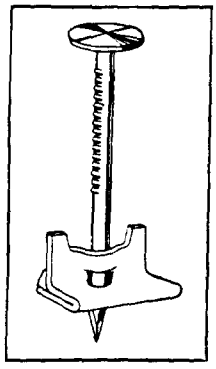
STUCCO FURRING NAILS



Description—A special nail for applying and furring Red Top Stuccomesh illustrated on page 10. It provides a furring device with sliding spacer and rib, which securely holds the reinforcing mesh free of the sheathing in the center of the stucco slab.

Size—1½-in. nail, ⅜-in. spacer.

Packed—Packed 850 nails per box, 10 boxes (8500 nails) per case. One box is estimated as sufficient for 50 sq. yds.

RED TOP BOSTWICK SHEETLATH

Description—A stiff, heavy weight sheet lath particularly adapted to reinforcement of plaster, cement reinforcement for tile, marble, etc.

Materials and Weights—Open hearth steel, painted black, 4.5 lb. per sq. yd. Galvanized steel, 5.2 lb. per sq. yd.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP CORNERITE

Description—A quality, factory formed product—Diamond Mesh Metal Lath Angle, used over wood lath, gypsum lath and masonry, at all angles where wall meets wall and walls meet ceiling. Furnished in painted or cut from galvanized steel.

Size and Weight—3 x 3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 125 lb. per 1000 ft.

RED TOP STRIPLATH

Description—Diamond Mesh Lath Strips. Used to cover sections of walls and ceilings where there are joints in the construction which might cause plaster cracks. Should be used around window and door frames when metal lath is not used for plaster base.

Size and Weight—3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 60 lb. per 1000 ft.

BASE SCREEDS and PICTURE MOULD

Description—Base screeds form a dividing line and screed between plaster walls and cement or composition base. A concealed picture mould and screed.

Material—Galvanized steel of 26 gauge.

TYPES and WEIGHTS

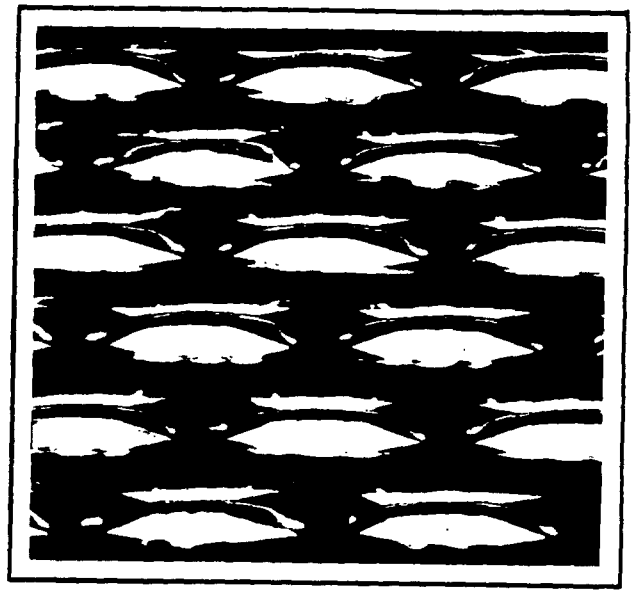
No. 3A—Expansion Flush Screed, $\frac{9}{16}$-in. ground; weight 230 lb. per 1000 lin. ft.

No. 6A—Plain Screed, ½-in. ground; weight 160 lb. per 1000 lin. ft., ⅝ and ¾-in. ground on order.)

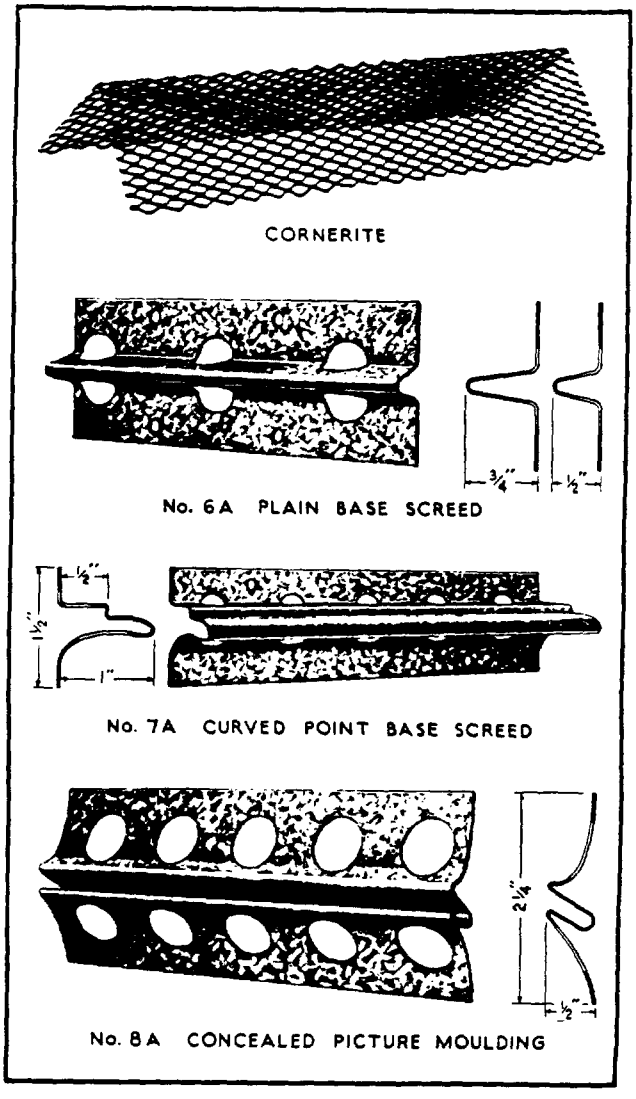
No. 7A—Curved Point Screed, ½-in. ground; weight 195 lb. per 1000 lin. ft.

No. 8A—Picture Mould; weight 260 lb. per 1000 lin. ft.

Packed—Packed 10 pieces per bundle.



RED TOP BOSTWICK SHEETLATH



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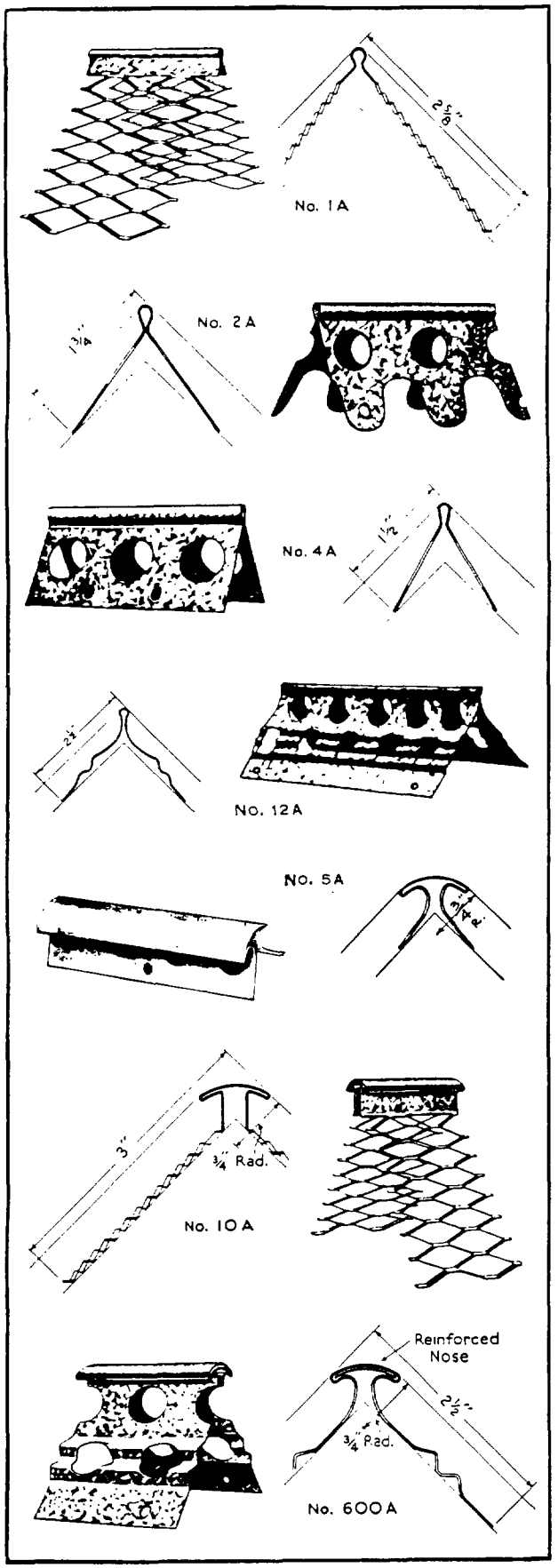


RED TOP CORNER BEADS

Description—A complete line of standard, high grade corner beads adapted to every construction need.

Material—Galvanized steel 26 gauge. 24-gauge material also furnished on special order.

SMALL NOSE CORNER BEADS TYPES and WEIGHTS

No. 1A—2½-in. Expansion Flange Type—250 lb. per 1000 lin. ft.

No. 2A—1¾-in. Short Scalloped Flange Type—220 lb. per 1000 lin. ft.

No. 4A—1½-in. Flange Standard Type—200 lb. per 1000 lin. ft.

No. 12A—2½-in. Wide Flange Type—350 lb. per 1000 lin. ft.

No. 16A—2½-in. Wide Scalloped Flange Type—320 lb. per 1000 lin. ft.

BULL NOSE CORNER BEADS TYPES and WEIGHTS

No. 5A—Short Flange ¾ in. Radius Bull Nose—245 lb. per 1000 lin. ft.

No. 10A—2½-in. Expansion Flange ¾ in. Radius Bull Nose—375 lb. per 1000 lin. ft.

No. 80A—2½-in. Expansion Flange 1½ in. Radius Bull Nose—1000 lb. per 1000 lin. ft.

No. 90A—2½-in. Expansion Flange 2 in. Radius Bull Nose—1050 lb. per 1000 lin. ft.

No. 600A—2½ in. Solid Flange ¾ in. Radius Bull Nose—reinforced nose—570 lb. per 1000 lin. ft.

No. 603A—2⅞ in. Solid Flange 1½ in. Radius Bull Nose—reinforced nose—900 lb. per 1000 lin. ft.

No. 14A—2½ in. Solid Flange ¾ in. Radius Bull Nose—non-reinforced nose—420 lb. per 1000 lin. ft.

Packed—Crated approximately 500 lineal feet per crate, or packed 10 pieces per bundle. Expansion Beads crated only.

NO. 9A HUMP CLIPS

A 3-inch clip attachment for short flange beads to facilitate erection. Made from blued steel. Used generally with No. 5A Bull Nose Bead. Packed in boxes of 1000 each weighing 25 pounds.

RED TOP METAL ARCHES

Description—A ready-formed plastering arch for doorways, etc. Eliminates two difficult operations—the construction of curved wooden forms and the forming of corner beads around these curves. They are made for standard 2 x 4-in. partitions. The various units have many obvious combination possibilities.

Manufactured under License of Merryweather Patent No. 1782147 granted Nov. 18, 1930.

TYPES and SIZES

No. 11—10-in. radius (true half circle) for 20-in. opening (21½-in. stud space).

No. 22—15¾-in. radius (true half circle) for 30-in. opening (33-in. stud space).

No. 33—Gothic design for 2 ft. 6 in. opening (33-in. stud space).

No. 44—Gothic design for 4 ft. 0 in. opening (51-in. stud space). (Can be easily cut down to fit a 42-in. doorway.)

No. 55—Elliptic design for 5 ft. 0 in. opening (63-in. stud space).

No. 66—Elliptic design for 6 ft. 0 in. opening (72-in. stud space).

Material—"Galvannealed" sheet steel.

Packed—In individual one-set cartons.

RED TOP COLD ROLLED CHANNELS

Description—A complete line of cold rolled channels for furring, suspended ceiling and partition construction. The legs and webs are true and have square corners. They can be readily spliced and formed.

Material—Open hearth steel.

Stock Lengths—14, 16, 18, 20 feet.

SIZES and WEIGHTS

Note—*Sold only in full, unbroken bundles.*

¾ in.—276 lb. per 1000 lin. ft.; 20 pieces to bundle.

1 in.—332 lb. per 1000 lin. ft.; 10 pieces to bundle.

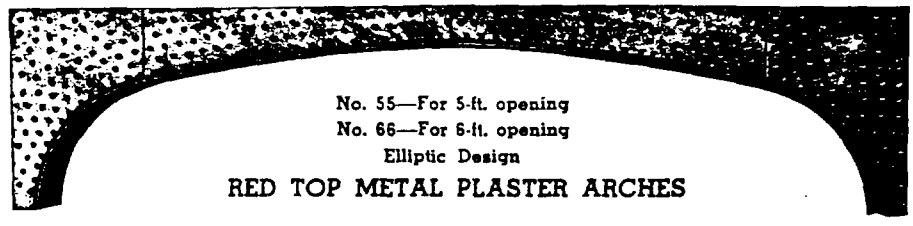
1½ in.—442 lb. per 1000 lin. ft.; 10 pieces to bundle.

2 in.—553 lb. per 1000 lin. ft.; 10 pieces to bundle.

Box Channels—$^{9}/_{16}$ x $^{11}/_{16}$ in., 276 lb. per 1000 lin. ft., packed 20 pieces to bundle. (16 and 20-ft. lengths only.)

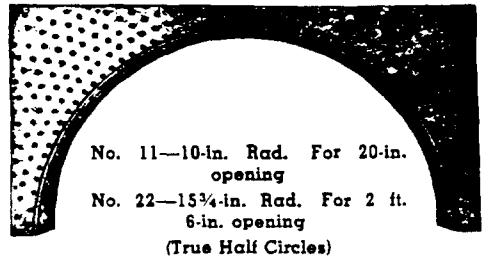
RED TOP LATHING SUNDRIES

General—The USG line of metal lathing specialties is most complete. Besides those here listed and illustrated, many other sundry items needed for lathing application can be furnished.

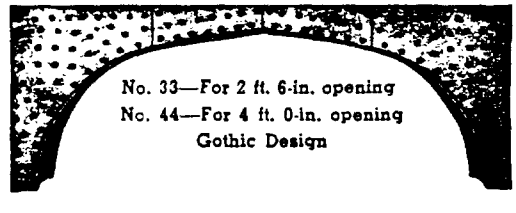


No. 55—For 5-ft. opening
No. 66—For 6-ft. opening
Elliptic Design

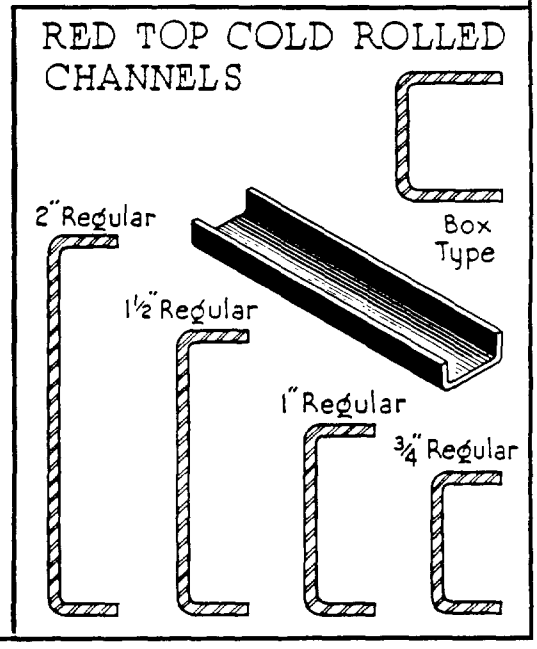
RED TOP METAL PLASTER ARCHES



No. 11—10-in. Rad. For 20-in. opening
No. 22—15¾-in. Rad. For 2 ft. 6-in. opening
(True Half Circles)



No. 33—For 2 ft. 6-in. opening
No. 44—For 4 ft. 0-in. opening
Gothic Design



BB024 0991

PLASTERING SYSTEMS

• • •

RESILIENT PLASTERING SYSTEMS

• • •

GENERAL DESCRIPTION

The USG Resilient Plastering Systems are an adaptation of the highly successful USG Sound Control System of resiliently connected walls, ceilings, and floors. This adaptation permits Rocklath (gypsum lath units) or metal lath and plaster to be connected to wood or steel framing or furring members of walls, partitions, and ceilings by means of spring clips which form a floating unit. There are two distinct types of the USG Resilient Plastering System—namely, that using Rocklath for a plaster base and that using Red Top Metal Lath as a plaster base as detailed on pages 15 and 17.

ADVANTAGES

REDUCES PLASTER CRACKS — Ordinary settlement and movement in the structural framing is not transmitted to the plastered walls and ceilings because of the free floating construction.

STOPS SOUND—Sound that strikes the plaster finish and sets it in vibration is largely dissipated by the springs supporting the lath. Instead of the construction vibrating as a unit and thus setting up sound waves on the opposite side of the partition or ceiling, the lath and plaster finish vibrates as a unit suspended on springs more or less separate from its supports.

A partition built according to this specification provides a sound reduction of approximately 51.9 decibels. (This is equal to or better than two 3-in. tile partitions with a 1-in. air space between—a construction often used for its soundproofing efficiency.)

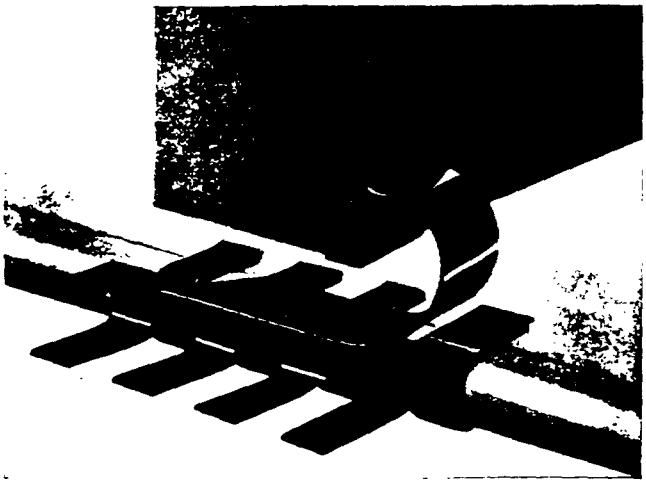
This system is probably even more useful on ceilings than walls. Its feature of resilient action is very effective against ceiling cracks. It also eliminates lath marks and provides efficient sound insulation between stories.

ELIMINATES STREAKING—The floating construction prevents the formation of lath and joist marks that otherwise develop due to differences in heat passage.

FIREPROOF—All materials used in this construction are fireproof. See pages 1 and 8 for fireproof qualities of gypsum and Rocklath. Metal lath is likewise a recognized fireproof plaster base.

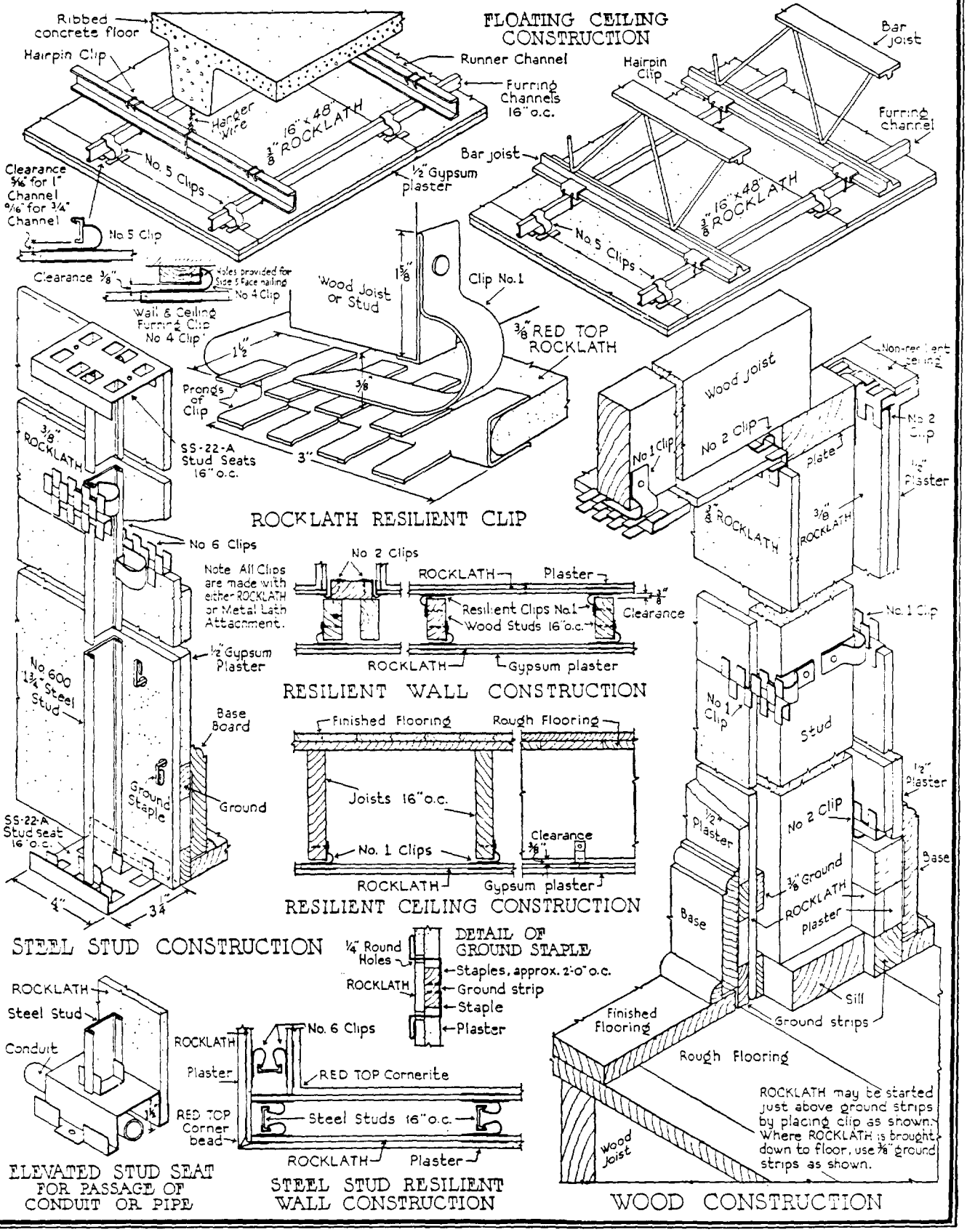
EASILY ERECTED—The system is erected by the lather. The clip is nailed to the wood framing with one Rocklath nail and the Rocklath is set in the clip. In metal lath construction, the lath is wired to pencil rods tied to the clip.

LOW IN COST—The cost of the materials is the same as standard Rocklath and Metal Lath plaster bases plus the addition of the clips, partly offset in the case of the Rocklath wood frame construction by the saving in cost of nails, since only about one-fourth as many nails are required as for the standard Rocklath application.





USG RESILIENT SYSTEM - ROCKLATH DETAILS



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USG ROCKLATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*The following provisions should be included as they apply under the proper headings of the specifications to be executed by others.*

(1a) CARPENTRY WORK—

(1a1) Furring—All masonry surfaces shall be furred.

(1a2) Framing—All studding, joists, and furring shall be set plumb, level, and true, spaced accurately 16 in. on centers.

(1a3) Grounds—(distance from face of framing member to face of finished plaster)—

1¼ in. for wood framing and steel furring.

1¼ in. for steel stud partitions.

1⅞ in. for suspended or bar joist ceilings using ¾ in. furring channels (1⅞ in. for 1 in. furring channels).

(1a4) Bucks—Furnish wood bucks of sizes detailed at all door openings rigidly attached to steel buck supports.

(1b) ELECTRICAL CONSTRUCTION—All outlet boxes, etc., shall be accurately set with their faces flush with the finished plaster as established in paragraph (1a3) above.

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Rocklath Resilient Plastering System.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top cold rolled channels, 1½ in. for runner channels and ¾ in. for cross and wall furring.

(3c) ROCKLATH METAL PARTITION STUDS—USG No. 600 1¾ in. Cold Rolled Channels furnished with USG Rocklath Resilient Plastering System Stud Seats No. SS-22A.

(3d) GYPSUM LATH—Rocklath, ⅜ in. thick, 16 in. wide, 32 or 48 in. long.

(3e) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Rocklath Resilient Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3f) CORNERITE—3 x 3-in. Cornerite for all internal angles except where Resilient Corner Clips are used.

(3g) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—Starting at the floor, ground strips shall be applied which also serve as a backing for wood trim. A No. 2 clip shall be nailed to the stud with clearance above the ground strip and the Rocklath inserted in the clip. Framing members are spaced 16 in. on center and a clip applied at each framing member. Next place No. 1 clips over the upper edge of the first course of lath units and attach the clips to the studs as above. Continue with successive courses of lath in similar manner, breaking end joints of lath units in alternate courses. A No. 2 Clip shall be used at the angle where the wall meets the ceiling.

(4b) STEEL STUD PARTITIONS—METAL FURRING—

(4b1) Attach metal stud seats to floors and ceilings spaced accurately 16 in. on centers and in line vertically. Set channel studs in seat clips plumb and true.

(4b2) Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced 16 in. o. c. with flange to wall. Secure furring channels to floors and ceilings in a substantial manner. Substantially secure channels to walls, every 3 ft. approximately with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(4b3) Starting at the floor hook No. 6B clips on each channel with the lower prongs of clips resting directly on the floor. In the upper prongs of these clips set the bottom of the first row of gypsum lath units. Place the next row of No. 6B clips over the upper edge of the first course of lath units, each attached to a metal stud. As located, attach ½ in. thick grounds with ground staples to the face of the lath. Continue with successive courses of lath units, breaking end joints in alternate courses securing each with No. 6B clips set over the upper edges each attached to the metal stud. Secure top of the last course of units at the ceiling in the stud seat clips.

(4c) STEEL FURRED OR SUSPENDED CEILINGS—

NOTE—*Construction of furred or suspended ceilings shall be as specified in (B2), pages 22, 23.*

Starting at one side of the ceiling hook a row of No. 5 clips on the flanges of the ¾-in. runner channels. Slip the edge of the first lath course into the clips thus provided. Hook the next row of No. 5 clips over the channel runners spaced 16 in. o. c. and then slip the clip over the outer edges of the lath. Continue successive courses of lath in similar manner, breaking end joints in alternate courses.

(4d) CORNERITE—Use Cornerite only in internal angles where Resilient Corner Clips are not used. Fasten Cornerite to Rocklath with staples placed along outer edge 12 in. on centers, staggered.

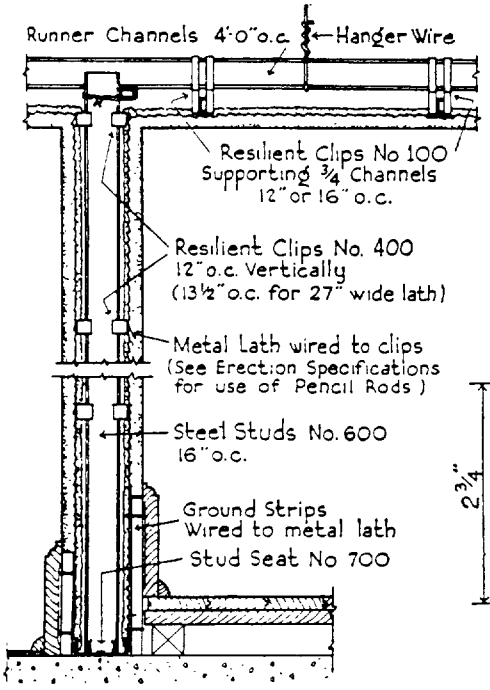
(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(5) PLASTERING

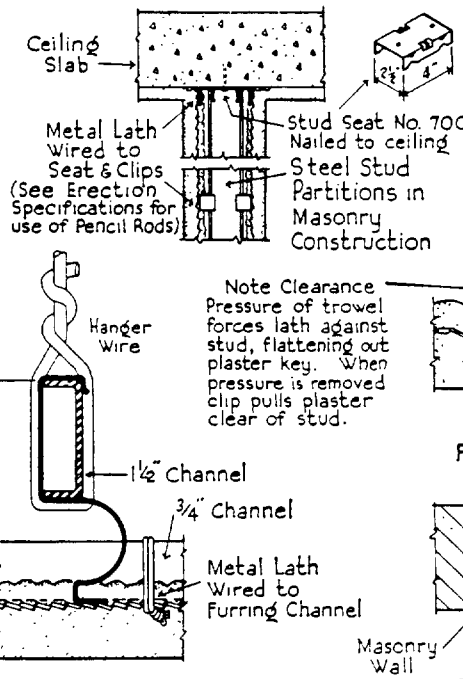
Do not wet lath. Apply plaster in three (3) coats (scratch, brown, and finish) to a full ½ in. thickness. Scratch coat shall be well scratched in to fill all interstices between lath units. Allow scratch coat to set and dry over night before brown coat is applied. (Do not "double back" with brown coat.)

NOTE—*Otherwise plastering shall be applied as specified in Master Specifications, pages 21 to 28 inclusive.*

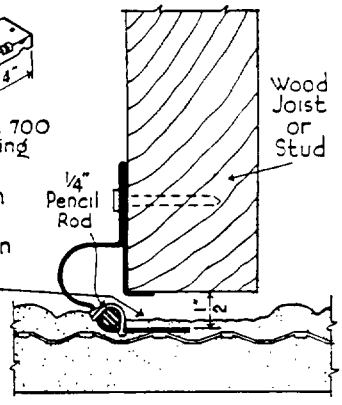
USG RESILIENT SYSTEM — METAL LATH DETAILS



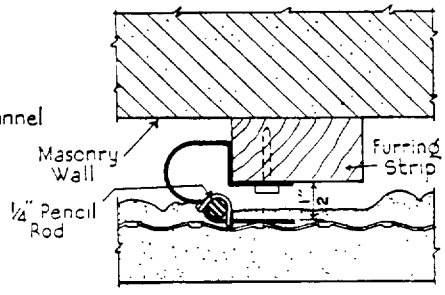
STEEL STUD PARTITION & SUSPENDED CEILING CONST.



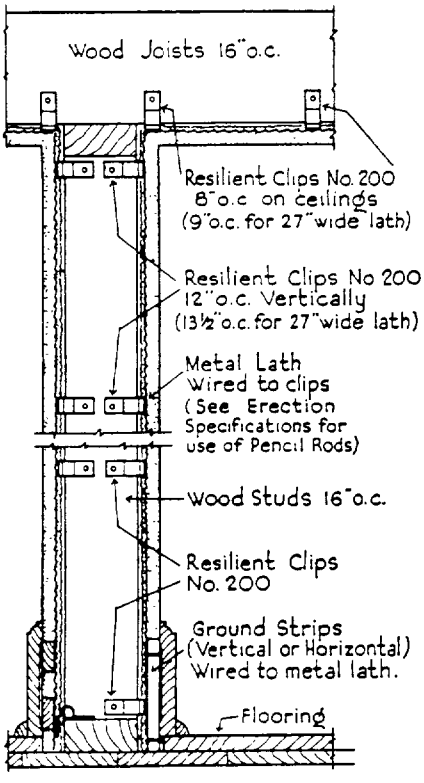
CLIP No. 100
For Suspended Ceilings



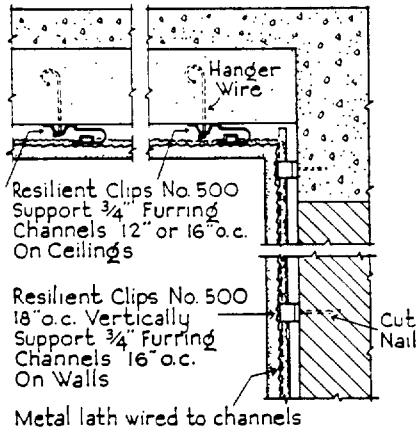
CLIP No. 200
For Wood Construction



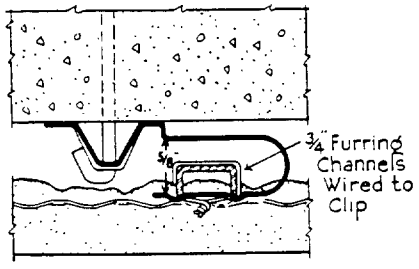
CLIP No. 300
For Wood Furring on Masonry Construction



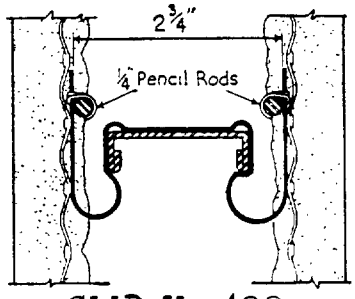
WOOD CONSTRUCTION



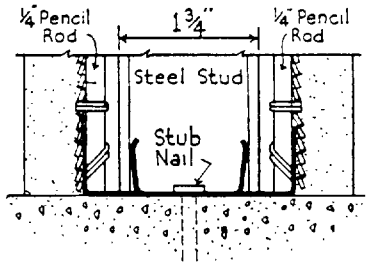
MASONRY CONSTRUCTION



CLIP No. 500
For Masonry Walls and Ceilings



CLIP No. 400
STEEL STUD No 600
For Steel Stud Partitions.



STUD SEAT No. 700
For Steel Stud Partitions

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USG METAL LATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Correlative Provisions given in paragraph 1, page 16, applying to Rocklath Resilient Systems, apply also to these specifications.*

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Resilient Plaster.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top **[cold] [hot]** rolled channels, 1½ in. for runner channels and **[¾ in.] [1 in.]** for cross and wall furring.

(3c) METAL PARTITION STUDS—Specially designed No. 600 1¾ in. cold rolled steel channel studs with USG Resilient Plastering System stud seats.

(3d) PENCIL RODS—Pencil Rods shall be ¼ in. in diameter.

NOTE—*Pencil Rods are recommended. See detail page 17.*

(3e) METAL LATH—[Specify brand, material and finish] lath; **(?)** lb. for horizontal positions and **(?)** lb. for vertical position.

NOTE—*See (Cld), page 23. Red Top Junior Diamond mesh Lath is recommended—2.5 lb. per sq. yd. for walls and 3.0 lb. per sq. yd. for ceilings of wood construction and 12 in. spacing of furring channels. For 16-in. ceiling furring channel spacing, use 3.4 lb. weight. If Red Top ⅛-in. Z-Rib Lath (Flat Rib) or ⅜-in. Rib Lath are selected, a weight of 3.0 lb. per sq. yd. will be adequate for both walls and ceilings.*

(3f) WIRE—Wire shall be No. 18 ga. Galvanized Annealed Tie wire.

(3g) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Resilient Steel Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3h) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—[Wood studs] [wall furring] [and] [joists] shall be spaced 16 in. O.C.

(4a1) Starting at the juncture of the wall and ceiling, attach No. 200 clips with 4d common nails through clip nail holes, spacing clips **[16 in. O.C.] [12 in. O.C.] [along studs] [wall furring] [and] [12 in. O.C.] [8 in. O.C.] [along joists].**

NOTE—*For spacings, see Note B under (4a2).*

(4a2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue, fitted into the radius at the shoulder.

NOTE A—*Pencil Rods may, optionally, be run at right angles to the direction of the framing members, wired to the out side face of the clip tongue.*

NOTE B—*Pencil Rods may be eliminated by spacing clips 12 in. O. C. along studs (13½ in. for 27 in. wide lath) and 8 in. O. C. along joists (9 in. for 27 in. wide lath) and attach lath directly to the clips.*

(4a3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].** Lath at junction shall be bent over 6 in. from ceiling on to wall.

(4b) STEEL STUD PARTITIONS—No. 600 Channel Studs shall first be set in No. 700 Stud Seats at top and bottom and then set in position spaced 16 in O.C. Stud Seats shall then be securely nailed to floor and ceiling.

(4b1) Starting at the juncture of the wall and ceiling, attach No. 400 clips to Channel Studs, spaced **[16 in. O. C.] [12 in. O.C.]** by springing the clips (deep throat side first) over the channel flanges.

(4b2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue.

NOTE—*See Note B under (4a2) above.*

(4b3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].**

(4c) MASONRY WALLS, CONCRETE JOISTS, ETC.—No. 500 clips shall be securely attached to **[brick and clay tile walls with 10d cut nails] [Pyrobar walls with 2 in. staples] [concrete slabs or joists by No. 9 ga. wire or a 10d hook nail which has been placed in position before concrete is poured and extending 1¼ in. below the surface].**

(4c1) Spacing of clips along **[walls] [flat concrete slabs]** shall be **[24 in. O.C. for 12 in.] [18 in. O.C. for 16 in.] [15 in. O.C. for 19 in.]** furring channel spacing.

(4c2) Spacing of clips on concrete joists spaced 24 to 26½ in. O.C. shall be 12 in. O.C. along joists.

(4c3) Furring channels, set flat (not on edge) with flanges in contact with the lath, shall be attached to the **[inside] [outside]** face of the clip tongue with a double strand of wire.

(4c4) Metal lath shall be wired to furring channels at 8 in. intervals.

(4d) SUSPENDED CEILINGS—Hanger rods (¼, ⅜, or ½ in. in diameter) set in concrete forms and cast into concrete shall be spaced 4 ft. O.C. in each direction extending **[give depth of suspended ceiling]** plus 12 in. for tying. 1½-in. runner channels shall be attached to hanger rods.

(4d1) Running at right angles to runner channels, furring channels spaced **[12 in.] [16 in.]** O.C. shall be attached by slipping No. 100 clips over the furring channels and hooking the upper portions of the clips over the runner channels.

(4d2) Metal lath shall be wired to furring channels at 8 in. intervals.

(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(4f) PLASTERING—

NOTE—*Follow standard specification for plastering over metal lath as given in Master Specification, pages 25 to 28 inclusive. Plaster shall be full ¾ in. from back face of lath to face of plaster.*

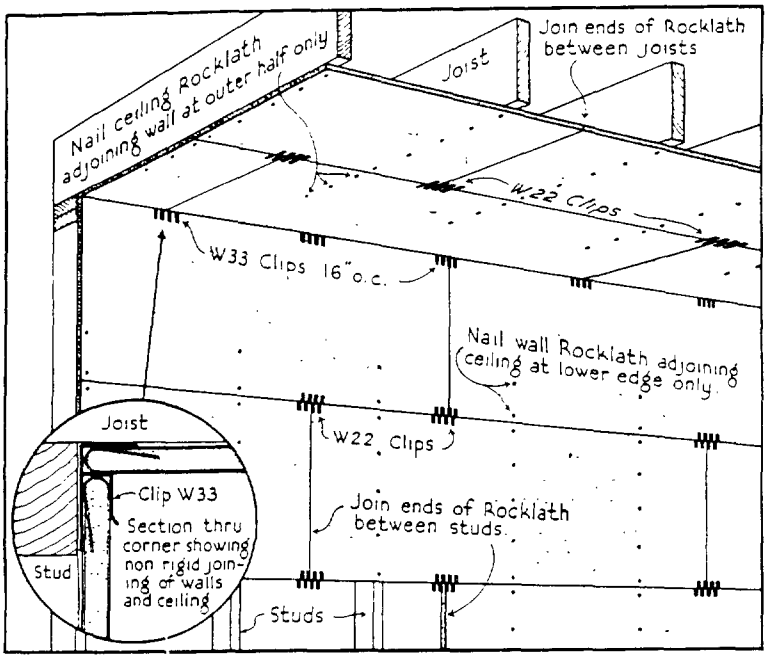
United States U.S. Gypsum Company

USG BRIDJOINT PLASTERING SYSTEM

Rocklath units are nailed to the framing members in the usual way, but are placed so the end joints come between the framing members, NOT on them. The W-22 clip is used to reinforce these end joints.

WALLS AND CEILINGS—The Rocklath Units are nailed to the framing members, but so placed that end joints come between the studs. For ease of application, put a W-22 clip onto the lower right-hand corner of each Rocklath unit before setting it in place. This insures proper placing of the clip, and eliminates the chance of omitting it.

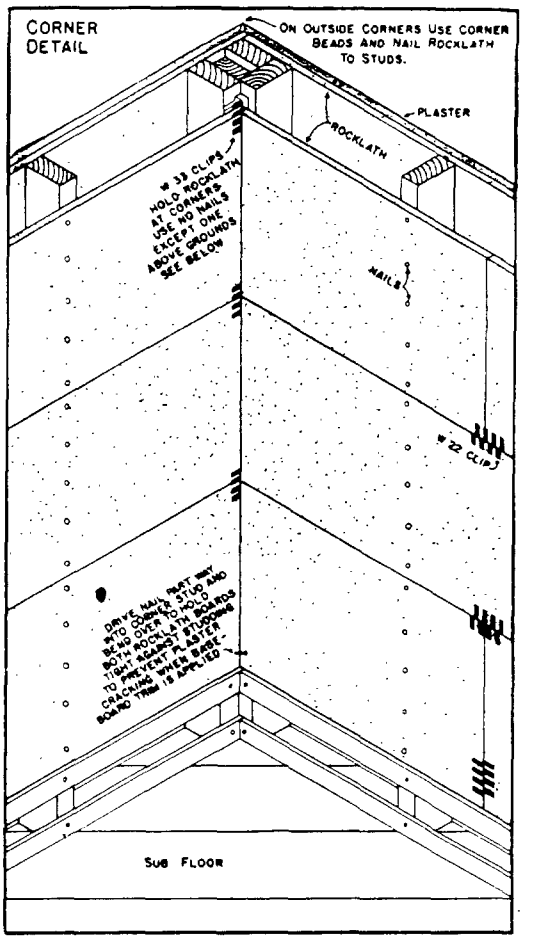
CORNERS—The proper application of the Bridjoint System is shown in the illustrations. To allow free movement of wood framing, Rocklath units forming the ceiling angles should be nailed only from the center of the lath to the edge away from the ceiling angle. W-33 clips are used to tie wall and ceiling lath together. Space these clips on 16-inch centers. Vertical corners are treated in much the same way as the ceiling corners. The W-33 clip is used to hold the ends of the Rocklath and reinforce the corner.



ESTIMATING NUMBER OF CLIPS REQUIRED

W-22—Three clips per square yard.

W-33—Multiply lineal feet of ceiling and corner angles by 0.75.



USG FREFLOTE BRIDJOINT SYSTEM

Similar to the Bridjoint system described above, except that Rocklath is attached to framing members with semi-rigid Freflote Bridjoint clips No. 60, 61, or 62 instead of with nails. Plaster cracking is further minimized because the stress and strain caused by framing movements is partially absorbed by the clips and not entirely transferred to the plaster. Rocklath end joints fall between framing members and are reinforced with W-22 clips. Freflote Bridjoint clips Nos. 60 and 61 used in wood frame construction (No. 61 eliminates "joist marks") and No. 62 used to attach Rocklath to ¾ in. steel channel construction.

USG FREFLOTE PLASTERING SYSTEM

The only difference between this system and the Freflote Bridjoint System described above is that the W-22 clip used to reinforce Rocklath end joints is eliminated. In this system Rocklath is applied so that end joints occur on framing members and the Freflote clips No. 63, No. 64, and No. 65 are large enough to provide end joint reinforcement as well as attachment to the framing members. Clips No. 63 and No. 64 used in wood frame construction (No. 64 clip eliminates "joist marks") and No. 62 clip used in ¾ in. steel channel construction.

NOTE—*The company will furnish on request bulletins giving complete information on these systems. Each system is sold only as a unit, including USG Clips, USG Rocklath, and USG Red Top Plaster.*

For maximum performance in reducing plaster cracking and sound transmission and eliminating plaster discoloration, the RESILIENT ROCKLATH PLASTERING SYSTEM is recommended.

*Registered Trade-Mark

BB024 0997

TRUSSTEEL* · STUDS

• • •

A MODERN, FIREPROOF SYSTEM OF PARTITION CONSTRUCTION

EASY TO ERECT—Because of practical design, light weight, and the adjustable feature, Trussteel-Hollow Stud Partitions are easily and quickly erected. One workman can erect the system. The studs are placed in runner tracks which are attached to floor and ceiling. They are secured at proper spacing with wire, looped in holes provided on the flanges. Metal lath attachment is standard practice.

ADJUSTABLE—Trussteel-Studs are adjustable to variance in ceiling heights. The sliding extension permits an upward extension of two inches or a reduction from the stock length of six inches. A ten-foot stud, therefore, is adjustable from nine feet, six inches to ten feet, two inches. This adjustable feature which becomes an integral part of a Trussteel-Stud is a time and labor saver.

RIGID—The unique truss design provides a bracing effect which adds rigidity and strength that enables the partition to resist impacts, vibration, etc. When properly erected and plastered, a Trussteel-Partition should have strength equal to a tile or precast block partition of equal thickness.

EASY TO PLASTER—Because Trussteel-Studs provide a rigid support for the metal lath plaster base, the procedure of plastering in no way differs from a regular metal lath job. The type of lath to be used depends upon the stud spacing.

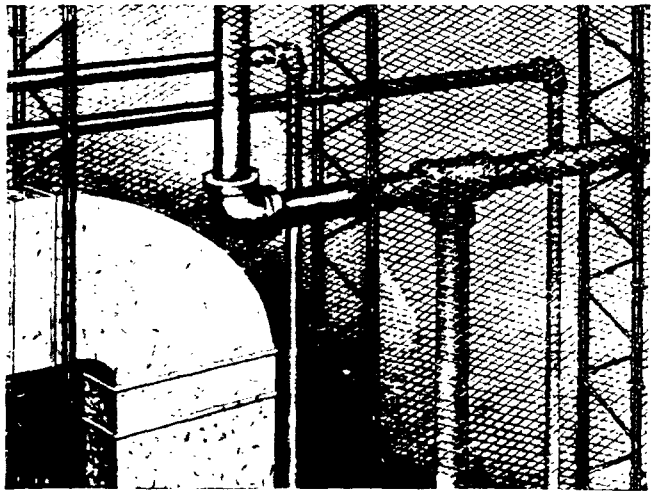
CONCEALS VENTILATING DUCTS, PIPES, ETC.—The fact that Trussteel-Studs provide a hollow partition, ventilating ducts, pipes, conduits, etc. can be concealed by running them through the studs in the ample space provided between the cross supports and the uprights. Since the cross-bracings are twelve inches on center, ventilating ducts can be run horizontally, as well as vertically, through the partition. Two-inch pipes can be run through a 3¼-inch Trussteel-Stud.

STANDARD SIZES—Lengths—From 6 feet 6 inches to 20 feet inclusive, in increments of 6 inches. Lengths of from 14 to 20 feet are supplied in two sections, complete with splicing feature. These are the stock or "fixed" lengths. The adjustable feature on each of these lengths permits adjustment from 6 inches under to 2 inches over the stock length purchased.

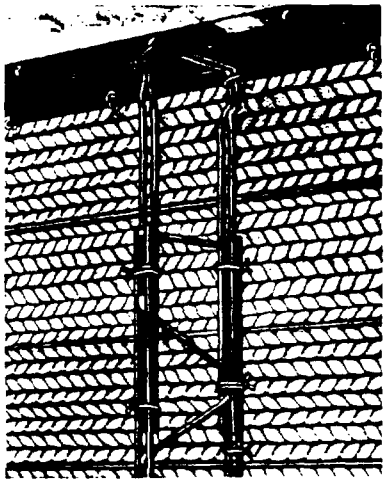
Widths—2, 3, 3¼, 4, and 6 inches. Five popular sizes to meet average requirements. Packed in bundles of convenient size to fit order requirements.

RUNNER TRACKS—Made in eight-foot, two-inch lengths. Packed in bundles of convenient size to fit order requirements.

For further information, write for Catalog ML-41.



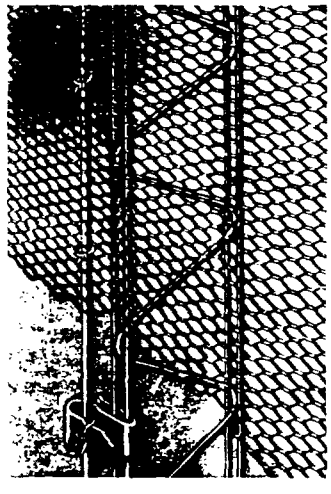
A six-inch Trussteel-Stud Partition allows ample room for concealing 4 in. by 10 in. duct work, both vertical and horizontal runs. In addition, there is unrestricted space for piping.



Extension feature at top of stud permits adjustment to various lengths.



This entire partition was erected by one lather (3¼-in. studs and ⅜-in. lath).



Note clip used with steel studs in resilient system. See page 18.

*Trade-Mark

BB024 0998

MASTER SPECIFICATIONS

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INTERIOR LATHING and PLASTERING

• • •

PREFACE

SPECIFICATION FORM—The form of this specification is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously do not apply to every building. In formulating the "Interior Lathing and Plastering Specifications" for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

LOCAL ORDINANCES—Correlate these specifications with the requirements of Local Ordinances and Trade Customs relating to this division of the work.

ALTERATIONS and ADDITIONS—These specifications cover new work only. For additions and alterations add such clauses covering repairs and replacements and the joining of old and new work as may be required.

ADVISORY SERVICE—The technical staff of the United States Gypsum Company is at all times accessible for advice and recommendations in the formulating of the specification for Interior Lathing and Plastering. Special data, the result of much extended research work, relating to the selection and application of Interior Plastering and "Explanations of Job Conditions which Affect Plastering" will be furnished on request.

NOTES—Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS or PHRASES—Wherever words of phrases occur in the body of the specification paragraph printed in bold face type and enclosed in brackets, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "specify" occurs enclosed in brackets, thus **[specify]**, add the particular word or clause applicable, optional with the specification writer.

(A) GENERAL PROVISIONS

NOTE—*For complete plastering systems see USG Resilient and Bridjoint Plastering Systems pages 14 to 19 inclusive.*

NOTE—*For Sabinite Acoustical Plaster, see the* United States Gypsum Company's *complete section including "Sound Control Service."*

(A1) GENERAL CONDITIONS

The general conditions governing the General Contract apply to the work under this division.

NOTE—*The American Institute of Architects' Standard forms of General Conditions is advocated.*

(A2) WORK INCLUDED

(A2a) The work included under this heading shall be the following:

(A2b) All metal suspended or furred ceilings.

(A2c) All metal stud partitions.

(A2d) All metal wall furring.

(A2e) All miscellaneous metal furring.

(A2f) All lathing.

(A2g) All plastering.

(A3) GENERAL SCOPE

NOTE—*List and locate either in schedules on plans or here portions of the building to be finished, the base to receive plaster and here include sufficient data to insure accuracy in estimates.*

(A3a) All plastering, unless otherwise specially noted, shall be three (3) coat work—scratch, brown, and finish coats.

(A3b) The following require no plaster **[list and locate].**

(A3c) The following require but **[one (1)] [two (2)]** coats of plaster **[list and locate].**

(A3d) Ceilings noted as furred **[on plans] [in schedules]** are furred with **[metal] [wood].**

(A3e) All supports for lath are spaced 16 in. on centers.

(A3f) All exterior walls are furred with **[specify].**

(A3g) Exterior walls are not furred. Plaster shall be applied directly on the **[specify].**

(A3h) Partitions are of **[specify].**

(A3i) Walls back of finished tile work shall be lathed only. No plaster shall be applied.

(A3j) Omit all plaster on interior masonry walls and **[hollow tile] [Pyrobar]** partitions back of marble work.

(A3k) All exterior masonry walls, not furred, shall receive one coat of plaster back of marble work.

(A3l) Omit the finish coat of plaster on all stud walls back of **[marble work] [blackboards] [specify].**

(A3m) Omit the finish coat of plaster back of all **[wood wainscots] [specify]** and similar solid trim.

(A3n) **[Specify]** shafts shall be plastered full height.

(A3o) All chases in unfurred masonry walls which are to be plastered shall be lathed with metal lath. Lap the masonry at least 3 in. and secure at masonry joints. Wide chases (over 16 in.) shall be furred to receive lath.

(A4) SCAFFOLDING

(A4a) This contractor shall provide and erect all scaffolding, staging, etc., necessary for the proper execution of his work.

(A4b) He shall co-operate with other trades to the extent that erection of scaffolding shall not conflict with the execution of other work immediately preceding or carried on, without undue conflict, simultaneously with the lathing and plastering.

(A4c) If, after due authority has been granted to erect scaffolding, it is necessary to remove parts thereof for the accommodation of others, demolition and re-erection shall be done only after allocation of cost has been equitably adjusted.

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(A5) HEAT and VENTILATION

(A5a) Adequate temporary heat and ventilation will be provided by others for the proper execution of work under this contract.

(A5b) This contractor shall provide salamanders, fuel and attendance and shall maintain without fire hazard adequate heat and ventilation for the proper execution of work under this contract.

(A6) CLOSURES

(A6a) Provide temporary cloth closures for all exterior openings during plastering.

(A6b) During the summer months exterior openings shall be screened to prevent plaster from drying out before it has set.

(A7) PROTECTION

(A7a) Adequately protect from damage and plaster droppings all finish of the building.

(A7b) Adequately protect the building with layers of heavy waterproof paper from damage by water at sources, gauging barrels and mixing boxes.

(A8) DAMAGE

Breakage of glass or other damage to the building or equipment through accident or carelessness incident to work under this contract shall be satisfactorily repaired or made good by replacement at this contractor's expense.

(A9) CLEANING

(A9a) At completion, remove all rubbish, plaster droppings, etc., and leave the building broom clean.

(A9b) This contractor shall remove all plaster from glass and other finish and leave in the condition found.

(A10) CUTTING and PATCHING

After the erection of finish by others, this contractor shall, when called upon, cut out where required, patch and point up all finished plaster work and leave the entire work in perfect condition.

(A11) SAMPLE PANELS

This contractor shall furnish and erect, where directed for the approval of the architect, sample panels of one square yard area each, to illustrate each type of finish required under this contract. The finished work shall equal in all respects the approved panels.

(A12) CONCRETE SURFACES

NOTE—*Concrete surfaces to receive plaster must not be smooth. Use rough form boards. Avoid dressed or oiled boards.*

(A12a) Concrete surfaces must be dry and free from dust, oils and efflorescence.

(A12b) Burn off all oil or grease from surface with a torch.

(A12c) Remove efflorescence with a wire brush and wash with a one (1) to five (5) solution of muriatic acid and water. Thoroughly wash off acid with clean water.

(A12d) Surfaces too smooth to receive plaster shall be thoroughly hacked.

(A12e) Hacking will be done by others.

(A13) GROUNDS

All lathing and plastering shall be laid to not less than the following grounds:

¾ in. for **[¼ in. gypsum lath] [wood lath] [expanded metal lath] [⅞ in. for ⅜ in. gypsum lath]; [1 in. for ½ in. insulating board lath]:** ⅝ in. for **[brick] [or] [clay tile] [½ in. for Pyrobar].**

NOTE—*See pages 15 to 18 inc. for Resilient System Grounds.*

(A14) GUARANTY

(A14a) This contractor shall guarantee all work and materials under this contract for a period of **[specify]** from the date of completion and acceptance.

(A14b) Any defects attributable to faulty workmanship or material furnished under this contract shall be made good at this contractor's expense.

(A14c) This shall include the cost of repairs or replacement of any decorating or other finish damaged by the defects.

(A15) WORKMANSHIP

All work shall be executed by skilled workmen in a manner to satisfactorily fulfill the provisions of these specifications.

(A16) EXAMINATION

(A16a) All construction to receive lathing and plastering is presumed to be substantial, sound, level, plumb and true.

(A16b) This contractor shall examine all construction, supports and base to receive lathing and plastering and shall report to the architect in writing any defects which will deleteriously affect work under this contract.

(A16c) Failure to so report defects for correction or replacement prior to execution of the work under this contract will be construed as acceptance of the construction and shall not relieve the contractor from obligation under his guaranty.

(B) METAL FURRING · METAL STUD PARTITIONS

(B1) MATERIALS

NOTE—*See page 13.*

(B1a) METAL FURRING—[Specify sizes] Red Top Cold Rolled Channels.

(B1b) METAL PARTITION STUDS—[Specify sizes] Red Top Cold Rolled Channels.

(B2) FURRED or SUSPENDED CEILINGS

(B2a) GENERAL—Where so indicated on plans **[or listed in schedules]** ceilings shall be furred or suspended with metal furring members.

(B2b) HANGERS—Hangers shall be placed not to exceed 4 ft. center to center in either direction.

The minimum size for hangers shall be No. 8 galvanized wire, 1 x ⅛-in. flats or ⅜-in. round mild steel rods.

Upper ends of hangers of wire, rods, or flats, shall be of sufficient length to wrap around beams or provide a suitable anchorage in the concrete or tile.

Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured.

When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear through tile and secured on upper side by steel rod or toggle bolt.

(B2c) RUNNER CHANNELS—Runner Channels shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. weighing not less than 456 lb. per thousand lineal feet.

Lower end of wire hangers shall be secured to runner channels by three twists; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than 3/8-in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

(B2d) FURRING CHANNELS—Furring Channels, spaced **[specify]** shall not be less than 3/4 in. with a minimum weight of 276 lb. per thousand lineal feet; they shall be erected at right angles to the runner channels and shall be securely saddle tied to them by at least three strands of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

NOTE—*Maximum spacing should be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; 12 in. for 2.75 lb.; 16 in. for 3.0 lb.; 19 in. for 3.4 lb. 3/8 in. Flat Rib Lath; 16 in. for 2.5 lb.; 24 in. for 3.0 lb.; 31½ in. for 3.4 lb. or 4.0 lb. 3/8 in. Rib Lath*

(B3) METAL STUD PARTITIONS

(B3a) SOLID PARTITIONS—Metal studs for solid partitions shall be not less than 3/4-in. cold or hot rolled channels weighing not less than 276 lb. per thousand lineal feet, and spacing of studs shall conform with the requirements for the weight of lath specified.

(B3b) HOLLOW PARTITIONS—Metal studs for hollow partitions shall be constructed of a double row of 3/4-in. channels weighing not less than 276 lb. per thousand lineal feet and spacing of studs shall conform with the requirements for the weight of lath specified.

NOTE—*Also see Trussteel Studs, page 20.*

(B3c) GENERAL—

(B3c1) Studs shall be secured in position by inserting ends in holes punched 3/4 in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals.

(B3c2) Studs shall be secured on wood floors by wire tying to nails driven 1 in. into floors and projecting at least 1 in. above.

(B3c3) Where metal lath ceilings are used a small hole shall be made in the ceiling lath and the end of the channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(B3c4) Splicing of studs shall be made by lapping channels not less than 8 in. with the flanges interlocked and tied.

(B3c5) Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(B3c6) In every case one channel shall be set next to wood buck at each side of openings and double wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

(B4) METAL WALL FURRING

Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with 3/4-in. channels spaced **[specify]** on centers with flange to wall. Furring channels shall be substantially secured to floors and ceilings and shall be substantially secured to walls with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(B5) MISCELLANEOUS METAL FURRING

Provide 3/4-in. channel furring for all **[false beams] [ornamental plaster cornices] [stair soffits] [specify]**, etc., as shown on the plans and as detailed. Furring shall be set **[specify]** o.c. and rigidly secured to the building construction.

(C) LATHING

(C1) MATERIALS

(C1a) WOOD LATH—No. 1 **[white pine] [cypress] [spruce]** free from knots, sap and bark.

(C1b) GYPSUM LATH—[Perforated] [Insulating] Rocklath 3/8 in. thick, 16 x 32 in. and 16 x 48 in.

NOTE—*For Rocklath, see pages 7 and 8.*

(C1c) INSULATING LATH—Weatherwood Insulating Lath **[½ in.] [1 in.]** thick, 18 x 48 in.

(C1d) METAL LATH—[Specify brand, material and finish] lath; —— lb. for horizontal positions and —— lb. for vertical positions.

NOTE—*See pages 9, 10 and 11. Select and specify weight for both horizontal and vertical positions.*

NOTE—*Minimum weights should be as follows:*

(a) Expanded Metal Lath—

(a1) (For vertical positions, partitions, etc., attached to metal supports) *12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively except for solid partitions where 2.2 lath may be used on 12 in. spacings and 3.4 lath on 16 in. spacing. For nailed-on partitions, maximum spacing shall be 16 in. for all flat laths, minimum weight to be 2.5 lb.*

(a2) (For tied-on ceilings attached to metal supports) *maximum spacing shall be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; for nailed-on ceilings maximum spacing shall be 16 in. for these laths.*

(b) ⅛ in. Flat Rib Lath—

(b1) (For nailed or tied-on partitions and furring)

For supports spaced not to exceed 16 in. o.c. . . . 2.75 lb
For supports spaced not to exceed 19 in. o.c. . . . 3.0 lb.

(b2) (For nailed or tied-on ceilings)

For supports spaced not to exceed 12 in. o.c. . . . 2.75 lb.
For supports spaced not to exceed 16 in. o.c . . 3.0 lb.
For supports spaced not to exceed 19 in. o.c. . . . 3.4 lb.

(c) ⅜ in. Rib Lath—

(c1) (For nailed or tied-on partitions and furring)

For supports spaced not to exceed 19 in. o.c . 2.5 lb.
For supports spaced not to exceed 24 in. o.c. . . 3.0 lb.
For supports spaced not to exceed 31½ in. o.c . 3.4 lb.

(c2) (For nailed or tied-on ceilings)

For supports spaced not to exceed 19 in. o.c . . . 3.0 lb.
For supports spaced not to exceed 24 in. o.c. . . . 3.4 lb.
For supports spaced not to exceed 31½ in. o.c. . . 4.0 lb.

(C1e) CORNERITE—Red Top Cornerite, 3 x 3 x 96 in. with special selvage edge.

(C2) APPLICATION of WOOD LATH

(C2a) All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [specify]** shall be lathed with wood lath. Lath shall be spaced not less than ¼ in. nor more than 3/8 in. apart and shall be secured to each bearing with standard wood shingle nails, two (2) to each end and one (1) to intermediate bearings.

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Lathing shall break joints every eight laths, all put on horizontally. Under no circumstances shall lathing step and form a long, straight, vertical joint nor be put on vertically to finish cut at angles or corners; neither shall any lath run through and behind studding from one room to another. All corners must be made solid before lath is applied.

(C2b) All re-entrant angles shall be reinforced over the wood lath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C3) APPLICATION of ROCKLATH

All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [furred or suspended ceiling] [specify]** shall be lathed with **[Rocklath] [Perforated Rocklath] [Insulating Rocklath].**

(C3a) Cutting shall be done by scoring with a sharp hatchet or knife and then breaking down and up over a straight edge.

Nails shall be 1-⅛ in., 13 gauge, blued, 7/16 in. flat head, smooth diamond point.

Rocklath boards shall be applied with the long dimension at right angles to the framing members, butted, with broken joints in each course. Stagger joints between walls and ceilings so that the vertical joints on wall will not meet ceiling joints.

Fit Rocklath tight together at all re-entrant angles and corners. Cut accurately and fit Rocklath neatly around all electric outlet boxes, etc.

Space nails approximately 4 in. apart using 5 nails per stud. First nail ½ in. from edge, nailing to center support first, then outer edges. Each nailing edge must have a firm bearing on studs, joists and furring. Drive nails home.

(C3b) All re-entrant angles shall be reinforced over the Rocklath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C4) APPLICATION of METAL LATH

(C4a) GENERAL—All **[specify location]** shall be lathed with metal lath.

(C4b) ATTACHMENT TO WOOD SUPPORTS—Metal lath shall be attached to wood studs and joists by not less than 4d and 6d nails, respectively, driven to a penetration of not less than ⅞ in. and 1 in., respectively, and spaced not to exceed 6 in. o.c. or by clips or devices with equivalent penetration and holding power. There shall be one tie on side laps, half way between supports.

(C4c) ATTACHMENT TO METAL SUPPORTS—Metal lath shall be wired to metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galvanized soft annealed wire and tie shall always occur where sides of sheets lap at channels. There shall be one tie on side laps half way between channels.

(C4d) ERECTION OF METAL LATH—

(C4d1) Metal lath shall be erected with the long dimensions of sheet across the supports.

(C4d2) Lath shall be first applied to the ceilings and the sheets carried down 6 in. onto the walls and partitions. If metal lath is not used on the ceilings, the lathing shall start at the top of the wall and be bent and carried up 6 in. onto the ceiling joists so that no joints occur at juncture of ceiling and walls; and on walls, all lath shall be started one framing member away from corner and bent into the corner and carried onto the abutting wall so as to avoid a joint at juncture of walls. Where ⅜-in. ribbed lath is used on ceilings or walls it shall be butted into all joints, and strips of flat lath shall be bent into the shape of an "L", 3 in. on each side, and securely wired along each edge in all corners. Strips shall not be fastened at the corner, but only along each edge of the sheet.

(C4d3) Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to the supports. Fastenings shall be so placed that they shall occur where sides of sheets lap at supports.

(C4d4) Expanded metal lath shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

(C4d5) Rib lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

(D) PLASTERING ACCESSORIES

(D1) MATERIALS

(D1a) METAL PLASTER ARCHES—Red Top Metal Plaster Arches No. **[s] [specify].**

NOTE—*See page 13.*

(D1b) CORNER BEADS—Red Top Corner Bead No. **[specify].**

(D1c) BASE SCREEDS—Red Top Base Screed No. **[specify].**

(D1d) METAL PICTURE MOULD—Red Top Picture Mould No. **[specify].**

(D1e) METAL EXPANSION CASING—Red Top Metal Casing No. **[specify].**

(D2) APPLICATION of METAL PLASTER ARCHES

Secure metal plaster arches in position over the lath, set accurately in accordance with the details. Corner beads on vertical jambs shall join arch beads without break at the juncture.

(D3) APPLICATION of CORNER BEADS

All corners **[both vertical and horizontal]** shall be protected with corner beads for their full height **[or length].**

NOTE—*If there are exceptions, so note.*

Corner beads shall be rigidly and substantially secured, accurately set, plumb, true and straight.

(D4) APPLICATION of METAL BASE SCREEDS

The following rooms shall have base screeds:

NOTE—*List and locate here or in schedules on plans.*

Screeds shall be substantially secured, accurately set, straight and true to line and parallel with the finished floor line.

(D5) APPLICATION of METAL PICTURE MOULDS

The following rooms shall have metal picture moulds:

NOTE—*List and locate here or in schedules on plans.*

Picture moulds shall be substantially secured, accurately set, straight and true to line and parallel with the ceiling line.

(D6) APPLICATION of METAL EXPANSION CASINGS

The following openings shall have metal expansion casings:

NOTE—*List and locate here or in schedules on plans.*

Expansion casings shall be accurately set in line with jambs. Secure with screws, locking clips and stamped casing miters.

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(E) PLASTERING • BASE COATS
(Scratch and Brown Coats—Two Coats)

(E1) MATERIALS and MIXING

NOTE—*See pages 3 and 4.*

NOTE—*Select type best adapted.*

(E1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3 ft. x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each mix. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in mixing water.

Do not mix more material than can be applied in one (1) hour nor one mix with another. Never retemper plaster after it has commenced to set.

All material except sand shall be as manufactured by the United States Gypsum Company.

(E1b) WATER—Water shall be clean and free from impurities.

(E1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(E1d) [Specify brand] CEMENT PLASTER (UNSANDED)—

(E1d1) For scratch coat on **[gypsum] [wood] [metal]** lath, mix two (2) parts by weight of dry sand with one (1) part of plaster.

(E1d2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile]**, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d3) For second or brown coat, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d4) Do not mix sand and plaster until ready to add water.

(E1d5) First put in raised end of the mixing box a layer of sand, then one of plaster. Hoe dry from one end of box to other and then back again, working sand and plaster thoroughly together to a uniform color. Put water in the low end of box; hoe plaster into the water, mixing thoroughly.

(E1e) [Specify brand] WOOD FIBER PLASTER—

(E1e1) Use neat for scratch coat on **[gypsum] [wood] [metal]** lath.

(E1e2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile]**, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

(E1e3) For second or brown coat, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

NOTE—*In (E1e2) and (E1e3) above, it is customary to use the "sanded mix". In some territories, due to sand conditions, the "neat" material is advocated. Consult the USG representative for best local practice.*

(E1e4) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water and allow to soak from 10 to 15 minutes. Then mix to proper consistency.

(E1f) [Specify brand] PREPARED PLASTER (SANDED)—

(E1f1) Add nothing to the material but water.

(E1f2) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water, mixing thoroughly to the proper consistency for application.

(E1g) BONDCRETE (FOR ALL CONCRETE SURFACES)—

(E1g1) For both scratch and brown coats.

(E1g2) Add nothing to the material but water.

(E1g3) Put the plaster in the upper end of mixing box and water in lower end. Hoe plaster into water. Allow the material to soak from 10 to 15 minutes and mix thoroughly.

(E2) APPLICATION of BASE COATS—GENERAL

Keep plaster from freezing for 24 hours after application.

In hot, dry weather screen all openings while plastering to prevent material from drying out before it has set. If plaster should dry out (showing soft, white spots or areas) sprinkle these portions so affected with clean water from a spray pump or a brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

For grounds see "Grounds," par. (A13), page 22. Unless specially otherwise noted, all plaster shall be applied in three (3) coats—scratch, brown and finish. Scratch coat shall be applied and the surface well scratched. When scratch coat is set and nearly dry, follow with brown coat. Brown coat shall be brought to a true level plane with rod and darby flush with the grounds, ready to receive finish coat. Angles and corners shall be left straight, true and plumb.

(E3) APPLICATION • Cement and Prepared Plasters

(E3a) For best results over all bases, let scratch coat set before applying brown coat.

(E3b) ON WOOD LATH—Soak lath thoroughly the day before and again an hour or so before applying the plaster. Apply in two (2) coats, scratch and brown, the scratch with sufficient pressure to obtain a good key. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3c) ON GYPSUM LATH and FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats, scratch and brown. Scratch coat shall be well scratched in to fill all interstices between lath boards. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3d) ON METAL LATH—Apply in two (2) coats, scratch and brown. Scratch coat shall be applied lightly covering the lath and filling meshes. Scratch first coat and allow to set before applying brown coat. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3e) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Soak brick or tile wall thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats, scratch and brown, and fill out to grounds. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E4) APPLICATION • Wood Fiber Plaster

NOTE—*Neat Wood Fiber Plaster may be troweled down to a smooth finish omitting further finish coat.*

(E4a) ON WOOD LATH—Soak lath. Apply in two (2) coats. Apply scratch coat with sufficient pressure to obtain a good key and scratch the surface. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4b) ON GYPSUM LATH AND FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats. Scratch coat shall be well scratched in to fill interstices between lath units. Scratch first coat and allow to set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4c) ON METAL LATH—Apply in two (2) coats. Scratch coat shall be applied a little stiff, covering lath and filling meshes. Scratch coat must be set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4d) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Except over dampproof paint.] [Soak brick or tile walls thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E5) APPLICATION • Bondcrete for Concrete

NOTE—*See paragraph (A12), page 22.*

NOTE—*Bondcrete may be troweled down to a smooth finish omitting further finish coat. If desired, so specify.*

(E5a) Apply in two (2) coats in just sufficient thickness to obtain an even surface (not to exceed 3/8 inch on ceilings and 5/8 inch on side walls). Before the plaster begins to set, broom the surface to receive the finish coat.

NOTE—*Use for all large areas of concrete.*

(F) PLASTERING • FINISH COATS

(F1) MATERIALS and MIXING

NOTE—*Select type best adapted.*

(F1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each gauging. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in gauging water.

Do not mix more material than can be applied in one (1) hour nor one gauging with another. Never retemper plaster after it has commenced to set.

All material except sand for job sanded sand float finish shall be as manufactured by the United States Gypsum Company.

(F1b) WATER—Water shall be clean, free from alkali and impurities.

(F1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(F1d) [Specify brand] PREPARED GYPSUM FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe plaster into water (using approximately one (1) part of water to two (2) parts of plaster measured by volume). Allow the material to soak and draw in the water without hoeing for at least 20 minutes. When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Bring the mix finally to a very thin consistency. Transport in buckets.

(F1e) [Specify brand] FINISHING LIME and [Specify brand] GAUGING PLASTER—

NOTE—*See pages 4 and 5.*

(F1e1) ***(Preparing Hydrated Lime Putty)*** Fill water-tight box one-half to two-thirds full of clean water.

Add dry lime gradually, sifting through a ¼-in. mesh screen, until all water is dried up.

Allow lime to soak overnight to develop full plasticity.

Do not hoe or screen after soaking unless lime is dirty or lumpy.

(F1e2) ***(Preparing Quicklime Putty)*** Add water and lime gradually while mixing, constantly agitating the mixture to prevent burning of the unslaked portion. Mix to a thin consistency and screen. Run into ageing box.

(F1e3) Mix by measure one (1) part of dry gauging plaster with three (3) parts of lime putty, as follows:

For each 12-quart bucket (approximately 37 lb.) of lime putty, add 2 quarts of water in the ring on the board. Sift in enough dry gauging plaster to absorb the water; then blend plaster and lime putty together thoroughly.

NOTE—*The above proportions are equal to 1 part of dry gauging plaster to 2 parts of dry lime hydrate by weight.*

(F1f) [Specify brand] PREPARED GYPSUM SAND FLOAT FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe finish into water.

Allow the material to soak and draw in the water without hoeing for at least 10 minutes.

When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Transport in buckets.

(F1g) [Specify brand] SAND FLOAT FINISH (JOB SANDED)—

NOTE—*See page 3.*

Screen sand through a No. 12 screen. Mix dry to a uniform color one (1) part of Cement Plaster to one (1) part of dry sand by weight (equal to from 4 to 6 shovels of sand to each 100-lb. bag). Put dry mix in upper end of box and water in lower end.

Hoe material into water and mix thoroughly to a smooth, creamy consistency. Keep tools and box clean.

(F1h) ORIENTAL INTERIOR (COLORED FLOAT OR TEXTURE FINISH)—

NOTE—*See page 4.*

(F1h1) Color **[s]** shall be **[specify] [as subsequently determined upon].**

(F1h2) Put the Oriental Interior in upper end of box and water in lower end. Hoe material into water, using approximately one (1) part of water to two (2) parts of Oriental Interior, by volume.

Let Oriental Interior soak overnight. After soaking, mix thoroughly and carefully hoe the mix to a smooth, creamy consistency. Transport in buckets.

(F1i) RED TOP KEENE'S CEMENT—

NOTE—*See page 5.*

NOTE—*For preparation of lime putty, see (F1e).*

(F1i1) [Box Mixed for Extremely Hard Trowel Finish]—Use Standard Keene's Cement neat. Add water only. Mix thoroughly and bring to a working consistency. Transport in buckets.

(F1i2) [Box Mixed for Hard Trowel Finish]—Use 25 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i3) [Box Mixed for Medium Hard Trowel Finish]—Use 80 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i4) [Board Mixed Quick Troweling Keene's]—Use not more than 60 lb. of lime putty to 100 lb. of Quick Troweling Keene's Cement. Place 2 ten-quart pails of lime putty in a ring on the board; add 4½ to 5 gallons of water; sift in 100 lb. of Quick Troweling Keene's Cement; allow to soak 15 minutes; blend plaster and putty together thoroughly. To assist in application over an extremely dry base, fine marble or white silica sand may be added in the proportion of 20 lb. to 100 lb. of Keene's Cement.

(F1i5) [Sand Float Finish]—Mix lime putty, clean sand, and Standard Keene's Cement in the proportions of 100 lb. of lime putty, 400 lb. of sand and 100 lb. of Keene's Cement. **(Add USG Limeproof Colors as subsequently selected.)**

(F2) APPLICATION OF FINISH COAT • GENERAL

Keep plaster from freezing for 24 hours after application.

Do not apply finish coat on a base coat which contains frost.

In hot, dry weather screen all openings while plastering to prevent material drying out before it has set. If plaster should dry out (showing soft, white spots) sprinkle portions so affected with clean water with a spray pump or brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

Angles and corners shall be left straight, true and plumb.

(F3) APPLICATION • Trowel Finish

(F3a) LOCATION—The following shall receive trowel finish:

NOTE—*List and locate either in schedules on plans or here.*

(F3b) LIME AND GAUGING PLASTER—Apply in two (2) coats over a fairly dry gypsum plaster base. Scratch in a thin coat, then go over a second time filling imperfections and cat faces. Trowel to a smooth finish applying water with a damp brush. Troweling should be completed before the finish has set. In cold damp weather, provide heat and ventilation until the finish is dry.

(F3c) PREPARED GYPSUM FINISH—Base coat must be dry and roughened before finish is applied. If suction is too great, sprinkle lightly with clean water from a clean brush.

Apply in three (3) coats. The first time over, put on sufficient material to cover the surface completely, using material as thin as possible and grinding it thoroughly into the base coat. Allow this to draw a few moments to avoid blistering.

The second time over, lay the material on perfectly level.

The third time make the material as thin as can be handled on the hawk and fill in cat faces and imperfections. After it has drawn a few moments, trowel to a smooth surface, applying water with a damp brush. Do not drench with water (drenching will kill the face of the material). Work top and bottom of the wall at the same time to avoid joinings.

(F4) APPLICATION • Sand Float Finish

(F4a) LOCATION—The following shall receive sand float finish:

NOTE—*List and locate either in schedules on plans or here.*

(F4b) PREPARED SAND FLOAT FINISH OR CEMENT PLASTER SANDED—Apply sand float finish after base coat has set firm and hard, but while still green.

"Grind in" a thin coat first; then "come back" with the final coat, laying it on in an even surface. Then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work after the material begins to or has set.

Work top and bottom of the wall at the same time to avoid joinings.

(F5) APPLICATION • Oriental Interior (Colored Finish Coat)

(F5a) LOCATION—The following shall receive Oriental Interior Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F5b) GENERAL—Brown coat should be broomed or left rough under darby to insure a good bond. Remove all loose or projecting particles from base coat which may show through finish coat.

Apply over a gypsum plaster base which has set firm and hard. On all types of masonry construction, such as gypsum tile,

clay tile, etc., the plaster base must be thoroughly dry. On lathing bases, such as gypsum, fiber insulating, wood, or metal lath, Oriental Interior may be applied after the plaster base is 90% dry. If the suction in the base coat is too great to permit ease of application, wet down lightly and uniformly with clean water.

To avoid cutting re-entrant angles, use a trowel with edges rounded to a curve the circumference of a dime.

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work material after it begins to or has set.

Work top and bottom of wall at same time to avoid joinings.

Proper drying conditions must be maintained in order to protect the color. During the late fall, winter and early spring months, the slow-drying periods of the year, artificial heat and proper ventilation must be arranged for. Failure to provide this protection may result in color difficulties.

(F5c) FLOAT FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level and then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

(F5d) TEXTURE FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level, working it into the desired texture.

NOTE—*The* United States Gypsum Company *will furnish on application a Special Bulletin covering the execution of textured finishes.*

(F5e) TILE OR MASONRY EFFECTS—Mark off with a straight-edge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6) APPLICATION • Keene's Cement Finish

(F6a) LOCATION—The following shall receive Keene's Cement Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F6b) GENERAL—TROWEL FINISH—Apply in two (2) coats over a dry gypsum plaster base. Scratch in a thin coat well ground into the base; then apply a second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

(F6c) PANELS—Keene's Cement wainscots shall be divided into even vertical panels with V-joints while the material is "green"—preferably from 4 to 5 hours after application. First rake out plaster base at joints for a depth of ¼ and ½ in. wide, laid to a straight-edge, plumb and true—clean of loose particles. Apply Keene's Cement as above and form clean cut, even vertical V-joints at panel divisions.

(F6d) TILE EFFECTS—Mark off with a straightedge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6e) POLISHED SURFACES—After the cement is dry, polish with a cloth to a highly polished surface.

(F6f) SAND FINISH—Apply in two (2) coats over a fairly dry gypsum plaster base, scratching in a thin coat and doubling back with the second coat. Finish to desired texture, using water sparingly.

(G) ORNAMENTAL PLASTER WORK

(G1) LOCATION

The following rooms require ornamental plaster in accordance with details.

NOTE—*List and locate either in schedules on plans or here.*

(G2) MODELS

(G2a) All ornamental work shall be executed from models.

(G2b) Models shall be furnished at the contractor's expense for all ornamental work. These shall be made by a skilled modeler **[selected] [approved]** by the architect, preferably in **[name place]** so that they may be under the direct supervision of the architect while being prepared. Models must be submitted for approval while in the clay.

(G2c) The contractor shall allow the sum of **[specify]** to cover the cost of models prepared under the direction of the architect, delivered f.o.b. cars **[specify]**.

(G2d) The owner will furnish, without cost to the contractor, models prepared under the direction of the architect, delivered f.o.b. cars **[specify]**.

(G3) MATERIALS and MIXING

NOTE—*See page 6.*

(G3a) [For Run Work] [specify brand] GAUGING PLASTER.

Add 50% lime putty to the gauging plaster to give the added plasticity required for run work. Mix thoroughly and bring to a working consistency.

(G3b) [For Cast Work] [specify brand] MOULDING PLASTER.

Add water only; mix thoroughly and bring to the proper pouring consistency.

NOTE—*See also Keene's Casting, page 5.*

(G4) APPLICATION • GENERAL

(G4a) All curved work shall be **[run] [or] [cast]** to true radial lines.

(G4b) Leave all ornamental plaster work in perfect condition for decorating, true and smooth, with surfaces and intersections rubbed down with fine sandpaper, if necessary.

(G5) RUN WORK

Furnish clean cut, accurate templates made in strict accordance with the architect's **[full size]** details.

Run all mouldings true with perfect arrises and miters.

(G6) CAST WORK

Ornamental work shall be cast hollow or solid as best suited to conditions, thoroughly strengthened with fiber and braced where necessary.

All cast work shall be set accurately—true, plumb and straight.

If necessary, members shall be substantially fastened around furring; where nails are used, they shall be galvanized.

United States U.S. Gypsum Company

Master Specifications

APPLICATION OF SHEETROCK

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Words or clauses within brackets in bold face type are selective. Select and include only those clauses which apply to the particular work.*

NOTE—*Perf-A-Tape Joint System must be specified if Sheetrock is applied at right angles to framing members to give the necessary strength needed in the absence of headers.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sheetrock.*

(2) FRAMING

(2a) All framing members shall be spaced accurately 16 in. on centers and shall be set straight and true. Bowed or warped framing members shall be replaced or straightened.

(2b) Headers (2 in. x 4 in.) shall be provided wherever necessary so that all four Sheetrock edges can be solidly nailed (see note below).

NOTE—***If Perf-A-Tape Reinforced Joint System is used,*** *⅜ in. or ½ in. Recessed Edge Sheetrock may be applied horizontally (long Sheetrock edges at right angles to framing members). If horizontal application is specified, paragraph (2b) specifying headers can be eliminated.*

Quarter Inch Sheetrock should always be applied vertically (long edges parallel to framing members) and headers should always be provided for as under paragraph (2b) above.

(3) MATERIALS

(3a) **WALLBOARD**—Sheetrock as manufactured by the United States Gypsum Company shall be **(¼ in. thick) (⅜ in. thick—Recessed Edge) (½ in. thick—Recessed Edge)** bundled. Lengths shall be full height from floor to ceiling on walls and shall be such as will make possible a minimum number of end joints on ceiling.

NOTE—*If Perf-A-Tape Joint System is specified with ¼ in. or ½ in. Recessed Edge Sheetrock, the Sheetrock may be applied horizontally as explained under "NOTE" above. If so specified, change (3a) to read "Lengths shall be such as will make possible a minimum number of end joints on both walls and ceilings.*

(3b) **NAILS**—Nails shall be **(4d for ¼ in. and ⅜ in. thick Sheetrock) (5d for ½ in. thick Sheetrock)** flat headed cement coated nails.

(3c) JOINT TREATMENT

(3c1) Perf-A-Tape Joint System (For use exclusively with Sheetrock).

(3c2) Metal A Joint System (For use exclusively with Sheetrock).

(3c3) Sheetrock Finisher (Cement only—no reinforcing tape).

(4) PREPARATION OF SHEETROCK

(4a) **PILING**—Sheetrock bundles shall be piled flat on the floor in center of room after doors and windows are in place on job. Edges shall be protected.

(4b) **HANDLING**—Sheetrock shall always be handled in a vertical position on its long edge.

(4c) **CUTTING OR SAWING**—To cut the board the face paper shall be scored with a knife or chisel and the board snapped in two over a straight-edge or the board shall be sawed through with a sharp hand saw with face or board up.

Before nailing board in place all cut edges and mill cut ends shall be beveled on the face side with coarse sandpaper removing any loose ragged paper at same time.

(5) APPLYING SHEETROCK

(5a) **GENERAL**—All ends and edges shall be perfect. All exposed ends shall be face beveled. All board shall butt snugly along the covered edges and shall be left open ⅛ in. at all abutting cut ends. Edges or ends shall not be forced together. All joints shall be broken—that is, stagger boards so that the corners of any four boards do not meet at one point. On opposite sides of partitions, perpendicular joints shall not occur on the same stud.

(5a1) Quarter Inch Sheetrock shall be applied with the length parallel with framing members.

(5a2) **(⅜ in.) (½ in.)** Recessed Edge Sheetrock shall be applied **(parallel with) (at right angles to)** framing members.

(5b) **CEILINGS AND WALLS**—Ceilings shall be erected first. Walls shall be erected so that boards fit snugly against ceiling boards and first board shall be squared with adjacent wall.

(5c) **NAILING**—Nails shall be driven "home," straight in, with heads slightly below surface without using nail set. Boards shall be nailed first at edge adjoining board last applied; then on first intermediate framing member; then on second intermediate framing member; and finally remaining side and ends. Nails shall not be staggered on adjoining edges.

NOTE—*For spacing nails use clause (5c1) below when Sheetrock is applied parallel to framing members and clause (5c2) when applied at right angles to framing members.*

(5c1) On intermediate supports nails shall be spaced 6 in. apart on ceilings and 9 in. apart on walls. At all edges and ends nails shall be spaced 3 in. apart ⅜ in. from the edge.

(5c2) All nails shall be spaced 4 in. apart on all framing members.

(6) APPLYING JOINT TREATMENTS

(Perf-A-Tape Joint System) (Metal A Joint System) shall be applied and all intermediate nail heads spotted according to United States Gypsum Company's specifications which are included in every box of joint system.

BB024 1008

United States U.S. Gypsum Company

GYPLAP

Fireproof Sheathing

DESCRIPTION—Gyplap* is a fireproof solid sheet of gypsum encased in a tough, fibrous, water-resisting covering. The ends are coated to resist moisture. It is an ideal material for sheathing on frame structures under siding, shingles, stucco, and brick veneer. Gyplap Sheathing has tongue and groove edges on the long dimension to provide positive assurance of a tight fit at the unsupported joints. Gyplap Sheathing does not open up at joints with moisture and temperature changes. It is applied with its length at right angles to the studs.

INSULATING GYPLAP—Insulating Gyplap is Gyplap, upon the back of which is mounted a thin, smooth, bright sheet of aluminum. Insulating Gyplap is applied to the exterior face of exterior walls with the bright aluminum side next the framing members. Thus installed, its heat insulating value is equal to or better than that of standard ½ in. thick Fiber Insulating Board.

SIZES—Gyplap is ½ in. thick, 24 in. wide, 6 ft. 8 in. and 8 ft. long to fit supports 16 in. on centers.

ADVANTAGES—

Fireproof—Does not burn or readily transmit heat. It interposes a substantially thick fireproof sheet over the wood frame.

Permanent—Does not disintegrate.

Moistureproof—The outer surface is specially treated to resist moisture. No building paper is required. The ends are coated to resist moisture.

Windproof—The continuous surface with wind-tight horizontal joints (the end joints occur only over supports) prevents air leakage.

Economy and Convenience—The sizes of Gyplap are convenient and economical to erect. It cuts and nails as easily as lumber, adapting it to any building condition. Every sheet of Gyplap is true and uniform—no knots or waste material.

Strength—The large units of Gyplap span across seven studs spaced 16 in. on centers and thoroughly brace the framework.

STRENGTH AND RIGIDITY TESTS—Strength tests of Gyplap and of ⅞-in. thick wood sheathing applied both horizontally and diagonally, conducted by Columbia University in New York City, and Armour Institute of Technology in Chicago, are ample proof of the strength and rigidity of gypsum sheathing, and its suitability for all purposes for which wood sheathing has usually been employed.

Master Specifications

GYPLAP—FIREPROOF SHEATHING

NOTE—*Siding, stucco and brick veneer may be applied over Gyplap or Insulating Gyplap in the usual manner.*

(1) SHEATHING

Sheathing shall be **[Gyplap] [Insulating Gyplap]** as made by the United States Gypsum Company, ½ in. thick, 24 in. wide, 6 ft. 8 in. or 8 ft. long. Nails for application shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails.

(2) APPLICATION

Apply **[Gyplap] [Insulating Gyplap]** with groove side down and **[trade-mark] [aluminum foil]** side in, directly to framework with length at right angle to supports.

Butt the ends tightly over a support and interlock the side edges. Stagger vertical joints.

Fit tightly around all openings.

Fasten securely with nails spaced 4 in. apart on each bearing, set ⅜ in. from end edges.

Do not cover Gyplap with building paper.

(3) SIDING

Apply siding at right angles to studding directly over Gyplap. Nail only to studs with nails sufficiently long to pass through the Gyplap.

(4) STUCCO

Apply 3.4 lb. Red Top Self-Furring Diamond Mesh Lath **[Galvanized] [Copper Bearing Steel, Painted] [Pure Iron, Painted]** at right angles to the studs. Lap lath ½ inch on sides and 1 inch on ends. Carry metal around all corners to first support. Secure with 6d galvanized nails approximately 6 inches apart on centers driven through the Gyplap into the studs. Drive nails well in and bend to engage at least two lath strands. Thoroughly secure metal at all openings.

NOTE—*Follow standard specification for the application of exterior stucco.*

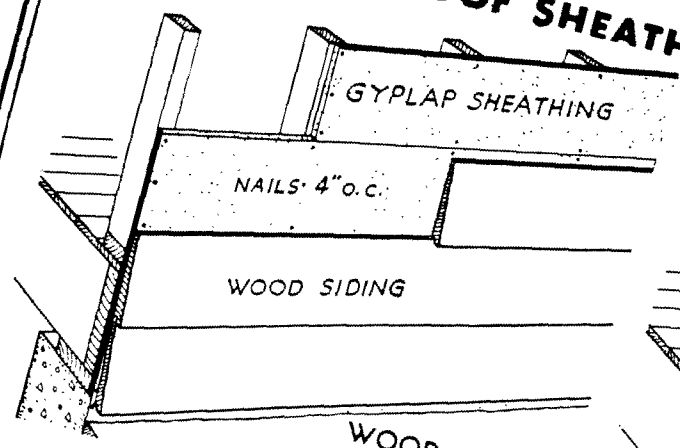
(5) SHINGLING

Over the Gyplap apply, secured through the Gyplap to each bearing, 1 x 2-in. furring strips to take shingle weathering specified.

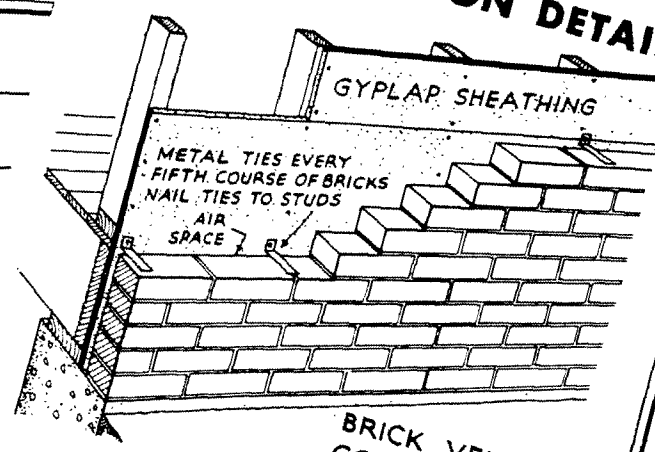
*Trade-Mark

United States USG Gypsum Company

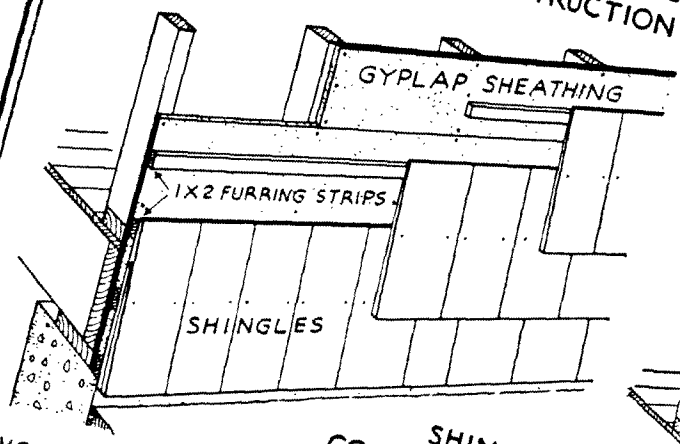
GYPLAP FIREPROOF SHEATHING CONSTRUCTION DETAILS



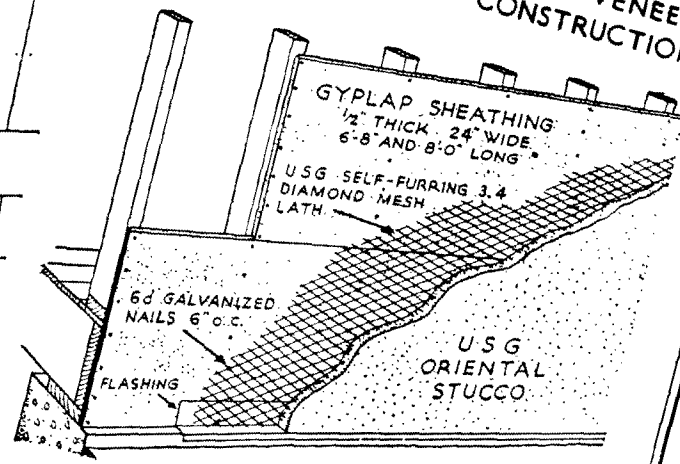
WOOD SIDING CONSTRUCTION



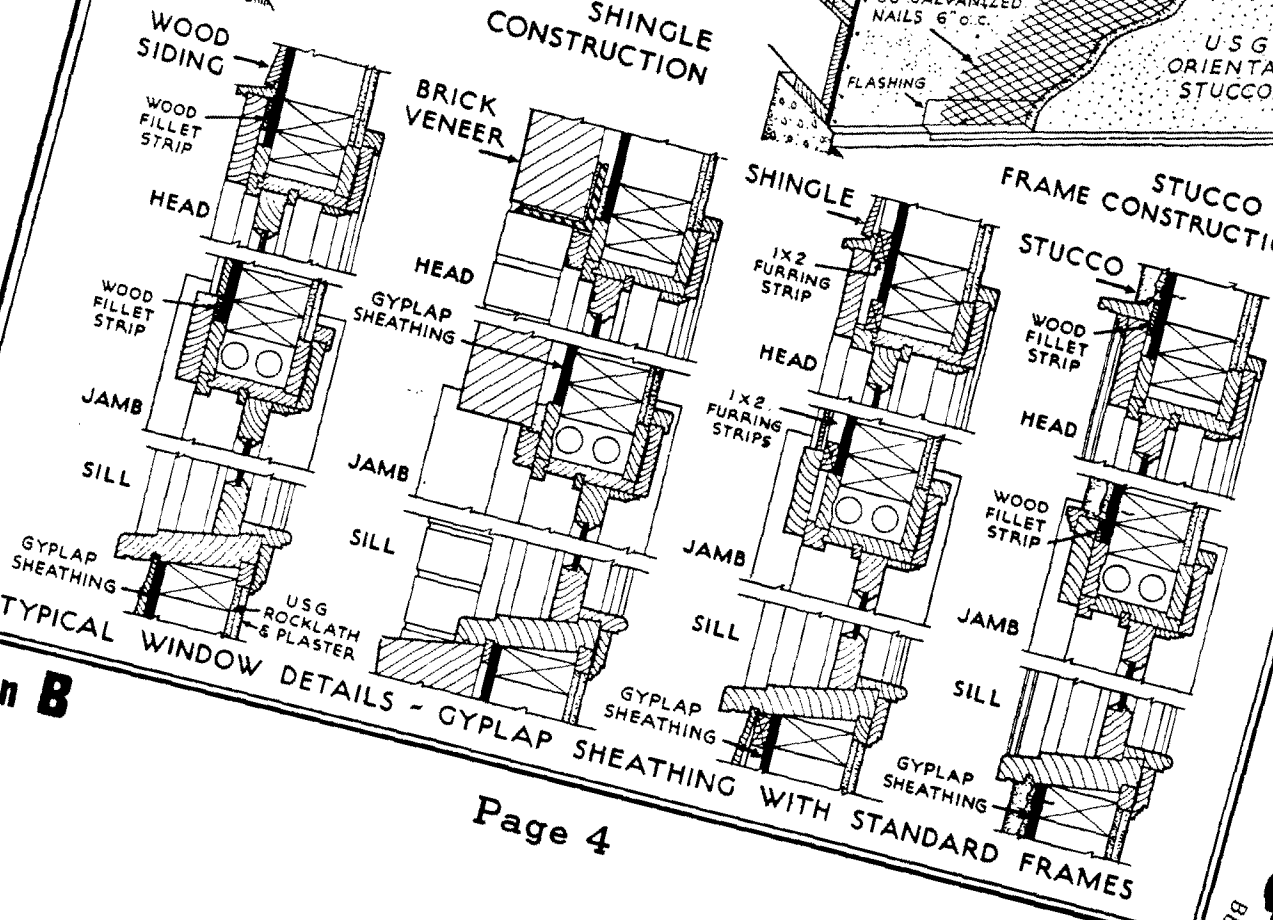
BRICK VENEER CONSTRUCTION



SHINGLE CONSTRUCTION



STUCCO ON FRAME CONSTRUCTION



TYPICAL WINDOW DETAILS - GYPLAP SHEATHING WITH STANDARD FRAMES

SECTION B

BB024 1010

WEATHERWOOD HARDBOARD

DESCRIPTION—Weatherwood* Hardboard is a compressed wood fiber product, extremely dense, hard, tough, and rigid. It has two smooth finished surfaces: one a mottled brown color, the other a mottled gray. Both present a very pleasing appearance. Weatherwood Hardboard is easy to paint, enamel, stain, varnish, etc., and can be sawed into any shape desired and nailed. Smooth, clean holes can be drilled in it.

Weatherwood Structoboard* is similar to the Hardboard, but as it is not compressed as much, it is not quite as dense and hard.

SIZES—Weatherwood Hardboard is ⅛ in. thick.

Boards are furnished in the following sizes:

2x4 ft., 3x4 ft., 4x4 ft., 4x6 ft., 4x8 ft., 4x9 ft., 4x10 ft., and 4x12 ft.

Weatherwood Structoboard is furnished in ¼ in. thickness and in the same sizes as the ⅛ in. Hardboard.

USES—Both Weatherwood Hardboard and Structoboard are excellent in cabinet work for cupboard backs, drawer bottoms, etc., and as decorative overlays over insulating board walls and ceilings; and for wainscots, paneling, booths, and partitions.

They have many uses in both the commercial and industrial fields and are used extensively in furniture and toy businesses. They are an excellent material for signs, mountings, and for general display purposes. In the industrial field they have extensive uses, such as patterns, templets, drying racks, etc.

Another important use is in the permanent display field. Some of the finest displays in use today in shops, department stores, and traveling displays on truck and train are built of Weatherwood Hardboard.

ADVANTAGES—Weatherwood Hardboard and Structoboard are truly all-purpose products. They are strong and durable, yet light in weight and easily handled. Their hard surfaces resist the extremes in abrasion. They have extremely low moisture absorption.

FIBER WALLBOARD

DESCRIPTION—Tiger Fiber* and Red Top* Wallboards are unsurpassed in quality by any other fiber wallboard. They are uniform, tough, unusually strong for this type of board, and because of their lightness are easy to handle and apply.

The face side of Red Top Fiber Wallboard is either smooth or embossed, giving excellent surface for decoration. The back surface is smooth.

SIZES—Tiger Fiber Wallboard, approximately 3/16 in. thick, 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16 ft. Packed same as Red Top Fiber Board.

Red Top Fiber Wallboard, Standard Thickness full 3/16 in., 4-ply, and 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16-ft. Packed ten boards to the bundle.

Red Top Fiber Board. "Extra Thick" ¼ in., 5-ply, 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16-ft. Packed eight boards to the bundle.

ADVANTAGES—These wallboards are very carefully made of laminated layers of selected wood fibers, which interlace, forming a board that is strong and tough. The board is thoroughly kiln dried.

Red Top Fiber Wallboard is of even thickness and uniform size, as a result of which it can be applied with a minimum amount of labor.

By means of a special varnish sizing process the board is made unusually moisture resistant and the surface prepared for economical decorating. A wide range of decorative possibilities is afforded, the board taking the paint smoothly and easily and giving an attractive velvety finish.

The "Extra Thick" ¼ in. board is 5-ply instead of 4-ply and is processed in the same manner as the regular 3/16 in. board. It is recommended where an extra strong board is desired.

USE—Because of the sturdiness, light weight, low cost, and ease of cutting and handling, Tiger and Red Top Fiber Wallboards have many uses. They are ideally suited for theater displays, standing signs, window displays and backgrounds, cartons and crates, posters, dress and stocking forms, and many other commercial uses. They are also suitable for rapid erection of partition, storage bins, temporary walls, lining of garages and similar buildings.

ERECTION AND DECORATING — These wallboards are easly sawed, cut and nailed. For partition or similar work, they should be securely nailed at every stud with joints covered with wood panel strips. The surface, when properly prepared, is suitable for oil paint, flat paint, water paint, air brush (in poster work), and USG Texolite or Textone. The boards should not be wallpapered. Red Top Fiber Wallboard is often left in its pleasing natural ivory color.

*Trade-Mark

RED BOOK · SECTION C

THERMAL INSULATION

WEATHERWOOD* INSULATION
Structural Board Type
PHYSICAL CHARACTERISTICS

DESCRIPTION—Weatherwood Insulating Board is a felted wood fiber product treated to make it highly moisture resistant. It is so formed that it produces a homogeneous board, free from laminations and tendencies to split through the center.

> **NOTE**—*United States Gypsum Company has three Insulation Board manufacturing mills: St. Joseph, Missouri; Greenville, Mississippi; and Lisbon Falls, Maine. While the raw materials from which the St. Joseph Mill Insulation is made are basically different from those of the Greenville and Lisbon Falls Mills, the physical characteristics of the products of all three mills are essentially the same.*

REISTANCE TO MOISTURE—NON-ABSORPTION—Tests show that this board, after being submerged in water for a period of two (2) hours, has an average water absorption of less than 15 per cent. It absorbs less paint than any similar product.

LOW THERMAL CONDUCTIVITY—The average thermal conductivity established in tests is .33 B.t.u.'s per hour, per sq. ft., per one inch thickness, per degree F.



Note T & G Edge of Asphalt Coated Sheathing

STRUCTURAL STRENGTH—The tensile strength is over 300 lbs. per sq. in., and the modulus of rupture, over 500 lbs.

DURABILITY—There is nothing in this board that will deteriorate prematurely and impair the original insulation value.

Since the board is homogeneous, the fibers being interwoven through the sheet, it will not split.

The weatherproofing chemical with which the fibers are treated makes the board distinctly distasteful to rodents and insects.

Weatherwood Insulation Board for structural use is also furnished, when specified, with special treatment making it proof against attack by termites and fungi growth (dry rot). This treatment does not change its physical characteristics.

NON-COMPRESSIBILITY—RESILIENCE—When laid over roof decks under standard roofing materials, it is sufficiently firm to prevent denting or cutting of the roofing under normal use. Weatherwood will not compress under furring strips.

UNIFORMITY—Adequate laboratory control and mill inspection assure uniformity in density and structural strength.

APPEARANCE—TEXTURE and COLOR—The high quality of the product is reflected in its fine appearance. One surface of the standard board is finished in a uniform screen texture and the other in a "smooth skin." For decorative use, the exposed face may be obtained in either "Smooth Skin" or "Textured" surface. Low density Tile Board products, used for sound absorption, are furnished only in "Brushed" surface. The standard color is an attractive "Ivory." Some products are furnished in "Ivory," and some in the new "Blendtex" color range.

Under the descriptions of the products which follow will be found the particular textures and colors applying to each.

Weatherwood Blendtex strikes a new note in interior finish. It is a unit material with integral color in soft pastel shades of grays and tans and has a fascinating textured surface. It comes in plank and tile of various sizes to give full reign to expressions of individual taste in design. It is used to equally fine advantage in homes and clubs, in schools and churches, in theatres and restaurants, in stores and offices, and is equally effective in both new and old construction.

COST—Advanced methods of manufacture, quantity production, and national distribution assure a reasonable cost. Because of the light weight and large units, the board is easy to install at low labor cost. It is cut and nailed like lumber.

*Trade-Mark

USG 4 1016

WEATHERWOOD INSULATING AND DECORATIVE PRODUCTS

BUILDING BOARD—Weatherwood Building Board is made in two (2) standard thicknesses—½ in. and 1 in. On special order it may be obtained 1½ in. and 2 in. thick. All thicknesses over ½ in. are waterproof-glue laminated, made up of multiple layers of the standard ½ in. board. The boards are 4 ft. wide by 4, 5, 6, 7, 8, 9, 10, and 12 ft. long with square edges.

The back of the boards has a uniform "screen" texture—the face, a "smooth skin" surface. The standard color is an attractive ivory.

When specified, Weatherwood Building Board for use other than interior decorative purposes may be obtained termite and fungi proofed.

For Interior Use—Building Board specially made for interior applications is also furnished with a "textured" face in ivory color. ½ in. only.

ASPHALT COATED SHEATHING

Tongue and Grooved Type—The standard size is 25/32 in. thick, 2 ft. wide, and 8 ft. long, with the long edges tongue and groove matched, and both faces and all edges coated with high melting point asphalt. Cut-outs for windows and angles can be made on scaffold instead of measuring and cutting on the ground.

This is a sheathing board that combines in a single product the advantages of small size, tongue and groove joint, the protection of asphalt coating, and the comfort and economies of efficient insulation. It is applied at right angles to the studding, tying 7 studs together instead of the usual 4 studs in vertical application. Because the studs are always in full view when boards are being applied, there is no splitting of the studs when nailing. It is not necessary for studs to be exactly 16" on centers. The sheathing cuts the short way of the board, does not spoil pieces for 16" on centers. No headers are required.

Square Edge Type—Standard Weatherwood 25/32 in. thick, coated on both faces and all four edges with asphalt. Square edges. A highly waterproof product that protects against wind infiltration, and provides efficient insulation for year 'round comfort. The large sheets can be run from plate to header vertically and span three stud spaces in width. The boards are 4 ft. wide by 6, 7, 8, 8½, 9, 9½, 10 and 12 ft. long.

INSULATING LATH—Used as an insulating base for gypsum sanded or wood fiber plaster. It is made in two (2) thicknesses—½ in. and 1 in. (laminated), 18 in. wide by 48 in. long. The long edges are shiplapped or tongue and grooved and all four edges are beveled.

Reinforced Insulating Lath—Similar to the standard lath but provided with a wire fabric attached to one long edge in such a manner that after the lath unit has been applied, the reinforcement can be snapped down into position over the joint without further nailing.

ROOF INSULATION—Used over wood and incombustible roof decks under built-up roofing. It is made in four (4) thicknesses—½, 1, 1½, and 2 in., water-resistant glue laminated, 22 in. wide by 47 in. long. Where specified, it can be furnished stapled with offset edges when over ½ in. thick.

INSULATING TILE BOARD—Insulating Tile Board is made in two (2) types—Standard Density, fabricated from standard Weatherwood Board, and Low Density. The Low Density tile may be obtained with four edges beveled and square, and all four edges beveled and tongue-and-groove. High Density tile has beveled and tongue-and-groove edges only.

Standard Density—Adapted to general use for decorative wall and ceiling finishes. They are made in two (2) thicknesses—½ in. and 1 in. (laminated); two (2) size groups (see below); and three (3) textures and colors—Ivory "Smooth Skin," Ivory "Textured," and Blendtex "Textured."

Low Density—A special low density product used for sound correction where a low cost, attractive sound absorbent is required. They are made ½ thick, one (1) in color—Ivory, and one (1) texture, "Brushed." The coefficient of absorption at 512 cycles is .40. Sizes include all of Group 2 but 16 in. x 32 in. only in Group 1.

Sizes (Group 1)—Designed for nailing application to standard framing. 16 in. x 32 in., 24 in. x 48 in., and 18 in. x 48 in.

Sizes (Group 2)—Generally for application with adhesive or nailing to special furring. 12 in. x 12 in., 12 in. x 24 in., 16 in. x 16 in., 24 in. x 24 in.

INSULATING PLANK—Used for interior finish to combine insulation and decoration in one material. Individual Planks obtainable in ½ in. only.

Individual Planks—Made in random widths 6, 8, 10, 12, and 16 in. by 6, 7, 8, 9, 10, and 12 ft. long. The long edges are shiplapped with either a plain bevel or bead and bevel (see details). Colors are Ivory skin surface or Blendtex.

MOULDINGS—As accessories for use in connection with Insulating Tile Board and Insulating Plank are provided eight (8) standard mouldings (see details) in 9 ft. lengths. The profiles are sanded smooth in two (2) colors—Ivory and Graytan.

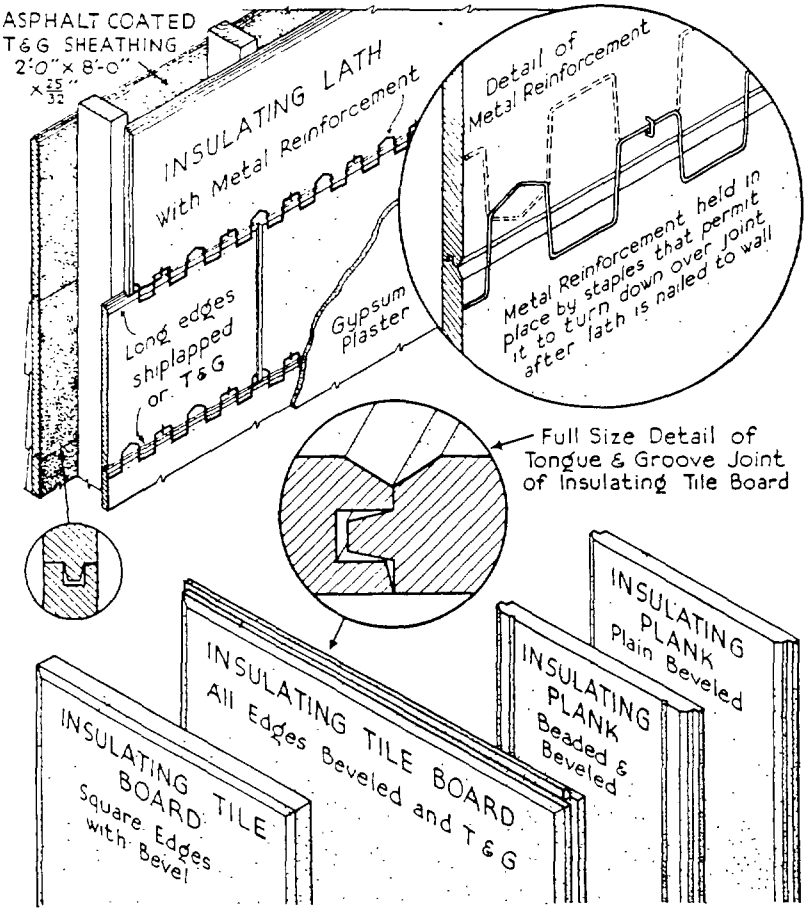
Border Strips—Ivory or Graytan. Ideal for use with Ivory or Blendtex tile ceilings or plank walls, etc.

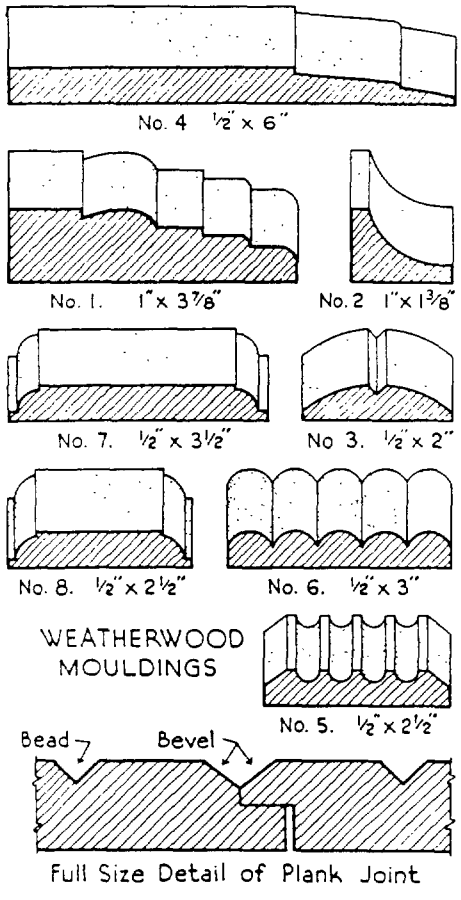


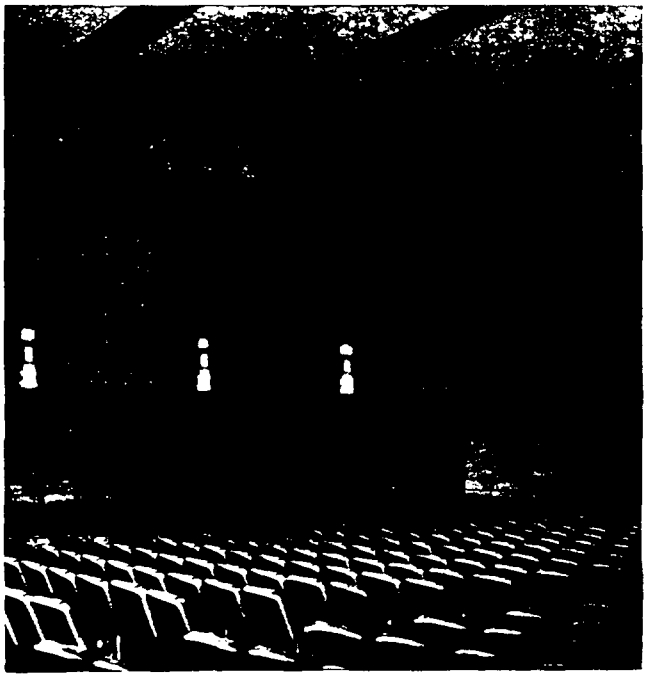
Weatherwood Roof Insulation is Easily Applied

BB024 1013

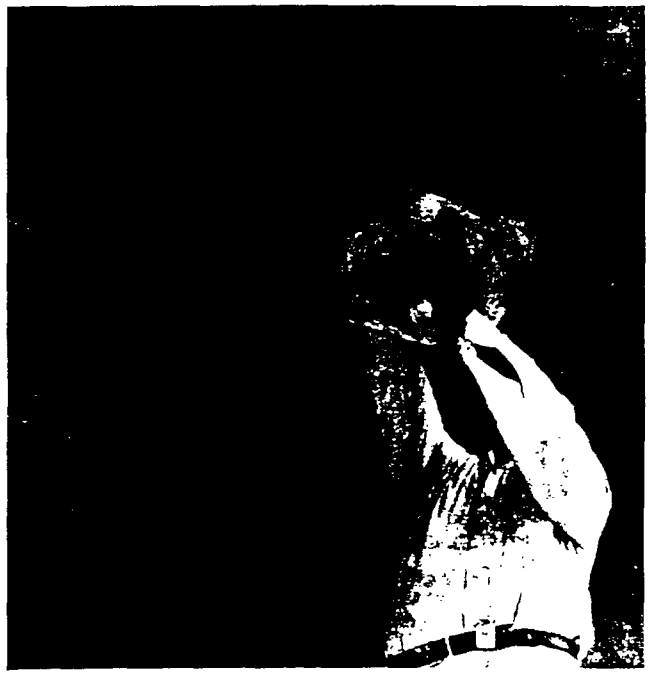
DETAILS OF WEATHERWOOD INSULATION







Weatherwood Tile and Plank in Theater



Metal Reinforced Lath Has Extra Strength at Joints

BB024 1014

United States U.S. Gypsum Company

RED TOP* INSULATING WOOL

Fill and Blanket Type • Wall Thick • Fireproof

DESCRIPTION—Red Top Insulating Wool is an extremely light, fluffy wool insulation made from the same ingredients contained in glass—a fireproof material.

The nature of the raw material used, particularly as to purity, permits accurate manufacturing control—the product is an absolutely uniform long-fibre wool. It contains a minimum of "shot" or other non-insulating materials that add weight.

TYPES—There are five (5) distinct types of Red Top Insulating Wool, each designed to fill a specific application need.

Junior Bat Wool—Red Top Junior Bat Insulating Wool is full thickness, 15 in. wide, and is shipped in paper bags or in cartons. The length of a Junior Bat in bag is 8½ in.; in carton, 11¾ in.

Bats—Red Top Insulating Wool Bats are either full or semi-thickness; either 15 in. or 23 in. wide x 36 in. long. They are shipped only in cartons. See table on next page for quantity per carton. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each bat. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base.

Strip Wool—Red Top Strip Wool is a continuous blanket, 15 in. or 23 in. wide x 9 ft. long, in either full or semi-thickness. Strips are packed in cartons, each strip being folded into thirds for easy removal and application. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each strip. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base.

Nodulated—Red Top Nodulated Insulating Wool is designed for pouring into open spaces, such as between open attic joists or similar areas. It is shipped in paper bags, each containing 6⅔ cubic feet of material when properly fluffed and spread.

Granulated—Red Top Granulated Insulating Wool is especially developed for the "blown-in" method of installation. It is shipped in paper bags, each containing 8⅓ cubic feet.

RESILIENCE—AN OUTSTANDING CHARACTERISTIC—Unlike other fireproof wool insulating materials, Red Top Insulating Wool is springy and resilient—it will not mat. If compressed, it recovers virtually all of its original volume when the pressure is released and is easily fluffed up to its original volume.

LOW THERMAL CONDUCTIVITY—The heat conductivity of Red Top Insulating Wool (standard density) is .266 B.t.u.'s per inch thickness, per square foot, per hour, per degree F. difference in temperatures. (Tests by Armour Institute of Technology.)

LIGHT WEIGHT (DENSITY)—In its standard density, Red Top Insulating Wool weighs but 1½ pounds per cubic foot—the lightest of this class of materials.



Red Top Strip Wool is Ideal for Insulating Large Areas



Red Top Bat Wool is Economical for Broken Areas

*Trade-Mark

BB024 1015

CLEAN • VERMINPROOF • PERMANENT—Red Top Insulating Wool is clean and odorless. There is nothing in its composition which will attract or furnish sustenance to rodents or other vermin. Once placed, it will not disintegrate, mat or settle. The fibres are tough, thoroughly interlaced, and resilient, and remain permanently efficient.

EASY TO INSTALL • LOW COST—All types of Red Top Insulating Wool are economical, easy to install, and permanent. They are furnished in dimensions to fit snugly into standard framing.

ADDED FIRE PROTECTION—In frame construction the usual void between the wall studs can be filled with this fireproof material thus eliminating fire carrying flues. Top floor ceilings and roofs blanketed with full thickness material act as fire stops.

CONVENIENT PACKAGES—The manner in which Red Top Insulating Wool is packaged adds to its convenience in shipping and handling. The extreme resiliency of Red Top Insulating Wool makes it possible to compress the strips and bats in relatively small volumes.

COVERAGE RED TOP INSULATING WOOL PACKAGES

Type of Wool	Thickness	No. of Pieces Per Package	Size	Coverage Per Package	
				Gross Including 2 x 4's	Net Excluding 2 x 4's
Red Top Strip Wool	Full Thickness	4	15" x 9'	48 sq. ft.	45 sq. ft.
Red Top Strip Wool	Semi-Thickness	6	15" x 9'	72 " "	67½ " "
Red Top Strip Wool	Full Thickness	4	23" x 9'	72 " "	69 " "
Red Top Strip Wool	Semi-Thickness	6	23" x 9'	108 " "	103½ " "
Red Top Bat Wool	Full Thickness	12	15" x 36"	48 " "	45 " "
Red Top Bat Wool	Semi-Thickness	20	15" x 36"	80 " "	75 " "
Red Top Bat Wool	Full Thickness	12	23" x 36"	72 " "	69 " "
Red Top Bat Wool	Semi-Thickness	20	23" x 36"	120 " "	115 " "
Red Top Junior Bats (Carton)	Full Thickness	33	15" x 11¾"	43 " "	40 " "
Red Top Junior Bats (Bag)	Full Thickness	23	15" x 8½"	21½ " "	20 " "



Asphalt Coated Paper Backing Forms Moistureproof Barrier



Junior Bats Adaptable to Complicated Framing Plans

United States U.S. Gypsum Company

THERMOFILL*

The Dry Fill Insulation

DESCRIPTION—Thermofill is a flaky gypsum material which gives a high degree of heat, cold and sound insulation when employed in the walls, ceilings, floors and roofs of residences, apartments and commercial buildings.

The material is light in weight; clean and easy to handle; and is packed in 50-lb. paper sacks.

METHOD OF INSTALLATION—Ease of installation is one of the many desirable features of Thermofill, the Dry Fill Insulation, and a feature that makes the use of the material practical in buildings already built, as well as in new construction.

Thermofill is installed simply by pouring (dry) into the space that is to be insulated. The economy of this application is at once apparent.

In residences already built, or in new residences, a large reduction of heat loss in winter and a more comfortable interior in summer can be secured by pouring Thermofill (dry) between the floor joists in the attic, directly upon the ceilings of the top floor rooms.

Complete details for Thermofill insulation in other locations will be sent upon request.

ADVANTAGES—Thermofill provides an extremely high degree of heat and cold insulation because of the form and composition of the material. Gypsum is an excellent natural insulator, and this quality is increased many fold due to the myriads of confined air cells assured by the fluffy nature of the material and the method of installation. When installed in the walls and between floors and ceilings, Thermofill prevents air circulation and the resulting passage of heat and sound.

Because it is made of gypsum, Thermofill does not burn and it thus provides valuable protection to inflammable wood framework.

Thermofill, because of its mineral nature, cannot decompose and it will not harbor vermin.

Because of its low initial cost and the saving in labor due to simplicity of application, Thermofill offers the builder a most economical as well as a most effective insulator.

THERMAL CONDUCTIVITY OF THERMOFILL

Density per cu. ft., lb.	B.t.u. per sq. ft. per hour per 1° F. per in. thick	Authority
19.8	.35	Bureau of Standards

Conductivity slightly higher when used in walls.

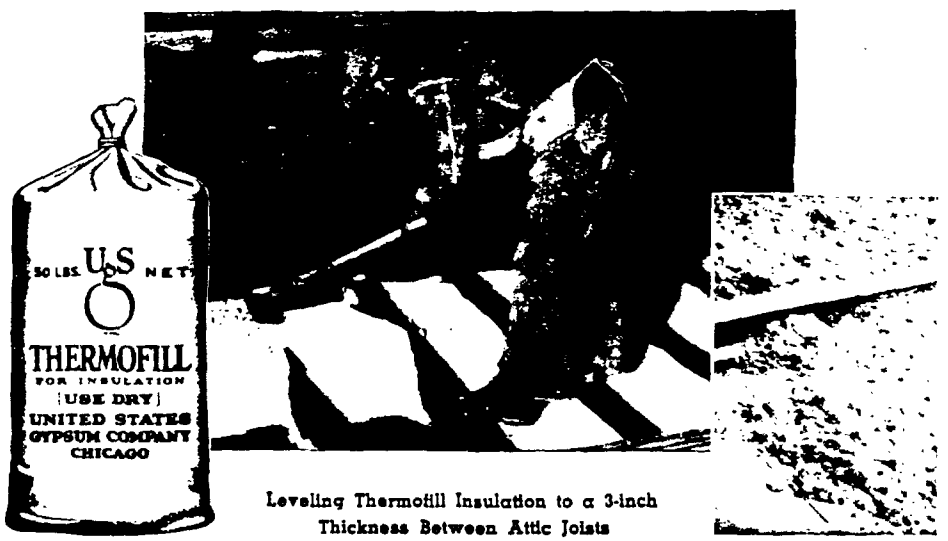
EFFICIENCY OF TYPICAL CONSTRUCTION UNINSULATED AND INSULATED

Walls	Uninsulated	Insulated with 3⅝-in Thermofill
Clapboard, paper, sheathing, stud, lath and plaster	0.25	0.093
Brick veneer, paper, sheathing, stud, lath and plaster	0.27	0.096
Stucco, paper, sheathing, stud, lath and plaster	0.30	0.10
Ceilings		
Lath and plaster—no floor	0.62	....
Lath and plaster—single floor	0.28	....
Lath and plaster—no floor—(insulated with 2 in. of Thermofill)	....	0.137
Lath and plaster—no floor—(insulated with 3 in. of Thermofill)	....	0.098
Lath and plaster—no floor—(insulated with 4 in. of Thermofill)	....	0.077

COVERING CAPACITY

Position of use	Per 50-lb. bag		Per ton	
	Sq. ft. 1-in. thick	Cu. ft.	Sq. ft. 1-in. thick	Cu. ft.
Walls	25	2	1000	83
Ceilings and floors	30	2½	1200	100

Packed in 50-lb. paper bags with directions printed on back.



Leveling Thermofill Insulation to a 3-inch Thickness Between Attic Joists

*Trade-Mark

SECTION D · MISC. PRODUCTS

MASON'S LIME

USE

As a mortar for setting brick, stone, etc., and for mixing with Portland cement, concrete, and stucco.

BRANDS

Mason's Hydrate—
Red Top* Mason's Hydrate (High Calcium and Dolomitic)
Snowdrift* Mason's Hydrate (High Calcium)
Marble Rock Mason's Hydrate (High Calcium)

Mason's Quicklime—
USG* Superfine Mason's Quicklime (High Calcium)
USG Pulverized Mason's Quicklime (Dolomitic)
USG Fine Grain Mason's Quicklime (High Calcium)
USG Pebble Mason's Quicklime (Dolomitic)
USG Crushed Mason's Quicklime (Dolomitic)
Peerless* Pulverized Mason's Quicklime (High Calcium)
Peerless Crushed Mason's Quicklime (High Calcium)
Marble Rock Pulverized Mason's Quicklime (High Calcium)
Marble Rock Pebble Quicklime (High Calcium)
USG Lump Lime (High Calcium and Dolomitic)

DESCRIPTION

The advantages of lime mortar for use in brick, tile, or stone masonry are economy, strength, plasticity, and waterproofing. Either a high calcium or dolomitic lime can be used for masonry.

USG Mason's Hydrated Limes are scientifically slaked by the manufacturer and are ready for mixing and use after soaking.

USG Mason's Quicklimes are thoroughly burned from carefully selected rock and produce a mortar with high plasticity and excellent workability with high sand carrying capacity.

Quicklime must be slaked and aged before using in mortar.

DIRECTIONS— HYDRATED LIME

Hydrating—First pour water into box, then add Hydrated Finishing Lime to the water, distributing it uniformly. The water must cover the lime. Use sufficient water—about 6½ gallons to 50 pounds of hydrate, an amount sufficient for a soft, wet paste.

Soaking—Allow to remain undisturbed for at least 6 hours, preferably over night. Protect from frost and drying up until used. Soaking develops plasticity, and putty should not be allowed to dry after it has reached the correct buttery consistency.

Mixing—Mix putty with sand or with sand and cement; adding sufficient water to bring mix to a hodable consistency.

DIRECTIONS— QUICKLIME

Slaking—Add water and lime gradually while mixing, constantly agitating mixture to prevent burning of unslaked portion. Mix to a thin consistency and screen through a quarter-inch mesh screen.

If dolomitic lime is used, the lime must not be hoed or stirred except to level out any hot, dry areas which do not receive water.

Aging—After screening, run mixture into aging box. Lime must be aged until it is cool and the putty is hodable. Lime putty produced from quicklime should never be used until aged at least one week, and a longer time is preferable to assure complete slaking.

Mixing—Mix putty with sand or with sand and cement, adding sufficient water to bring mix to a hodable consistency.

PACKAGE

Red Top Mason's Hydrate ..... 50-lb. paper bags
Snowdrift Mason's Hydrate ..... 40-lb. paper bags
Marble Rock Mason's Hydrate ..... 50-lb. paper bags
USG Superfine Mason's Quicklime ..... 80-lb. paper bags
USG Pulverized Mason's Quicklime ..... 50-lb. paper bags
USG Fine Grain Mason's Quicklime ..... 80-lb. paper bags
USG Pebble Mason's Quicklime ..... 180-lb. net wood barrels or steel drums
USG Crushed Mason's Quicklime ..... 180-lb. net wood barrels or steel drums
Peerless Pulverized Mason's Quicklime ..... 100-lb paper bags and 180-lb net wood barrels or steel drums
Peerless Crushed Mason's Quicklime ..... 180-lb. net wood barrels or steel drums
Marble Rock Pulverized Mason's Quicklime ..... 60-lb. paper bags, 60-lb. and 90-lb steel drums
Marble Rock Pebble Mason's Quicklime ..... 100-lb. paper or Calsax bags, 60-lb. and 90-lb steel drums, 180-lb. net wood barrels

USG Lump Lime is shipped in bulk.
All above brands may be shipped in bulk

MORTAR MIXES FOR VARIOUS TYPES OF MASONRY

Masonry Type	Type of Construction	Loading	Mortar Proportions (Volume) Lime : Cement : Sand	Remarks
Common and face clay, shale or sand-lime brick	Dwellings, garages and similar construction	Any condition of loading for such types of construction	1 : 0 · 3	
Clay or shale brick	Walls and piers below grade continuously exposed to wet or damp conditions	Ordinary distributed Heavy concentrated Earthquake tremors	1 : 1 : 6* 1 : 1 : 6* 1 : 1 : 6*	
Common and face clay, shale or sand-lime brick	Exterior walls and piers above grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	2:1:5 Mortar domestic and power plant chimneys
Granite, limestone, marble, flagstone, terra cotta facing and trim	Exterior walls and piers above grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 : 1 9* 2 : 1 : 9* 2 : 1 : 9*	Use non-staining portland cement and washed sand
Common and face clay, shale or sand-lime brick, concrete brick	Interior walls and piers above and below grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	
Hollow clay tile, concrete block, concrete tile, cinder block	Exterior walls above grade and interior partition walls	Non-bearing partitions, exterior and bearing walls and partitions	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	

NOTES: Materials to conform to current "A.S.T.M. Standard Specifications."

Mortar containing portland cement to be used within one hour after mixing.

*One volume of cement is the maximum quantity which should be used. The sand content is to be varied in accordance with its quality in the particular market involved and its proportion may be reduced if greater mortar strength is desired.

From "Masonry Mortar, Bulletin 321" published by National Lime Association.

*Registered Trade-Mark

BB024 1018

United States Gypsum Company

WINDOWS · COAL DOORS

• • •

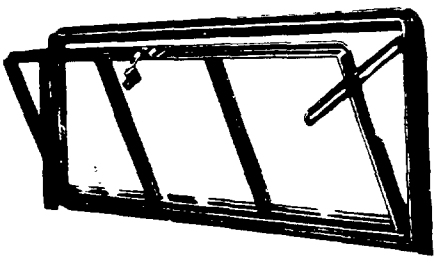
RED TOP STEEL BASEMENT SASH

DESCRIPTION—Red Top Basement Sash are made in five practical sizes (see table below), all easy to install in any type of masonry. They are furnished complete with hardware attached, painted and ready for immediate installation and glazing (glass not furnished). They are available in either top or bottom ventilating types, both opening toward the interior of the room and can be obtained with a puttyless device for quick and easy glazing or in the putty glazing type. The top ventilating sash is provided with automatic support arms which fold completely out of sight when closed. The design of the Ventilator and Frame assures full weather protection. There is nothing to interfere with their easy operating and secure locking features.

CONSTRUCTION—The Red Top Basement Sash is formed from a single piece of solid rolled (not cast) stock to which are welded jamb angles to assure secure, weathertight installations.

Muntin bars are narrow T-sections riveted to ventilator frame. The simple cam action lock holds the ventilator securely and provides positive protection from intruders. Top ventilating sash are furnished with loose pin butts. Bottom ventilating sash are furnished with sturdy hinges consisting of oval shaped steel rods formed into hooks solidly welded into the frame. In both types the sash are easily detached from the frames from inside.

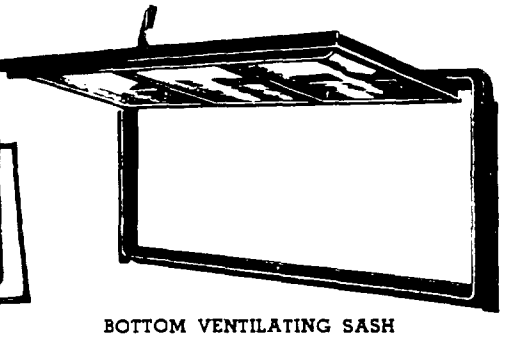
SCREENS—Since all basement windows should be screened during the summer months, the United States Gypsum Co. furnish, at slight added cost, screens to fit Red Top Basement Sash. Screen frames are of metal, finished in black enamel, wired with standard galvanized steel wire screen cloth. They are attached to the steel frames with two brass bolts permitting quick installation and removal.



TOP VENTILATING SASH

SCREENS





BOTTOM VENTILATING SASH

PUTTY GLAZING

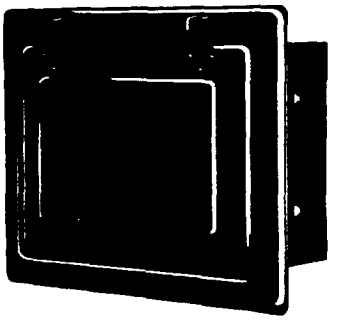
Style		Type	Masonry opening	Weight, lbs.
Bottom ventilating	Top ventilating			
721	721	3 ft. 10x12 in.	32¾x15¼ in.	18
722	722	3 ft. 12x18 in.	38¾x21¼ in.	23
723	723	3 ft. 10x20 in.	32¾x23¼ in.	22
724	724	2 ft. 14x20 in.	30⅜x23¼ in.	20
725	725	3 ft. 10x14 in.	32¾x17¼ in.	20

PUTTYLESS GLAZING

Style		Type	Masonry opening	Weight, lbs.
Bottom ventilating	Top ventilating			
711	731	3 ft. 10x12 in.	32¾x15¼ in.	18
712	732	3 ft. 12x18 in.	38¾x21¼ in.	23
713	733	3 ft. 10x20 in.	32¾x23¼ in	22
714	734	2 ft. 14x20 in.	30⅜x23¼ in.	20
715	735	3 ft. 10x14 in.	32¾x17¼ in.	20

RED TOP PRESSED STEEL COAL DOORS

INTRODUCTORY--Steel Coal Doors are now standard equipment in American dwellings. Home owners demand them for the protection of foundation walls and as a guard against intruders. The Red Top Coal Door is weatherproof and meets every practical requirement. Once installed, it will continue to serve as long as the building lasts.



DESCRIPTION—The sturdy, attractive appearance of Red Top Coal Doors reflects careful study and deep appreciation of the builder's needs. Their design, simplicity and trim lines clearly indicate their unusual strength, and lend to the attractiveness of any building. The frames come from the factory painted black and are ready to go into the construction with the least effort. All fittings are attached.

CONSTRUCTION—Red Top Pressed Steel Coal Doors are of enduring construction and are practically indestructible. The frame is made from a single piece of deep drawn steel plate. The same unbreakable material is used throughout the door's construction. The apron is made heavy to withstand the severe impacts of coal delivery.

Hinges are unbreakable and so constructed that they automatically hold the door open against the building—giving protection to the wall when coal is being put in. The self-closing lock is positive and assures locking when the door is closed.

SIZE—18 x 24 in.; wall thickness, 8 in.; masonry opening, 22¼ in. wide by 16½ in. high; weight, 35 lbs.

United States U.S. Gypsum Company

RED TOP EXPANDED METAL

[Econo Mesh*]

• • •

CONCRETE REINFORCEMENT

•

INDUSTRIAL USES

Open Partitions • Door and Window Guards
Machine Guards

INTRODUCTORY—Red Top Expanded Metal (Econo Mesh) is a fabricated diamond mesh steel material of high elasticity manufactured by the United States Gypsum Company at its Warren, Ohio, Steel Products Plant. Its diamond shaped meshes range from 3 x 8 in. down to ¼ x 1 in. Engineer and contractor alike find definite advantages in using expanded metal as a reinforcement for the many forms of concrete slab work of moderate span and load, since the correct amount of reinforcing can be predetermined.

The smaller meshes present an ideal open mesh material for the construction of open partitions, window and door guards, elevator enclosures, machine guards, etc., and similar items that require a rigid open mesh material.

FOR CONCRETE WORK—Red Top Expanded Metal offers marked advantages over reinforcing systems composed of tied or interlaced units. Some of its many advantages are: (1) Ease and rapidity with which it can be properly placed by unskilled workmen and with less supervision. (2) Lightens the designer's responsibility, because the correct amount of steel is determined at the time of manufacture, and cannot be altered by careless or ignorant workmen. (3) Provides a perfect bond, minimizing shocks, concentrated loading, etc., as stresses are evenly distributed over entire area. (4) Large, convenient size sheets, which lie flat without stretching.

The more popular reinforcing uses are for floor and roof slabs of moderate span and load, retaining walls, loading platforms, porch floors, culverts, sea walls, reservoirs, small bridges, tanks, foundations, columns, vaults, fireproofing, beam wrapping, etc.

FOR OPEN PARTITIONS, INDUSTRIAL USES, ETC.—Because it permits good visibility and has great rigidity, Red Top Expanded Metal is used extensively in many industries. It is particularly adaptable for the making of Open Partitions, Window and Door Guards, Machine Guards, etc. Its moderate cost, efficiency, durability and the ease with which it can be formed and framed commend it for this wide range of service. Red Top Expanded Metal can be framed with angle iron, U-edging, Red Top Frame Bar, or Red Top Partition Bar. These and other accessories are also furnished.

Some of its present uses in various industries are: Skylight guards, conveyor enclosures, elevator shaft and cage enclosures, fire door guards, mill trucks, trays and baskets, open shelving, ventilating fan enclosures, refuse burners, live stock pens, filter screens, truck body enclosures, stairway enclosures, brake shoe binder.

The United States Gypsum Company does not manufacture partitions, guards, etc. Its interest is confined to the distribution of the necessary materials for their construction, together with any advisory service that can be rendered. Names of reliable fabricators will also be furnished to those who prefer to have their safety and industrial devices built for them. Interesting descriptive literature on the many industrial uses for Red Top Expanded Metal is also available.

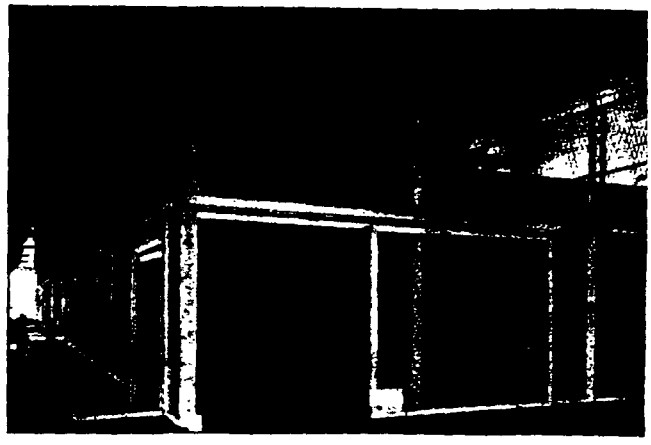
SHELF-X*—FLATTENED EXPANDED METAL—Except for the fact that it has the advantage of a flat surface, Shelf-X has the strength, rigidity, workability, and economy features of Red Top Expanded Metal. It is widely used for shelving purposes and many other uses requiring a rigid open mesh material. Some Shelf-X uses are: refrigerator shelves, cabinet shelves, stove grilles, ventilating grilles, drying trays, display panels. Can be had in ¼, ½, ¾, 1 and 1½ inch meshes cut from 13, 16, and 18 gauge steel.

B8024 1020

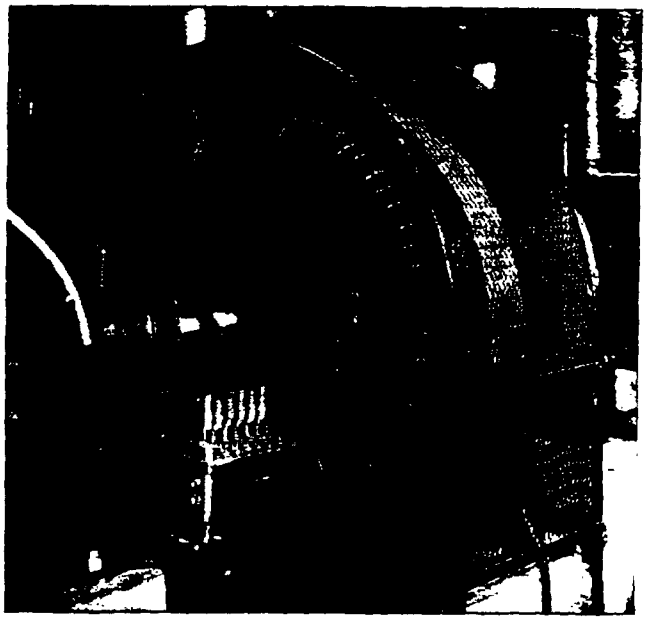
*Trade-Mark

RED TOP EXPANDED METAL STOCK SIZES and WEIGHTS

Style Numbers	Size of mesh, in.	U. S. std. gauge number	Sq. inch sect. area per foot of width	Approx. Weight lbs. per sq. ft.	Width short way of mesh	Length long way of mesh feet
Meshes for Concrete Reinforcement						
3-13-075	3 x8	13	075	.25	6' 4"	8, 10, 12
3-13- 10	3 x8	13	.10	.34	7' 0"	8, 10, 12
3-13-125	3 x8	13	125	.42	5' 8"	8, 10, 12
3- 9- 15	3 x8	9	.15	.51	7' 0"	8, 10, 12
3- 9-175	3 x8	9	.175	.60	6' 0"	8, 10, 12
3- 3- 20	3 x8	9	.20	68	5' 3"	8, 10, 12
3- 9- 25	3 x8	9	.25	.85	4' 2½"	8, 10, 12
3- 9- 30	3 x8	9	30	1.02	7' 0"	8, 10, 12
3- 9- 35	3 x8	9	.35	1.19	6' 0"	8, 10, 12
3- 4- 40	3 x8	4	40	1 36	4' 7"	8, 12
3- 4- 45	3 x8	4	.45	1.53	4' 1"	8, 12
3- 4- 50	3 x8	4	50	1.70	7' 4"	8, 12
3- 4- 55	3 x8	4	.55	1.87	6' 8"	8, 12
3- 4- 60	3 x8	4	60	2.04	6' 11½"	8, 12
2¼-13-10	2¼x6	13	.10	.34	7' 0"	8, 10, 12
2¼-13-15	2¼x6	13	15	.51	4' 8"	8
Special Meshes for Partitions, Guards, Etc.						
1½" No. 16	1⅜x3⅛	16		.41	4' 0"	8
1½" No. 13	1⅜x3⅛	13		.65	4'0" and 6'0"	8
1½" - 68 lb.	1⅜x3⅛	2		.68	4'0" and 6'0"	8
1½" No. 10	1⅜x3⅛	13		79	4'0" and 6'0"	8
1½" No. 9	1⅜x3⅛	10		1.19	6'0"	8, 10, 12
1" No 16	1x2⅜	16		47	4'0" and 6'0"	8
¾" No. 16	¾x2⅛	16		57	6'6"	8
¾" No. 13	¾x2⅛	13		.87	4'0" and 6'0"	8, 10, 12
¾" No. 10	¾x2⅛	13		1 19	4'0"	8
¾" No. 9	¾x2⅛	10		1.80	4'0"	8, 10, 12
½" No. 18	½x1 3/16	18		.70	4'0" and 6'0"	8
½" No. 16	½x1 3/16	16		.87	4'0" and 6'0"	8
¼" No. 18	¼x1	18		1.14	4'0"	8



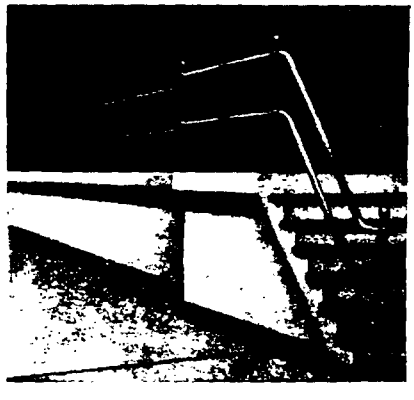
This stockroom, centrally located, has ample light and air due to the use of 1½ in. Expanded Metal.



Expanded Metal can be shaped to required forms. On this motor it affords protection from particles which are apt to fall or be sucked in by the motor when in operation.

Stock Sizes and Weights of Shelf-X

Style No.	Approx. Wt. per sq. ft.	Size Sheets	
		Width	Length
1½" No. 16	31	3' or 4'	8'
1½" No. 13	65	3' or 4'	8'
1½" No 9	1.19	3' or 4'	8'
1" No 16	.47	3' or 4'	8'
¾" No 16	57	3' or 4'	8'
¾" No. 13	87	3' or 4'	8'
¾" No 9	1 80	3' or 4'	8'
½" No. 18	70	3' or 4'	8'
½" No. 16	87	3' or 4'	8'
¼" No 18	1 14	4'	8'



This loading platform is representative of the many special uses for expanded metal as reinforcement.



Shelf-X—Flattened Expanded Metal, smooth and easily cleaned, is here used for refrigerator shelving.

United States USG Gypsum Company

ROOFING PRODUCTS

• • •

USG ASPHALT ROOFING SHINGLES

The whole USG roofing story can be told in one word

FORTIFIED

1. BUILT LIKE A FORTRESS

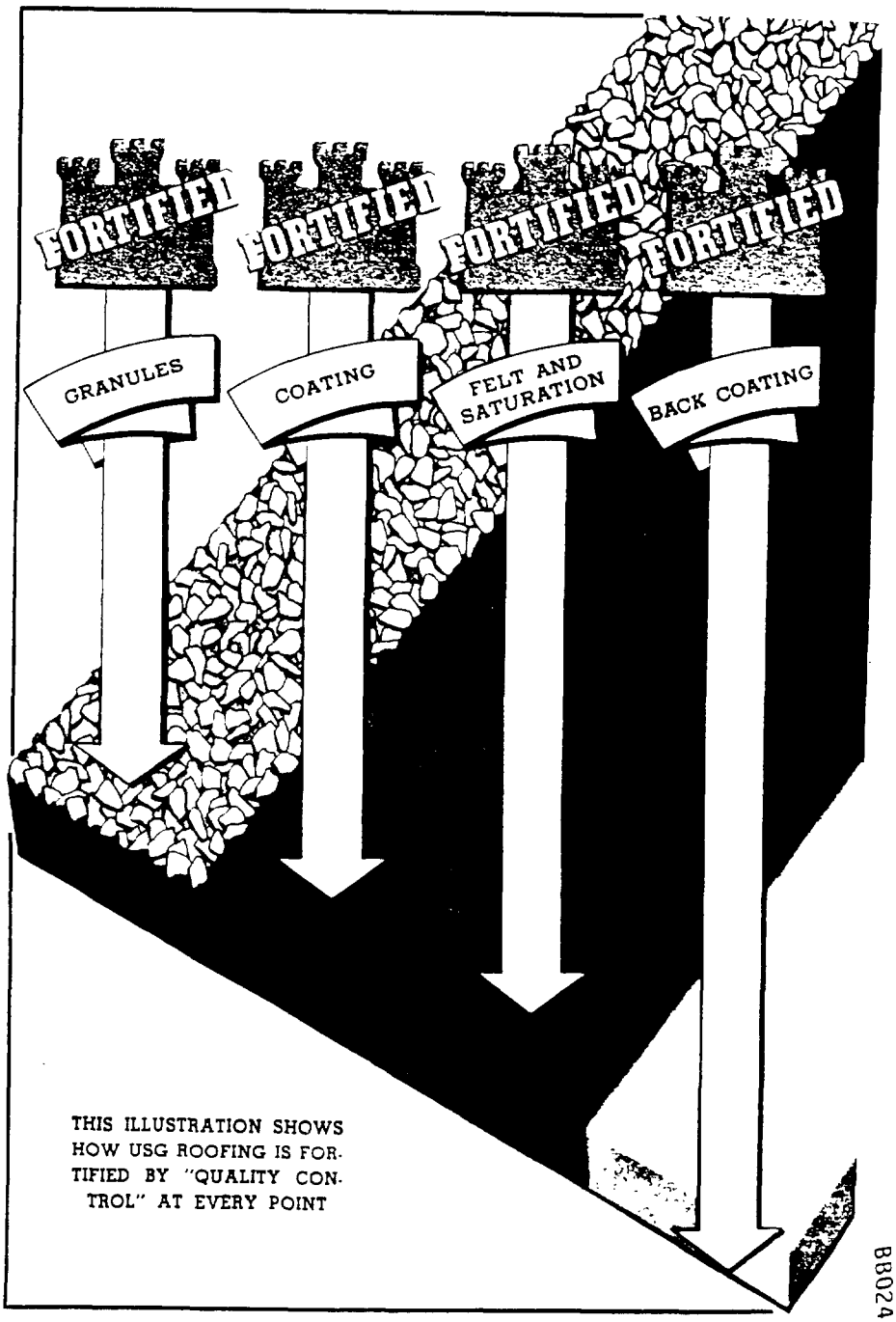
From front to back, side to side, and end to end—Granules, Coating, Felt, Saturation, and Back-Coating—all are selected fighting units put together for long survival in the continual war against wear.

2. QUALITY CONTROL AT EVERY STEP OF PRODUCTION — FORTIFIED AT EVERY CRITICAL POINT

That the phrase "USG" Always Means QUALITY" shall be a fact, men are stationed like sentries at all plants—Quality Control Men—who watch every step, weigh every ingredient, time every operation, measure every material—then prove every process.

3. A NAME KNOWN FOR 35 YEARS OF LEADERSHIP IN BUILDING MATERIALS

USG Building Products are widely known and respected wherever buildings are built or remodeled.



THIS ILLUSTRATION SHOWS HOW USG ROOFING IS FORTIFIED BY "QUALITY CONTROL" AT EVERY POINT

BB024 1022

United States U.S. Gypsum Company

USG SHINGLE TYPES

NOTE—*The six types of shingles described here all carry the Class C Label of the Underwriters' Laboratories, Inc.*

TAPERED STRIP SHINGLES

The Tapered Strip Shingle, thick at the butt end and thin at the top, has the greater portion of the protective asphalt coating at the butt end where the wear comes. The dimensions of the tabs in relation to their thickness give the shingles a rugged utility and create a heavy shadow line. The Tapered Shingle is available in a number of solid colors and a variety of attractive warm and cool blends, a range adapted to the correct color treatment of any slope-roof dwelling.

THICK BUTT SHINGLES

USG Thick Butt Shingles, like USG Tapered Shingles, have additional protective asphalt coating at the butt or exposed portion. The weight of these shingles is further distributed by using a fine mineral surfacing on the top part and standard size granules on the butt end. By this special manufacturing process, USG Thick Butt Shingles provide lasting weather protection, color and beauty of exceptional character.

SQUARE BUTT SHINGLES

In addition to the Tapered Strip Shingles and the Quad Shingles, both of which are in the square butt pattern, other three and four tab square butt shingles are produced in a variety of pleasing colors and color combinations. Due to the thoroughly conservative design, square butt strip shingles have always been popular and genuinely appealing to home owners.

HEXAGON STRIP SHINGLES

A pleasing variation in design and surfacing is available in USG Hexagon Strip Shingles. A thoroughly asphalt saturated base coated on both sides and covered with attractive colored surfacings combine to form this popular shingle. USG Hexagon Strip Shingles are produced in a full range of colors and sizes for various purposes.

THATCH SHINGLES

USG Thatch Shingles offer a pleasing variation in design from the more standard square butt and hexagonal roof patterns. Thatch Shingles have pleasing roof lines when viewed from any angle and are particularly suited to small homes. Their design is such that they offer unusual resistance to high winds. They come in two sizes—10 and 12 in. in width—and in a wide range of colors. The larger type provides full double coverage.

ARRO-LOCK* SHINGLES

A most successful lock shingle which requires only two nails per shingle yet the method of nailing secures each shingle at four points. All exposed edges are angular, eliminating the possibility of water following straight line edges over head-lap. The locking device, which holds each shingle securely, permits natural expansion or contraction without buckling. This shingle, particularly adapted to re-roofing, is manufactured in a number of colors and color combinations.

OTHER SHINGLE TYPES

The USG shingle line includes, in addition to the above types, Quad* Shingles, Standard and Giant Individual Shingles, Dutch Lap Individual Shingles, Tritab* Strip Shingles, Grip-Lock* Shingles, Super-Tite* Shingles, and Brick Siding Strips. Each type of shingle is available in a variety of plain colors and blends.

USG ROLL ROOFING

USG ADAMANT* (Mineral Surfaced Roofing)

Adamant is a high quality mineral surfaced roll roofing for use on structures where appearance is important but roofing at lower cost than shingles is desired. Its low initial material and application cost ideally suit it to industrial properties. It weighs ninety pounds per roll of 108 square feet, 36 in. wide, packed complete with nails, lap cement, and direction sheet for application, and carries the Class C Underwriters' label. It is furnished in a range of colors.

USG ZEEN-X* (Corrugated Surfaced Roll Roofing)

A corrugated talc surfaced roll roofing of superior quality affording economical protection where long service is paramount. Produced in rolls 36 in. wide, containing 108 square feet. Directions for laying and sufficient nails and lap cement for proper application are contained in each roll. Each of the four weights—45, 55, 65, and 75 pounds—carries the Underwriters' Class C label.

USG IMPERIAL* MICA (Surfaced Roll Roofing)

A substantial roll roofing, mica surfaced on both sides, combining the best materials into roll roofing, moderate in cost and of proven endurance. Necessary nails, cement, and directions for laying are packed in each roll. Manufactured in 35, 45, 55, 65, and 75 pound weights, rolls 36 in. wide, containing 108 square feet each. The 55, 65, and 75 lb. weights carry the Class C label of the Underwriters' Laboratories, Inc.

USG DIXIE* and PARACO* (Talc Surfaced Roofing)

A smooth surfaced talc finished roll roofing of great durability at low cost. Produced in three weights—35, 45, and 55 lbs.—in rolls 36 in. wide, containing 108 square feet. Directions for laying and sufficient nails and lap cement for proper application are contained in each roll.

OTHER MISCELLANEOUS USG ROOFING PRODUCTS

Our line contains various other types of serrated edge roll roofings, building and sheathing papers, asphalt and tar saturated felts, built-up roofing cap sheets, asphalt, pitch, plastic and liquid roof cements and coatings.

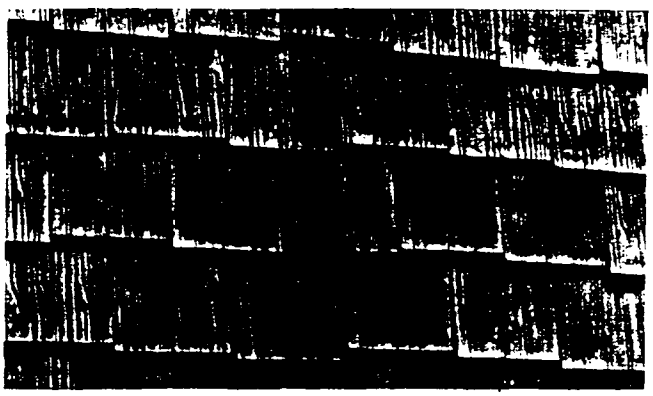
*Trade-Mark

United States USG Gypsum Company

USG ASBESTOS CEMENT ROOF SHINGLES

DESCRIPTION

USG Asbestos Cement Roof Shingles provide a waterproof, fireproof, beautiful roof that is low in cost per year of service. Made of two non-inflammable materials—asbestos fibres and Portland cement. Carry highest ratings of the Underwriters' Laboratories. Do not rot, rust or decay. Wide variety of attractive colors and shapes enables architect to specify the roof that best conforms to the structures he designs. Deep, wood grain gives textured type shingles the beauty and charm of weathered wood.



Close-up of No. 200 American Method Shingles

NO. 200 USG AMERICAN METHOD TAPERED SHINGLES

Class A Underwriters' Label. Hand Split Wood Shake Texture. Colors. Smoky Black, Pilgrim Gray, Buff, Tawny Brown, Bark Brown, Heather Brown, Tile Red, Copper Green, Moss Green and Natural Gray. Size. 9 x 18 in. with ¼ to ⅝-in. butt. Exposure 8 in. Headlap 2 in. Shingles per square: 200 (size 9 x 18 in.). Shingles per bundle. 20—covers 10 sq. ft. Approximate weight per square: 490 lbs. Accessories Required: (Not included in price) American Method Starter Shingles No. 202, and 1¾ lbs. 1¼-in. Galvanized Nails per square for 9 in. wide shingles.

RANDOM WIDTHS						
Random widths	5"	6"	7"	9"	12"	18"
Shingles per sq. . .	360	300	257	200	150	100
1¼" nails per sq..	3 lb.	2½ lb.	2¼ lb.	1¾ lb.	1¼ lb.	1 lb.



No. 200 USG American Method Tapered Shingles



NO. 300 USG DUTCH LAP SHINGLES

Class B Underwriters' Label. ¼ sidelap (also applied ⅓ sidelap). Idealized Wood Grain Texture, uniform thickness. Colors: Gray, Pearl Gray, Green, Black, Red, Mottled Gray. Sizes: 16 x 16 x 3/16 in. Exposure 12 x 13 in. (or 10⅔ x 13 in.).* Headlap: 3 in. Sidelap. 4 in. (or 5⅓ in.).* Shingles per square 92, covers 99⅔ sq. ft. (or 104).* Shingles per bundle: 23, covers 25 sq. ft. (or 22½).* Approximate weight per square: 266 lbs. (or 295* lbs.). Accessories: (Not included in price). No. 300-A Dutch Lap Starters, ¾ lb. (or 1 lb.)* 1¼-in. Galvanized Nails and 92 (or 104) Copper Storm Anchors per square. No. 301 Dutch Lap Hip and Ridge Shingles.

***NOTE:** *If shingles are applied with 5½" sidelap (⅓ lap) the figures in parentheses () above apply.*



NO. 100 USG HEXAGONAL METHOD SHINGLES

Class B Underwriters' Label. Smooth surface, uniform thickness. Colors: Gray, Pearl Gray, Green, Red, Black, Mottled Gray. Size: 16 x 16 x 3/16 in. Weather Exposure: 13 x 13 in. Overlap: 3 in. Shingles per square: 86. Shingles per bundle: 17. Approximate weight per square: 267 lbs. Accessories Required: (Not included in price) 1st Course Starters No. 101, 2nd Course Starters No. 102, 1 lb. 1¼-in. Galvanized Nails and 86 Copper Storm Anchors per square. No. 103 USG Asbestos Cement Ridge Roll.

BB024 1024

United States U.S. Gypsum Company

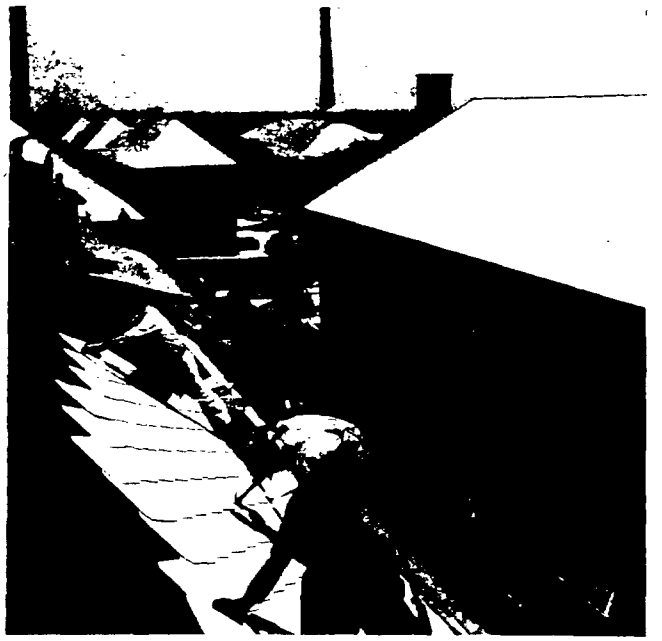
USG ASBESTOS CEMENT SIDING

DESCRIPTION

USG Asbestos Cement Sidings, like USG Roof Shingles, offer fire protection, permanence, beauty at an unusually low per year cost. They are made in a variety of colors and designs to provide the architect full freedom of selection and enable him to specify exterior walls that will remain attractive throughout the years. Outstanding features of USG Asbestos Cement Siding are the trueness and uniformity of colors, the variation in face textures, and the length of the shingle units—3 in. longer than any other asbestos cement shingle now available. This means 11% fewer joints, tighter, more wind resistant walls.

NO. 600 USG WAVY BUTT SIDING

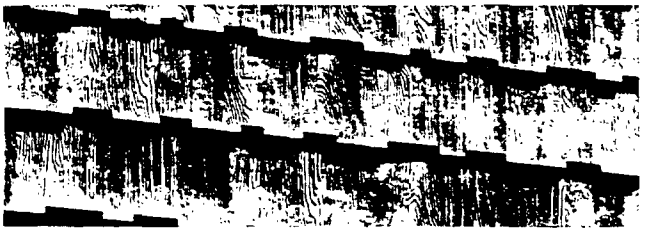
Idealized wood grain texture, uniform thickness. Colors: Gray, Bright Gray, White, Green, Mottled Gray (smooth surface). Sizes: 12 x 27 x 5/32 in. Exposure: 10 1/2 x 27 in. Overlap: 1 1/2 in. maximum—1 1/8-in. minimum. Shingles per square: 51. Shingles per bundle: 17 (covers 33 1/3 sq. ft.) Approximate weight per square: 186 lbs. Accessories Required—Included in price: 51 pieces Asphalt Joint Strips 3 x 12 in. and 1 3/4-in. Alloy Face Nails (Electro Tin Plated). Not included in price: 3/4 lb. 1 1/4-in. Galvanized Nails required for concealed (top) nailing. For illustration of this siding see cut at right, below.



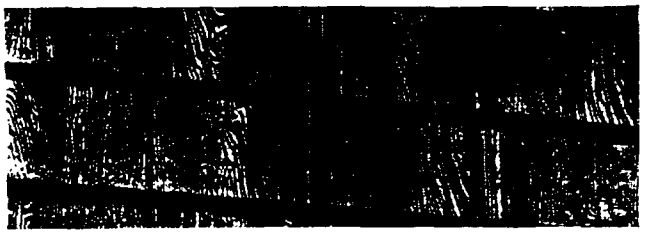
Applying No. 100 Hexagonal Shingles, Ft. Sheridan, Ill.

NO. 600-A USG WAVY BUTT SIDING

Idealized Wood Grain Texture, uniform thickness. Colors: Gray, Green, White. Size: 9 1/2 x 27 x 5/32 in. Exposures: 8 x 27 in. Overlap: 1 1/2-in. maximum—1 1/8-in. minimum. Shingles per square 66 Shingles per bundle. 22—covers 33 1/3 sq. ft. Accessories Furnished—Included in price: 66 pieces Asphalt Joint Strips 3 x 9 1/2 in and 1 3/4-in. Alloy Face Nails (Electro Tin Plated). Not included in price 1 lb. 1 1/4-in. Galvanized Nails for concealed (top) nailing.



No. 700 USG Thatch Butt Siding



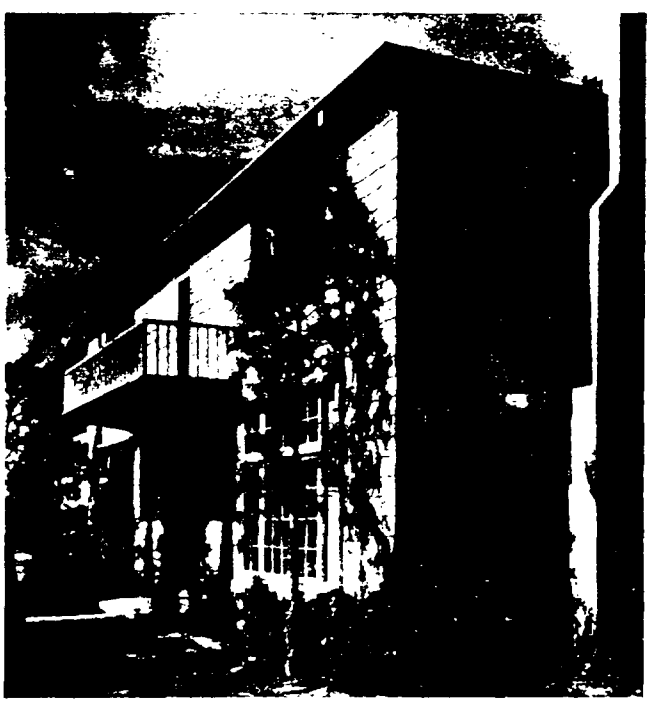
No. 900 USG Clapboard

NO. 900 USG CLAPBOARD

Idealized Wood Grain Texture, uniform thickness. Colors: Gray, White, Mottled Gray (Smooth texture). Size: 9 x 27 x 5/32 in. Exposure. 8 in. Overlap: 1 in. Pieces per square: 66. Pieces per bundle: 22—covers 33 1/3 sq. ft. Approximate weight per square 190 lbs. Accessories Required—Included in price: 66 pieces Asphalt Joint Strips 3 x 9 in. and 1 3/4-in. Alloy Face Nails (Electro Tin Plated). Not included in price: 1 lb. 1 1/4-in. Galvanized Nails for concealed (top) nailing.

NO. 700 USG THATCH BUTT SIDING

Idealized Wood Grain Texture, uniform thickness, deep wavy lines Colors: Gray, Bright Gray, White, Green. Size: 12 x 27 x 5/32 in. Exposure: 10 in. Overlaps 2-in. maximum—1 1/4-in. minimum. Shingles per square: 54. Shingle per bundle: 18—covers 33 1/3 sq. ft. Approximate weight per square: 190 lbs. Accessories Required—Included in price: 54 pieces Asphalt Joint Strips 3 x 12 in. and 1 3/4-in. Alloy Face Nails (Electro Tin Plated). Not included in price: 3/4 lb. 1 1/4-in. Galvanized Nails required for concealed (top) nailing.



No. 600 USG Wavy Butt Siding

BB024 1025

United States U.S. Gypsum Company

PAINT PRODUCTS

• • •

TEXOLITE PASTE WALL AND CEILING PAINT

SAVES UP TO 40% ON INTERIOR DECORATION

Texolite* is a paste wall paint for the painting of all types of interior walls and ceilings. The vehicle in Texolite is water-clear material, which allows all the light which strikes a Texolite painted wall to be reflected from the wall in the true, clear color of the pigment. The pigment in Texolite is specially processed lithophone with exceptionally high hiding power.

HIDING—One coat of Texolite usually hides average surfaces completely. Saves substantially in both time and material.

APPLICATION—Texolite is reduced to application consistency with water and is applied with either brush or spray gun. It flows easily under the brush. A 6- or 8-in. Baby Dutch brush is recommended. A good quality calcimine brush can also be used.

NON-INFLAMMABLE—Texolite contains no ingredients which can create fire hazards.

HIGH LIGHT REFLECTION—White Texolite reflects up to 90 per cent of the light which strikes it. It provides higher light levels; helps to save eyesight, increase worker efficiency, and cut lighting costs.

WIDE COLOR RANGE—Texolite comes in ten pastel shades and white. Intermixes of colors provide many additional shades. Can be tinted with Texolite Deep Colors (see heading Texolite Deep Colors) to provide unlimited range of tints, shades, or blends.

NON-YELLOWING—Texolite does not yellow or fade. Colors remain bright and true indefinitely.

QUICK DRYING—Texolite dries under average conditions in *one hour or less.* Decorating time is reduced to a minimum. Occupancy of interiors can be resumed within an hour after painting is completed.

USED OVER ANY SOLID SURFACE—Texolite can be applied over new or old plastered walls, fiber, gypsum or insulating wallboards, brick, tile, concrete, cement, primed or painted wood or metal surfaces. Refer to detailed directions shown on each can.

PRIMER—It is good practice to apply a prime coat of K-Cemo* Primer over most surfaces, new or old, because it evens up suction, provides an ideal surface to paint over, makes Texolite spread farther, and will assure a more uniform, better looking job. (For full description of K-Cemo Primer, see below).

NO PAINT ODOR—Permits occupation of interiors in less time after painting is completed.

WILL NOT CRACK—Texolite will not crack from sunlight or age.

HIGH COVERAGE—Following are the approximate coverages per gallon of Texolite paste.

Smooth primed or painted surfaces...600 to 800 sq. ft.
Smooth finished plaster surfaces.....500 to 700 sq. ft.
Textured surfaces .....400 to 600 sq. ft.
Insulating Board, fiber wallboard ....350 to 500 sq. ft.
Cinder blocks, concrete.....300 to 450 sq. ft.

PACKAGING—Texolite comes in quart, gallon, and 5-gallon cans and in 30-gallon drums.

K-CEMO (LIME-LOCKING) PRIMER

K-Cemo Primer is particularly useful for priming porous surfaces over which Texolite Paste Wall Paint is to be applied. It effectively seals porous surfaces, keeping the paint vehicle from striking into the pores of the surface.

The use of K-Cemo as a prime coat is recommended when Texolite is to be applied over extremely porous surfaces or surfaces of greatly varying suctions. Its use is also recommended as a primer when Texolite Deep Colors are applied over porous surfaces.

A coat of K-Cemo Primer over high gloss surfaces prevents bushing through or sagging of the paint finish. Such gloss surfaces should be washed thoroughly before applying K-Cemo.

TEXOLITE DEEP COLORS

Texolite Deep Colors are made to the same formula as Texolite Wall Paint. Deep Colors have the same characteristics and the same advantages as Texolite Wall Paint.

Texolite Deep Colors come in eleven deep brilliant colors and black. They are used either full strength as deep, brilliant paint or as tinting colors for tinting white Texolite or varying the color tones of the standard Texolite pastel shades.

*Registered Trade-Mark

BB024 1026

OTHER USG PAINT PRODUCTS

DURACAL

A well formulated, smooth working powder casein paint. Can be applied over fresh or untreated plaster. Mixes easily and spreads well. Five pounds of Duracal* will cover one coat of from 200 to 300 sq. ft. over primed or painted surfaces—over porous surfaces, slightly less. Made in white and 8 standard colors. Packed in 5 and 25-lb packages, 100-lb. drums, and 325-lb. (net weight) barrels.

USG CALCIMINE

A good cold water type calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb. barrels.

RED TOP PATCHING PLASTER

Red Top* Patching Plaster contains no lime. It is non-shrinking, very white, and specially formulated to assure easy workability.

USG SPACKLING COMPOUND

USG Spackling Compound is indispensable to painters and unexcelled for general household utility repairs. It is excellent for spackling and as a base for Swedish putty. It adheres firmly to any firm, clean surface—even to glass and steel. Dries stone hard without shrinking or cracking, thus furnishing a perfect surface for redecorating.

RED TOP PAINTERS' PLASTER

A general purpose painters' material. Red Top Painters' Plaster is produced from selected white gypsum rock especially treated to afford easy mixing. When set, it is unusually dense and strong.

KAL*

A high grade hot water calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb. barrels.

USG INTERIOR COLD WATER PAINT

A material giving better results than ordinary whitewash but affording equal economy. It is ideal for periodic cleaning and reconditioning of factories, warehouses, farm buildings, and other structures. Made in white only. Packed in 25-lb. bags and 350-lb. barrels.

USG EXTERIOR COLD WATER PAINT

An economical reconditioning paint for general outside utility work applied over practically any type of clean, firm surface. Forms an unusually smooth, tight film which remains much cleaner for this reason than the rough surface of the usual exterior wall coating. Made in white only. Packed in 25-lb. bags and 325-lb. barrels.

USG CEMENT PAINT

CEMENTICO

Cementico* is a cold-water, weatherproof, insoluble, hydraulic cement paint for use over such surfaces as unpainted stucco, porous concrete, brick, tile, and stone. *It is not intended for use on floors,* wood or non-porous surfaces such as smooth plaster, terra cotta, and enameled brick; or on greasy surfaces.

It is in the form of a powder to be mixed with water.

An outstanding and almost exclusive advantage is the readiness with which Cementico mixes with water. Because of the absence of "sludge" in the mixture, the usual tedious straining operation is materially lessened. Due to its smoothness and uniform consistency, Cementico is admirably adapted to application by spray gun as well as by brush.

Again and quite important, the tendency to "bloom" inherent in most cement-and-lime mixtures, in Cementico has been practically eliminated.

When white Cementico is to be tinted, the most lasting results are obtained by the use of USG Limeproof Colors.

One (1) pound of Cementico, applied in one (1) coat, will cover 16 to 25 sq. ft. depending upon the texture of the surface to be covered and heaviness of the application required.

Made in white and 10 standard colors. Packed in 5, 25, and 100-lb. packages and 325-lb. barrels.

USG PLASTIC PAINTS

TEXTONE

Textone* is a quality texture paint for application over walls and ceilings to produce beautiful and enduring texture effects. It comes in white powder form, is easily mixed with water to prepare it for application. Textures are obtained with tools employed in everyday use—whiskbroom, stippling brush, sponge, wadded paper, crumpled cloth, or the palm of the hand.

With these various tools, and others, many types of textures can be easily worked out to suit almost any architectural design. Attractive caenstone and travertine effects can be achieved.

A new method of low cost texture decoration employing Textone and Texolite which cuts materially the cost of texture work has been developed by the United States Gypsum Co. Briefly, the new method is this—One extremely thin coat of Textone in its natural white color is applied to the wall. As soon as the Textone is dry, one coat of Texolite Paste Wall Paint in the desired shade is applied. The result is a colorful, durable, textured finish of outstanding beauty. It's a job that has been done more simply, in less time, and at lower material cost than was ever before possible.

Heavier texture effects can be obtained by working with Textone at a heavier consistency and applying it to a greater thickness. Coloring can be applied by painting the textured surface with Texolite Paste Wall Paint; or dry pigment colors may be mixed with the prepared Textone before application. Other methods of coloring include blowing in colored sands after the Textone is on the wall by water glazing with tinted Textone Sealer or by *applying a coat of Textone Glaze which has been tinted with colors* ground in oil. Wiping the glaze coat brings out the high-lights and produces two-toned effects.

One pound of Textone should cover approximately from 1 to 3 sq. yd. of surface for a medium texture; slightly more with finer textures.

Made in white only but is easily tinted with USG Limeproof colors. Packed in 25 and 100-lb. moisture-proof fiber boxes and 325-lb. (300-lb. net) barrels.

USG TEXTURE PAINT

USG Texture Paint is a dry, white, powdered plastic paint, very similar to Textone in working qualities and in texturing possibilities. It is priced less than Textone, and although it necessarily lacks some of the quality of the latter, particularly the long-storing feature, yet it is far superior to most plastic paints on the market.

One pound will cover about 1 sq. yd. Packed in 25 and 100-lb. packages and 300-lb. (net) barrels.

EM-BEL-LO

Em-Bel-Lo* is a dry, white powder, texture-yielding paint, economical to buy and apply. The addition of water makes it ready for application. It is particularly adaptable to the production of *water-floated textures. Colors are added and the textures produced* as with other plastic paints. Application is with a brush. It is not self-sizing.

One pound of Em-Bel-Lo covers from ¾ to 1 sq. yd., medium texture.

Em-Bel-Lo can be satisfactorily tinted, before application, to any desired shade through the introduction of dry limeproof color.

Made in white only. Packed in 25 and 100-lb. packages and 325-lb. barrels.

*Registered Trade-Mark

BB024 1027

RED BOOK · SECTION E
GYPSUM CONSTRUCTIONS

Engineering Sales Division

• • •

ROOFS, FLOORS, PARTITIONS, FIREPROOFING

• • •

SHEETROCK-PYROFILL and WEATHERWOOD-PYROFILL ROOF CONSTRUCTIONS

The Sheetrock*-Pyrofill* Roof Deck is a reinforced gypsum roof construction poured-in-place over permanent Sheetrock forms. There are no joints for heat loss, and the monolithic construction helps stiffen the building structure.

The weight of Sheetrock-Pyrofill roof construction is but 11½ pounds per square foot for a six-foot purlin spacing, and 12½ pounds per square foot for an eleven foot purlin spacing. Regardless of how great the spacing is between purlins, the gypsum spans only 32½ inches—the spacing between sub-purlins. The sub-purlins are designed on the basis of standard beam formulae to carry the total live and dead load.

In load tests conducted by Columbia University, more than 500 pounds per square foot uniformly distributed load was required to break the 2½-inch thick Sheetrock-Pyrofill roof slabs. This is an exceptionally strong, durable construction.

The undersurface of the Sheetrock-Pyrofill Roof Deck consists of Sheetrock 32 inches wide, in lengths equal to the purlin spacing so that end joints occur over the main purlins. With the Sheetrock joints thus concealed, a smooth, attractive, light-reflecting undersurface results.

The Weatherwood*-Pyrofill Roof Deck construction, except for the substitution of Weatherwood for Sheetrock for the permanent forms, is identical with the Sheetrock-Pyrofill construction.

The undersurface of the Weatherwood-Pyrofill construction consists of either ½-inch or 1-inch thick Weatherwood insulating board 32 inches wide and in lengths equal to the purlin spacing. Thus all end joints occur over the main purlins.

The sub-purlins used in these two roof deck constructions are light rails or tees laid at right angles to the main purlins and spaced approximately 32½ inches on centers and clipped to the main purlins.

The reinforcing in the gypsum slab is a continuous, electrically welded, galvanized steel fabric, especially made to USG specifications, with No. 12 longitudinal wires 4 inches on center, and No. 14 transverse wires 8 inches on center.

After the reinforcing has been placed over the Sheetrock or Weatherwood permanent forms, Pyrofill is poured and screeded to the proper thickness, making the total depth of slab 2½ or 3 inches including the thickness of the form.

Pyrofill consists of gypsum stucco, water, and 12½ pounds of fiber to 87½ pounds of calcined gypsum. Pyrofill weighs only 50 pounds per cubic foot.

Curbs, end walls, etc., are usually constructed of Precast-Gypsum Tile. Curbs may also be made of Sheetrock-Pyrofill or Weatherwood-Pyrofill construction, if poured in place instead of precast is desired.

OUTSTANDING ADVANTAGES

ADAPTABILITY—Whenever steel framing is used (whether the roof be flat, 45° pitched, monitor, sawtooth, Pond, Aiken, etc.), the inherent value of either Sheetrock-Pyrofill or Weatherwood-Pyrofill construction may be advantageously employed.

FIREPROOF—The inherent advantages of gypsum for fireproofing are universally recognized.

LIGHT WEIGHT—For standard slab thicknesses and sub-purlin sizes Sheetrock-Pyrofill and Weatherwood-Pyrofill construction weighs only 10 to 12½ lbs. per square foot (see table on next page). This light weight, as compared with other masonry construction, permits savings throughout the structure, including columns and footings.

APPEARANCE—The smooth undersurface with uniform paneled effect is singularly pleasing to the eye. It also has excellent light reflection.

> **NOTE**—*If the underside of the slab is to be painted or otherwise decorated, such work should not be done until the waterproof roof covering has been applied and the slab is thoroughly dry.*

ECONOMICAL—The simplicity of the construction plus the light weight and the speed with which it is installed makes either Sheetrock-Pyrofill or Weatherwood-Pyrofill Roof Construction extremely economical.

NO MAINTENANCE—Calcined gypsum is chemically inert. Examinations of steel rods embedded for fifteen years in gypsum have shown no evidence of progressive corrosion. The maintenance cost is negligible.

HIGH INSULATION—Gypsum is among the highest in insulating value of the fireproof structural building materials. It is effective in protecting the building from extremes of outside temperature, both in summer and in winter.

The following table gives the heat loss through various types of roof construction expressed in B.t.u.'s per hour, per sq. ft., per degree difference in temperature. All values are figured with a 5-ply roof covering:

3 in. stone concrete	.61 B.t.u.'s
2½ in. Sheetrock-Pyrofill	.38 B.t.u.'s
3 in. Sheetrock-Pyrofill	.35 B.t.u.'s
2½ in. Weatherwood-Pyrofill (½ in. board)	.26 B.t.u.'s
3 in. Weatherwood-Pyrofill (1 in. board)	.19 B.t.u.'s

SPECIAL ADVANTAGE OF WEATHERWOOD-PYROFILL ROOF CONSTRUCTION—Weatherwood-Pyrofill Roof Construction has the special, additional, and unique advantage of providing an appreciable degree of acoustical absorption. This is particularly important in auditoriums, gymnasiums, and similar buildings but is also of considerable importance in many types of factories and industrial buildings.

*Registered Trade-Mark

BB024 1028

United States USG Gypsum Company

Master Specifications

SHEETROCK-PYROFILL and WEATHERWOOD-PYROFILL ROOF CONSTRUCTIONS

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*Here list the various roof areas to be constructed of Sheetrock-Pyrofill or Weatherwood-Pyrofill and specify the prescribed live load. If live loads vary, designate the live load applying to the various areas.*

(2) SUPPORTING STRUCTURAL STEEL WORK

All steel work for the support of the Sheetrock-Pyrofill Roof Construction has been designed not only to carry the prescribed live and dead loads, but to accommodate the most economical installation in accordance with the standard details of the United States Gypsum Company.

(3) MATERIALS

(3a) GENERAL—All Gypsum products shall be as manufactured by the United States Gypsum Company, 300 West Adams Street, Chicago, Ill.

(3b) SUB-PURLINS—Sub-purlins shall be steel **[tees] [rails]** of sizes and spacings required or indicated on the structural plans, furnished with a shop coat of paint. Provide all necessary clips **[of types best suited to conditions]** for rigidly securing sub-purlins to main purlins, etc.

(3c) SHEETROCK FORMS—Sheetrock (32 in. wide) shall be mill-made to exact lengths (maximum 10 ft.) to match the main purlin centering.

(3d) WEATHERWOOD FORMS—Weatherwood **[½ in.] [1 in.]** thick x 32 in. wide shall be mill-made to exact lengths (maximum 10 ft.) to match the main purlin centering.

(3e) REINFORCEMENT—Steel reinforcement shall be galvanized electrically-welded steel fabric made to USG specifications consisting of No. 12 main longitudinal wires 4 in. on centers and No. 14 transverse wires 8 in. on centers having an effective sectional area of .026 sq. in. per foot width of slab.

(3f) PYROFILL—Pyrofill shall consist of calcined gypsum and 12½ lb. of clean soft wood fiber to every 87½ lb. of gypsum. The gypsum and wood fiber shall be mill mixed. Water for proper consistency shall be added at the job.

(3g) PRECAST CURB TILE—Where so indicated on plans and details furnish 3-in. thick precast gypsum curb tile (reinforced when carrying a roof load or retaining drainage fill). For end wall construction where so indicated furnish Pyrobar Curb Tile (3-in. x 15-in. x 30-in. non-reinforced).

(3h) GYPSUM MORTAR—Gypsum mortar shall consist of one part of unfibered gypsum cement plaster and not to exceed two parts of clean sharp sand.

(4) ERECTION

(4a) GENERAL — All **[Sheetrock-Pyrofill] [Weatherwood-Pyrofill]** Roof Construction including all sub-purlins **[curbs] [end walls] [saddles] [drainage fill]** etc., shall be completely erected by the Engineering Sales Division of the United States Gypsum Company.

Roof construction shall be **(specify)** inches thick, including the thickness of the Sheetrock or Weatherwood. All joints in sub-purlins shall be staggered or rigidly tied together. Reinforcement shall be continuous. All roof surfaces shall be screeded smooth and true ready to receive the finished waterproof roof covering.

(4b) POURED CURBS—All curbs so indicated on plans and details shall be constructed of **(Sheetrock-Pyrofill) (Weatherwood-Pyrofill).**

(4c) TILE CURBS—All curbs so indicated on plans and details shall be constructed of precast gypsum curb tile (reinforced when carrying roof load or retaining drainage fill) set in gypsum mortar.

(4d) END WALLS, ETC.—Construct all **[end walls]** of **[monitors] [sawtooth skylights] ["A" frames] [specify]** of Pyrobar Curb Tile set in gypsum mortar.

(4e) DRAINAGE FILL—Provide Pyrofill saddles and drainage pitches to direct roof drainage to **[gutters] [drainage outlets].**

(5) WATERPROOF ROOF COVERING

NOTE—*Provide in the Roofing and Sheet Metal division of the specifications that the waterproof roof covering shall be applied as soon as possible after the Sheetrock-Pyrofill slab is erected (preferably within twenty days).*

SUB-PURLIN SIZES AND WEIGHTS OF SLABS

Sub-Purlins Spaced 32½" Total Load — 45 Lbs. per Sq. Ft. M = 1/10 WL

Size of Sub-Purlin (Weight per Yard)	Allowable Span		Weight of Sub-Purlins in lbs. per sq. ft. of Roof	Weight of Slab Including Sub-Purlins					
				Sheetrock Pyrofill		Weatherwood Pyrofill			
	18,000 lbs. per sq. in. Sub-Purlin Stress	20,000 lbs. per sq. in. Sub-Purlin Stress		Minimum Slab Thickness*	Weight in lbs. per sq. ft.	Min. Slab Thickness*		Wt. per sq. ft. in lbs.	
						½" Bd.	1" Bd.	½" Bd.	1" Bd.
USG 1-15/16"x1⅞" 8-Lb. Bulb Tee	6'-6"	6'-10"	1	2½"	11.5	2½"	3"	10.0	10.5
USG 2-7/16"x2⅜" 8.1-Lb. Bulb Tee	7'-4"	7'-9"	1	2¾"	12.5	2¾"	3"	11.0	10.5
12-Lb. Rail	8'-11"	9'-3"	1.5	2½"	12.0	2½"	3"	10.5	11.0
16-Lb. Rail	11'-2"	11'-6"	2	2½"	12.5	2½"	3"	11.0	11.5
20-Lb. Rail	13'-3"	13'-8"	2.5	3"	15.0	3"	3"	13.5	12.0

*Total Slab Thickness Including Sheetrock or Weatherwood . . . Minimum Thickness of Pyrofill 2".

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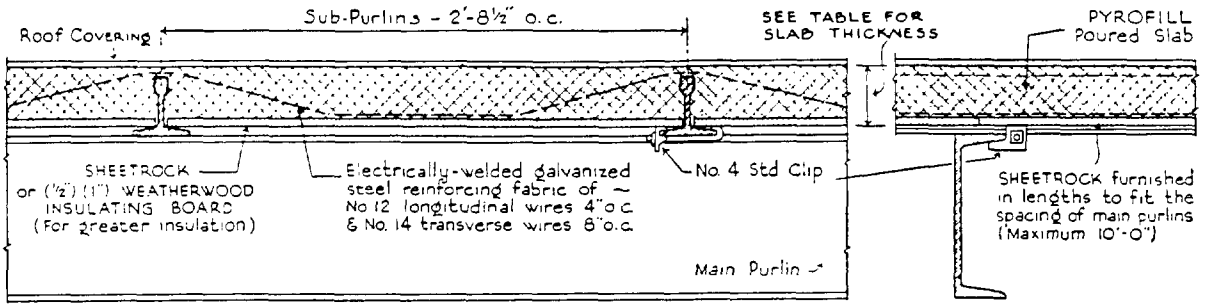
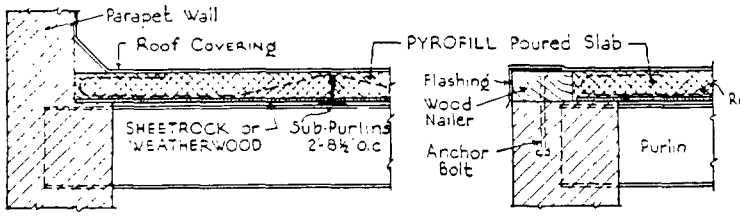
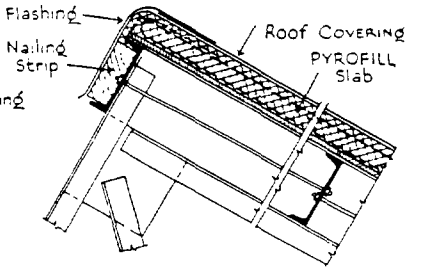
SHEETROCK-PYROFILL, WEATHERWOOD-PYROFILL DETAILS



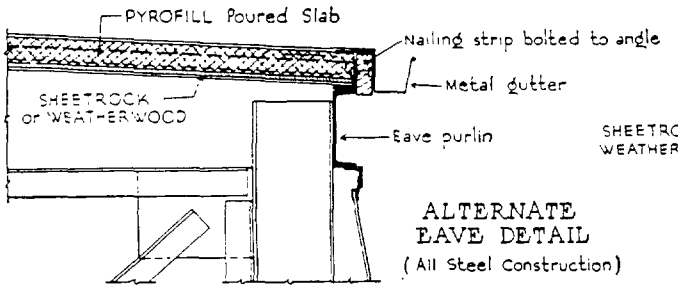
TYPICAL SHEETROCK OR WEATHERWOOD PYROFILL CONSTRUCTION



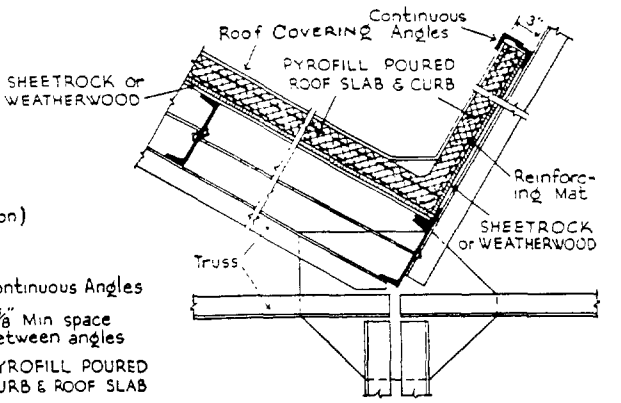
ALTERNATE DETAILS FOR ENDS OF BUILDING



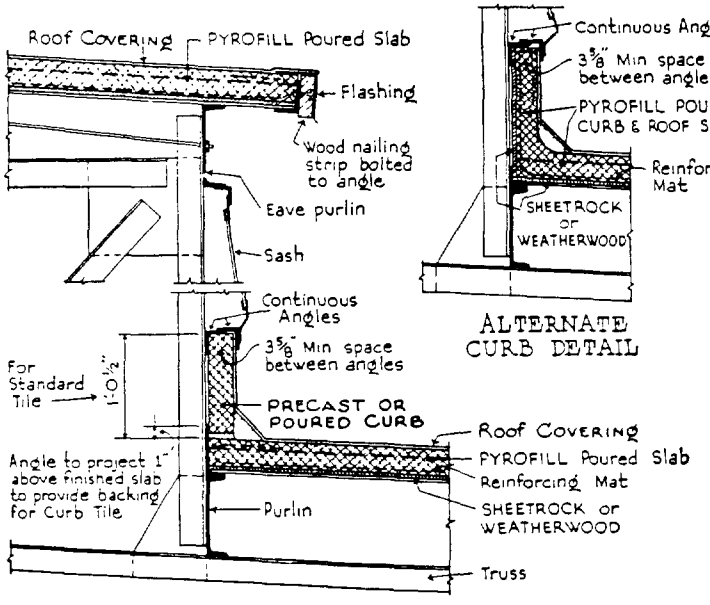
SAWTOOTH PEAK CONST'N.



ALTERNATE EAVE DETAIL
(All Steel Construction)

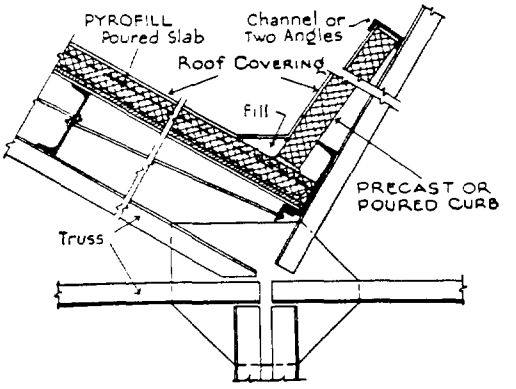


SAWTOOTH GUTTER CONST'N.



CURB & EAVE CONSTRUCTION FOR MONITOR

ALTERNATE CURB DETAIL



ALTERNATE SAWTOOTH GUTTER CONSTRUCTION

BB024 1030

United States U.S. Gypsum Company

PYROBAR GYPSUM SHORT SPAN ROOF TILE

The United States Gypsum Company's Pyrobar* Gypsum Short Span Roof Tile System is a construction using pre-cast gypsum units, 30" long, supported by sub-purlins, which are in turn clipped or welded to the main roof purlins.

These pre-cast Pyrobar gypsum tile, made in relatively small units, are an ideal fireproof nailing deck for ornamental roof coverings. Such roofs usually involve steep pitches, hips, valleys, and dormers which require the flexibility of short span units. The Solid Tile have excellent nail-holding power. They are thus admirably suited to dormitories, schools, public buildings, memorial buildings, private residences and similar structures.

The Short Span gypsum units are exceptionally strong, provide good heat insulation and light reflection and therefore make an excellent type of roof construction for industrial buildings such as factories and warehouses.

This type of construction is particularly well suited for re-roofing work as it can be installed immediately behind the removal of the old deck with practically no interruption of plant operations or exposure of building contents to the weather.

DESCRIPTION—Pyrobar Gypsum Short Span Roof Tile are made in both solid and hollow units. The solid type tile are 3x12x30 inches. The hollow type are furnished in standard sizes of 3x12x30 inches and 4x12x30 inches.

All units except the 3" Hollow are reinforced with an electrically welded, galvanized steel mat so designed as to afford top and bottom reinforcing and so formed as to insure accurate location of the mat. The 3" Hollow tile are reinforced with two ⅜" cold rolled channels. In addition, there are two No. 8 wires mechanically secured to the channels at each end to serve as lateral-tie reinforcement which provide end anchorage for the channels. The channels are rigidly held in place by means of special devices on the moulds insuring accurate positioning of the reinforcing.

USES—The solid tile are ideal for the ornamental type of roof where a pre-cast, fireproof unit of great flexibility and good nail holding power is desired. The solid tile are also well adapted to industrial buildings, both for flat and for pitched roofs. Where lighter weight and greater insulation are desired, the hollow tile are suggested. The 4" hollow tile afford better heat insulation with some saving in weight, while the 3" hollow tile permit a further saving in weight and in cost. Hollow tile are only recommended for roofs where a built-up roof covering is to be used. They are satisfactory for the nailing required for the application of built-up roof covering, but hollow tile are not recommended as a nailing base for ornamental or slate roof covering.

SUB-PURLINS—USG engineers, recognizing the need for a more efficient and economical tee section, have developed the USG Bulb Tee Sections. These special, patented sections have greater strength and greater bearing surface for the tile than standard tees of equal sectional area and weight.

NAILING—Ordinary Built-up Roof covering is applied in accordance with standard practise.

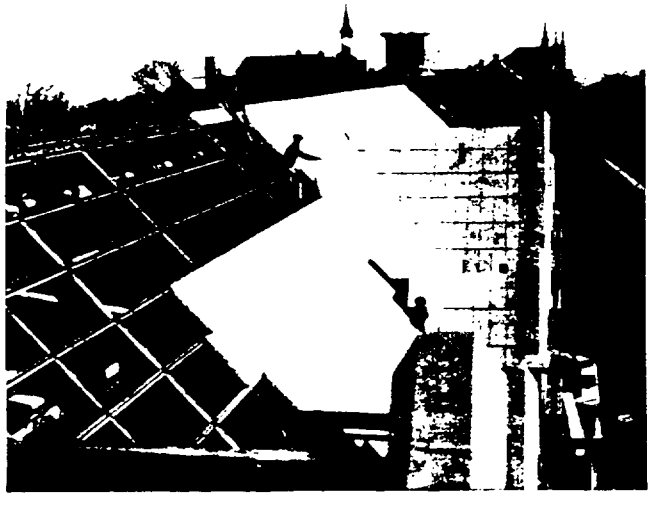
Where slate or ornamental tile roofings are to be nailed directly to the deck (3" solid tile), square-cut nails having not less than 2" penetration into the gypsum should be used. When heavy roofings are to be applied on very steep slopes, they should be fastened by bolting through the slab or nailed to wood grounds which are, in turn, secured directly to the roof deck. Because of the great expansion of sheet metal, this type of roofing requires thoroughly rigid fastening and the metal cleats used for such purpose should be spaced not over 8" on centers and secured with two nails each.

HEAT INSULATION—Gypsum is among the highest in insulating value of the fireproof structural building materials. The under-surface of the gypsum roof remains at practically the same temperature as the interior of the building, regardless of outside temperature. This naturally means a saving in fuel bills, and makes possible very uniform room temperatures and better working conditions both summer and winter.

The table below contrasts the B.T.U. loss per hour, per square foot, per degree difference in temperature of several types of decks:

Corrugated Sheet Iron	1.50
Cement Tile 1⅝" thick	.68
Stone Concrete 3" thick	.61
Pine Plank 2" thick	.34
Pyrobar Short Span Tile 3" solid	.43
Pyrobar Short Span Tile 3" hollow	.39
Pyrobar Short Span Tile 4" hollow	.35

MAINTENANCE—Since gypsum is inert and no progressive corrosion of the reinforcement takes place, the maintenance cost is practically nothing.



Erecting Pyrobar Gypsum Short Span Roof Tile on Sloping Roof



Erecting Pyrobar Gypsum Short Span Roof Tile on Flat Roof

BB024 1031

OUTSTANDING ADVANTAGES

ADAPTABILITY—Pyrobar Short Span Roof Tile supported on tee sub-purlins is by far the most flexible precast roof construction. It is easily cut and fitted at hips, valleys, dormers, and openings which is very important for many roofs. It can be used with economy on any type of factory or industrial building, power plant, school, etc. The solid tile is a nailing base.

FIREPROOF—Gypsum is absolutely incombustible and the inherent advantages of gypsum for fire-proofing are universally recognized.

LIGHT WEIGHT—The weight of the tile plus the USG Bulb Tee is only about 18 lbs. per square foot (less than half the weight of 3 inches of stone concrete), permitting structural steel savings.

APPEARANCE—The interior appearance of the tile is neat and the undersurface is an excellent light reflector.

ECONOMICAL—Pyrobar Roof Tile are low in cost and permanent. The large light weight units are easily and speedily erected in any weather in which it is possible to work.

The Pyrobar tile are laid directly on the supporting steel work and require only the grouting of joints to make the roof ready for the waterproof covering. Waterproofing follows immediately, protecting the interior, and thus making possible early occupancy.

Master Specifications

PYROBAR GYPSUM SHORT SPAN ROOF TILE

(1) WORK INCLUDED

NOTE—*Here list the various roof areas to be constructed of Pyrobar Precast Roof Tile and specify the prescribed live load. If more than one type of tile is used, list separately the areas constructed of each.*

(2) MATERIALS

(2a) SHORT SPAN TILE—Where so designated, the roof slab shall be constructed of Pyrobar Short Span Roof Tile **[3 x 12 x 30 in. Solid] [3 x 12 x 30 in. Hollow] [4 x 12 x 30 in. Hollow]** accurately laid, without mortar, upon the supporting steel with full bearing and with tile units laid tight. All joints on top surface shall be filled with gypsum mortar and the roof left smooth and true, ready for the application of the waterproof roof covering.

(2b) SPECIAL UNITED STATES GYPSUM BULB TEE SUB-PURLINS—All sub-purlins shall be special United States Gypsum Bulb Tees, with a shop coat of light gray paint.

(2c) CURB TILE, END WALLS, ETC.—Where so indicated on the plans, curbs and end walls shall be constructed with 3 in. Solid Pyrobar Curb Tile set in gypsum mortar.

(2d) GYPSUM MORTAR—Gypsum mortar shall consist of one part of unlibered gypsum cement plaster and not to exceed two parts of clean, sharp sand. Mix to the proper consistency in a clean mortar box with clean water.

(2e) SADDLES AND DRAINAGE FILL—Saddles and Drainage Fill shall be constructed of Pyrofill (Gypsum Fiber Concrete) consisting of calcined gypsum and 12 lbs. of clean soft wood fiber to 80 lbs. of gypsum and sufficient clean water for proper consistency.

(3) ERECTION

(3a) BY UNITED STATES GYPSUM COMPANY—All Pyrobar Precast Roof Tile Construction shall be completely erected by the Engineering Sales Division of the United States Gypsum Company or one of its authorized erectors.

(4) WATERPROOF ROOF COVERING

NOTE—*Provide in the Roofing and Sheet Metal division of the specifications that the waterproof roof covering shall be applied as soon as possible after the gypsum roof slab is erected (preferably within twenty days).*

NOTE—*For application of ornamental roofing, such as slate, tile, and metal, see recommendations given on Page 4 under "Nailing".*

TEE SIZES AND ALLOWABLE SPANS

Based on 50 Lbs per Sq. Ft. Total Roof Load
Tees Spaced 2'-6¾" C. to C. M = 1/10 WL

Size of Tee	Allowable Span		Wt. of Tees Lbs. per Sq. Ft. of Roof
	18,000 lbs. Per Sq. In. Stress	20,000 lbs. Per Sq. In. Stress	
USG 1-15 16"x1⅞" 2.65 LB. BULB TEE	6'-4"	6'9"	1.04
USG 2-7 16"x2⅜" 2.7 LB BULB TEE	7'-2"	7'7"	1.05
2½"x2½" 5.5 LBS.	7'-8"	8'-1"	2.15
2½"x3" 6.1 LBS	9'-2"	9'-8"	2.4
3"x3" 6.7 LBS.	9'-4"	9'-10"	2.61

Sizes and Weights of Pyrobar Gypsum Short-Span Roof Tile

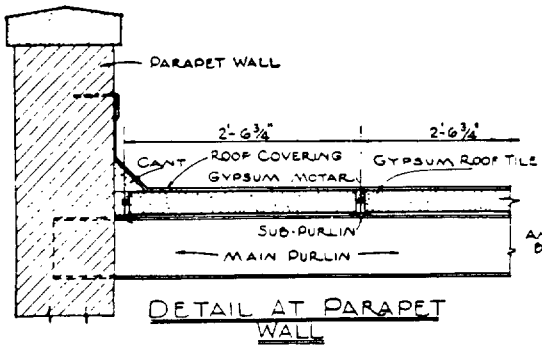
3"x12"x30" Solid Tile Wt. 17 Lbs. per Sq. Ft.
3"x12"x30". Hollow Tile Wt. 12½ Lbs. per Sq. Ft.
4"x12"x30" Hollow Tile Wt. 15 Lbs. per Sq. Ft.

NOTE: Add Weight of Tees to Weight of Tile to Secure Weight of Roof Deck.

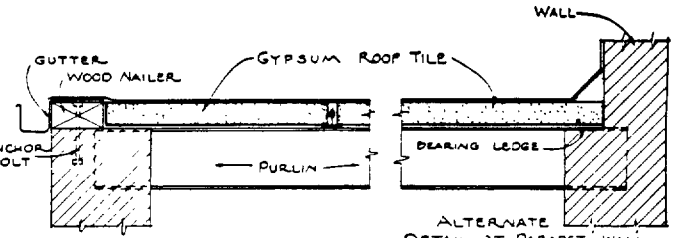
*Reg. Trade-Mark.

BB024 1032

DETAILS OF PYROBAR GYPSUM SHORT SPAN ROOF TILE

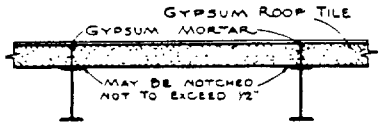


DETAIL AT PARAPET WALL

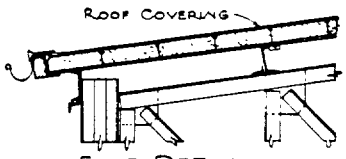


EAVE WALL DETAIL

ALTERNATE DETAIL AT PARAPET WALL



DETAIL SHOWING USE OF LIGHT JOISTS IN PLACE OF SUB-PURLINS



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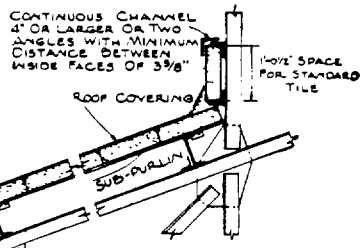
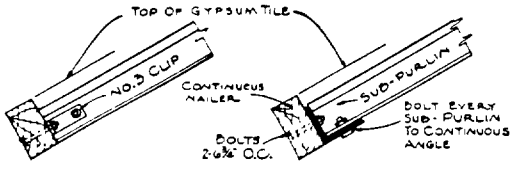
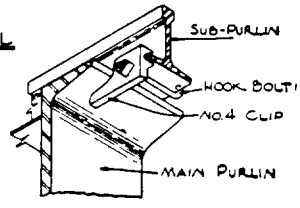


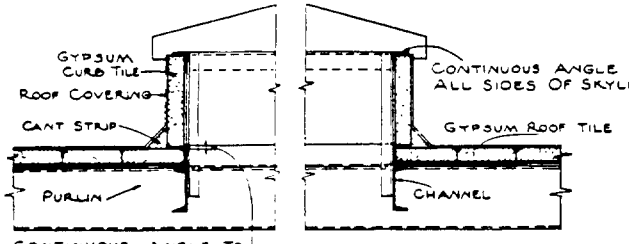
MONITOR CURB DETAIL

EAVE DETAIL



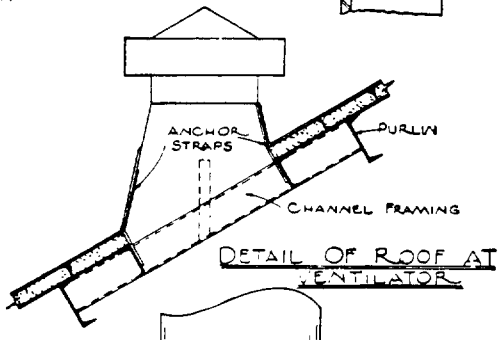
EAVE CONSTRUCTION DETAILS



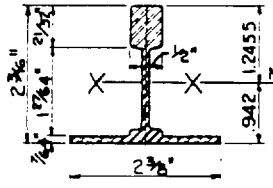


CONTINUOUS ANGLE TO PROJECT 1" ABOVE TOP OF FINISHED SLAB TO PROVIDE BACKING FOR CURB TILE.

CURB DETAIL
SKYLIGHTS-VENTILATORS-ETC.

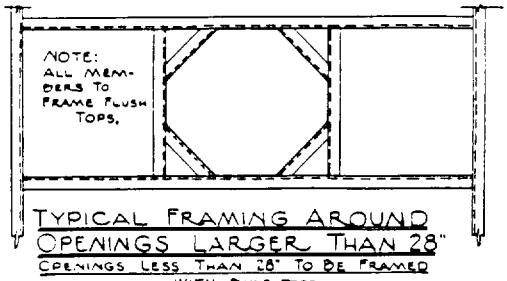


DETAIL OF ROOF AT VENTILATOR

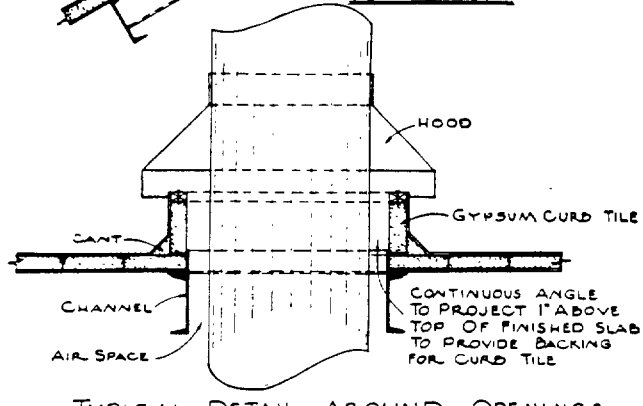


PROPERTIES
WEIGHT=831 LB PER YD.
I. X-X = .588 IN.⁴
S. X-X = .47 IN.³

Nº 218 USG. BULB TEE



TYPICAL FRAMING AROUND OPENINGS LARGER THAN 28"
OPENINGS LESS THAN 28" TO BE FRAMED WITH BULB TEES



TYPICAL DETAIL AROUND OPENINGS EXTENDING THROUGH ROOF

BB024 1033

TONGUE AND GROOVE GYPSUM ROOF and FLOOR TILE

To provide a light weight, incombustible and economical construction for roofs and floors in connection with steel framing the United States Gypsum Company furnishes a complete line of Tongue and Groove Gypsum Roof and Floor Tile. Ease of erection is a feature of the entire line.

All types of this line are so constructed and so reinforced that the ends need not come directly over supports but may extend into the next panel. The design enables the tile to cantilever so any spacing of supports, within the limits for each type, may be used.

TYPES

2½" x 10" x 6'-0" (EMBEDDED REINFORCING) TONGUE AND GROOVE GYPSUM ROOF AND FLOOR TILE—Cast in steel moulds with electrically welded galvanized steel reinforcing completely embedded in the gypsum mass. Tongue and groove joints are provided on all four edges.

For floor construction with supports spaced not over 30 inches on centers these tile will safely support a load of 150 pounds per square foot. For roof construction with supports spaced not over 48 inches these tile will safely support a load of 50 pounds per square foot. The weight is only 15 pounds per square foot.

3" x 12" x 10'-0" CHANNEL SECTION (EMBEDDED REINFORCING) TONGUE AND GROOVE GYPSUM ROOF AND FLOOR TILE—Reinforced with two channels, 2 inches deep, made into a frame with ¾ inch channel ties and with additional electrically welded galvanized steel fabric which also provides reinforcement in the tongue and groove edges. The tongue and groove on all four edges provides an interlock which develops continuity of the units.

Load and deflection tests conducted by Columbia University of New York City showed that the following superimposed working loads are very conservative:

Construction	Span	Load
Floors	Up to 5'-0"	150 lbs. per sq. ft.
Roof	Up to 7'-0"	75 lbs. per sq. ft.

USG STEEL BOUND GYPSUM TONGUE AND GROOVE TILE—Made in two sizes and types. The Medium Span tile is 2" x 15" x 8'-0" designed for roofs on spans up to 4 feet and for floors on spans up to 3 feet. The Long Span tile is 2" x 12" x 10'-0" and is designed for roofs on spans up to 7 feet and for floors on spans up to 5 feet. See load table.

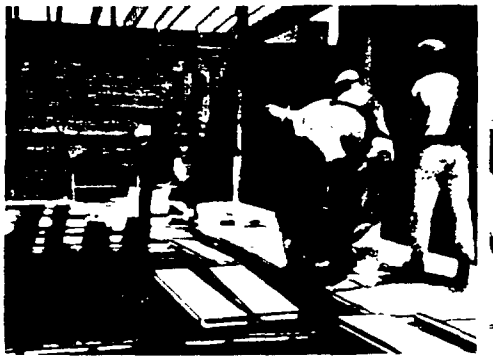
All tile are mill moulded and have steel tongue and groove edging on sides and ends, firmly anchored into the gypsum. In addition they are manufactured with an electrically welded galvanized steel fabric as reinforcement for the gypsum.

Load and deflection tests conducted by nationally recognized testing laboratories showed that the following superimposed working loads are very conservative:

Construction	Span	Conservative Loads
LONG SPAN STEEL BOUND GYPSUM TILE—2" x 15" x 10'-0"		
Floors	Up to 5'-0"	150 lbs. per sq. ft.
Roofs	Up to 7'-0"	75 lbs. per sq. ft.
MEDIUM SPAN STEEL BOUND GYPSUM TILE—2" x 15" x 8'-0"		
Floors	Up to 3'-0"	150 lbs. per sq. ft.
Roofs	Up to 4'-0"	75 lbs. per sq. ft.

The weight of both types is 12 pounds per square foot.







Above: USG 2½ in. T&G Roof and Floor Tile are quickly and easily erected

Left: USG 3 in. Channel Section T & G Roof and Floor Tile

Right: Installing USG Steel Bound Gypsum T & G Tile on airdrome, North Beach, Long Island, N. Y.

OUTSTANDING ADVANTAGES

ECONOMICAL—Low first cost plus low erection cost makes any of these USG T&G Gypsum Tile unusually economical. In addition their light weight permits economies in steel design that are reflected throughout the structure.

FIREPROOF—Gypsum will not support combustion at any known temperature.

LIGHT WEIGHT—Gypsum is one of the lightest of the structural building materials, weighing only about forty per cent as much as concrete. Light weight is combined with structural strength in USG Tongue and Groove Gypsum Tile.

APPEARANCE—The undersurface presents a neat, clean appearance with high light reflection.

EASE OF ERECTION—The large units are laid directly on the supporting steel and anchored in place with galvanized clips fastened into the sides of the tile and engaging the top flanges of the steel supports. End joints of the tile are staggered, coming where they may either on or between the steel supports. Fractional length units should be used for starting alternate courses to break joints. Full length units can be cut where necessary without appreciable waste.

ANY ROOF COVERING—Ordinary Built-Up Roof Covering is applied according to standard practice.

Where light slate or other light ornamental tile roofings are to be nailed to the deck, square cut nails having 1½ in. penetration into the gypsum should be used.

Where the slope is greater than 45 degrees or when heavy roofings are to be applied, they should be fastened by bolting through the slab or nailed to wood grounds which are in turn secured directly to the roof deck, by the nailing or bolting.

ANY FLOOR FINISH—Tile may be made ready for linoleum or composition floor covering by the application of a ¼ in. thick coating of United States Gypsum Company's PYROTOP—a prepared underlayment requiring the addition of water only and trowelled in place.

Master Specifications

TONGUE and GROOVE GYPSUM ROOF and FLOOR TILE

The **(roof) (and) (floors)** shall consist of USG **(2½" x 10" x 6'-0") (3" x 12" x 10'-0" Channel Section) (Long Span 2" x 15" x 10'-0" Steel Bound) (Medium Span 2" x 15" x 8'0" Steel Bound)** Tongue and Groove Gypsum Tile as manufactured by the United States Gypsum Company.

All tile shall be set on the supporting steel with close joints and with end joints staggered in adjacent rows starting with alternate full and fractional length tile. Each tile shall be anchored to the supporting steel at every point of support with clips alternating on opposite sides of beam flanges. The tile shall be cut to fit around all openings and wherever required to fit the steel frame.

NOTE—*Insert in the steel specifications that proper framing to support the tile shall be provided around all openings wider than ten inches and that the tops of joists shall be set level and true to support the tile firmly.*

• • •

PYROBAR GYPSUM PARTITION and FURRING TILE

DESCRIPTION

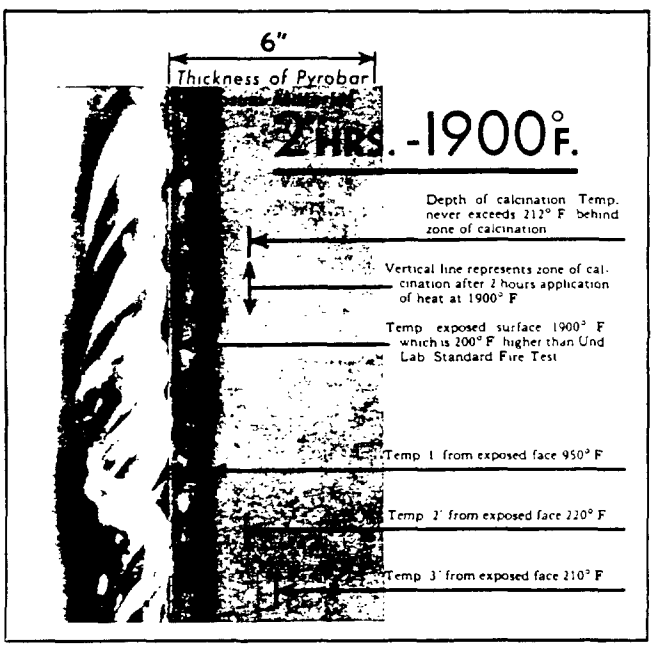
Pyrobar tile are for use in buildings of all types and classes. They are used to form fireproof interior non-bearing partitions, for furring, for elevator and stairway enclosures, for fireproof enclosures around pipe chases, ducts, shafts, etc., and for fireproofing structural steel columns, beams and girders.

Pyrobar tile are uniform in size, and are of uniform strength and density. They are accurately moulded, by a continuous automatic machine process, into units that are 12 inches high and 30 inches long. Furring tile are made 1½ and 2 inches thick; partition tile are made solid, 2 and 3 inches thick, and hollow, 3, 4, 5, and 6 inches thick. Smooth face tile are made for use where the furring and partitions are to remain unplastered.

Pyrobar tile meets fully the standard specifications for Gypsum Partition tile or block of the American Society for Testing Materials.

RESULTS OF TESTS

Results of fire tests made by Underwriters' Laboratories on gypsum tile are shown in the illustration at right, above. The tile were subjected to a constant temperature of 1900° F. for two hours. At the end of that time, the temperature of the tile, 2 inches away from the flame, was but 220° F. The critical temperature at which steel begins to lose its strength is 600° F.



BB024 1035

OUTSTANDING ADVANTAGES

Fireproof—Pyrobar Gypsum Tile are absolutely incombustible.
Light Weight—Less weight than other commonly used materials.
Confines Fire—Demonstrated by illustration on previous page.
Ideal Plaster Base—Gypsum tile bonds with gypsum plaster.
Cheaply Erected—Light, 2½ sq. ft. units are easy to handle.
Plaster Savings—Straight, uniform tile assure even, true wall
Economical—No waste in cutting; breakage is almost negligible
Alterations—Alterations easily made with no waste or mess

SIZES AND WEIGHTS OF PYROBAR PARTITION AND FURRING TILE

Size of Pyrobar Gypsum Tile, In.		Recommended heights for each size	Weight tile per sq. ft., lb.	Weight mortar per sq. ft., lb.	Weight plaster, one side, per sq. ft., lb. ½ in. grounds	Total weight plastered, one side, per sq. ft., lb.	Weight plaster two sides per sq. ft., lb.	Total weight plastered, two sides, per sq. ft., lb.	Approx. mortar requirements per 1000 sq. ft.	
									Pounds Set Fast Cement	Cubic yards sand
1½-in. Split	1½ x 12 x 30	Furring†	4.9	1.4	3	7.9			500	0.625
2-in. Split	2 x 12 x 30	Furring†	6.4	1.4	3	9.4			600	0.75
2-in. Solid	2 x 12 x 30	10 feet*	10.0	1.5	3	13.0	6	16.0	600	0.75
3-in. Hollow	3 x 12 x 30	13 feet*	10.0	2.0	3	13.0	6	16.0	800	1.00
3-in. Solid	3 x 12 x 30	15 feet†	13.0	2.0	3	16.0	6	19.0	800	1.00
4-in. Hollow	4 x 12 x 30	17 feet*	13.0	2.5	3	16.0	6	19.0	900	1.125
5-in. Hollow	5 x 12 x 30	20 feet*	17.2	2.75	3	20.2	6	23.2	1000	1.25
6-in. Hollow	6 x 12 x 30	30 feet*	19.0	3.0	3	22.0	6	25.0	1100	1.40

*Underwriters' Laboratories recommendations. †No Underwriters' recommendation.

Master Specifications

PYROBAR GYPSUM PARTITION and FURRING TILE

(1) WORK INCLUDED

All interior non-bearing partitions, exterior wall furring and column covering shall be built of Precast Pyrobar Gypsum Partition Tile of the thickness indicated on the plans.

(2) WORK BY OTHERS

(2a) All reinforcing bars for reinforced lintels will be furnished by others. **(2b)** All rough bucks for openings will be provided and accurately set by others. **(2c)** All wood nailing blocks to receive grounds, etc., will be provided and attached by others.

(3) MATERIALS

(3a) MORTAR—Mortar shall consist of one part United States Gypsum Company's Setfast Cement to three parts by weight of clean, sharp, dry sand. (Do not use Portland Cement or lime mortar.) No mortar shall be retempered.

(4) ERECTION

(4a) LAYING—All partitions, furring and column covering shall be started on the fireproof floor and shall be set plumb, straight and true with vertical joints broken, and shall be wedged at the ceiling and slushed with mortar. The corners shall be built log cabin fashion, the tile interlocking. All tile shall be laid with full flush joints to a line, with horizontal beds uniformly level on each course. All joints, chinks and crevices between the tile and other work shall be filled with mortar well slushed in.

(4b) PARTITIONS—All partitions coming in contact with existing walls shall be anchored by driving spikes into the walls in the joints of each course.

(4c) BUCK ANCHORS—Door bucks shall be anchored to the partitions by driving 10d cut nails into them in the joints of each course of tile or secured by any approved clip.

(4d) FURRING—Furring tile shall be laid up against the wall and securely anchored to the wall every square yard with 10d cut nails, metal ties, anchor straps or other approved fasteners left in place by the exterior masonry contractor.

(4e) LINTELS—Openings not greater than 22 inches wide shall be spanned with a single tile. Openings over 22 inches but not more than 4 feet shall be spanned by tile laid in the form of a jack arch. Openings over 4 feet but not more than 6 feet shall be spanned by reinforced gypsum lintels. Openings over 6 feet shall be spanned by steel lintels of approved design. All lintels must have at least 4 inch bearing at each end on the tile beneath.

NOTE—*Door bucks shall be made of 2 inch lumber of the same width as the thickness of the partition and to the edges shall be secured ½ in. x 2¼ in. plaster grounds forming a rabbet to receive the tile.*

NOTE—*Trim shall be secured to grounds or to nailing blocks set in the tile construction. Nailing blocks shall be not less than ⅞ in. thick and securely nailed to the ends of the tile before the tile is set in the wall. Blackboards, toilet and heavy fixtures shall be secured by bolting through the tile construction or shall be nailed to nailing blocks not less than 1½ in. thick and spaced not over 15 inches on centers.*

BB024 1036

United States U.S. Gypsum Company

PYROBAR BEAM and GIRDER FIREPROOFING

WHY USE FIREPROOFING?—At no point in the building structure is maximum fire protection of such vital importance as around structural steel members, for should these members fail the whole building structure would collapse.

In fire occurs the temperature of the structural steel should be held below 1000° F.—the temperature at which steel begins to lose its strength rapidly.

WHY USE PYROBAR FIREPROOFING?—Nature has endowed gypsum with qualities which make it the ideal material for fireproofing purposes. It has been said that gypsum provides its own sprinkler system. That is literally true. The chemically combined water of crystallization remains in the gypsum throughout the years ready to repel fire whenever it attacks. Tests have shown that it is impossible for Pyrobar-protected steel to reach a higher temperature than 212° F. until the Pyrobar has completely calcined: just as it would be impossible to feel the heat of a blow torch through a piece of ice until after the ice had melted.

Calcination of and high heat transfer through Pyrobar requires hours even under severe fire conditions. In an Underwriters Laboratories test on 3-in. hollow Pyrobar gypsum partition tile a two hour exposure to 1900° F. failed to raise the temperature of the unexposed side of the wall over 90° above the room temperature.

Pyrobar will not spall under fire, for it can expand only through 142° (from 70° room temperature to 212°) even when exposed to the extremely high temperatures frequently reached in building fires. Many building failures have been caused by the spalling of the fireproofing, thus leaving the steel exposed to temperatures at which its strength was not sufficient to support the loads.

OTHER PYROBAR ADVANTAGES—In addition to fire protective advantages, Pyrobar Steel Fireproofing has these further qualities:

1. Light weight—enables steel savings.
2. Easy to cut and fit—meets the wide variety of conditions which construction imposes.
3. Good plaster base—gypsum bonds with gypsum. Pyrobar is an ideal base for gypsum plaster.
4. Good appearance unplastered—cast in steel moulds Pyrobar units are straight and true. Note the clean cut, uniform, white appearance in job photographs.
5. Shapes for every kind of framing—No matter what your problem there is a type of Pyrobar to fit your needs exactly.

PYROBAR TYPES AND USES—Pyrobar Gypsum Shoe Tile are made for beams having flange widths up to 9 in. and are the most economical type where small steel beams are used.

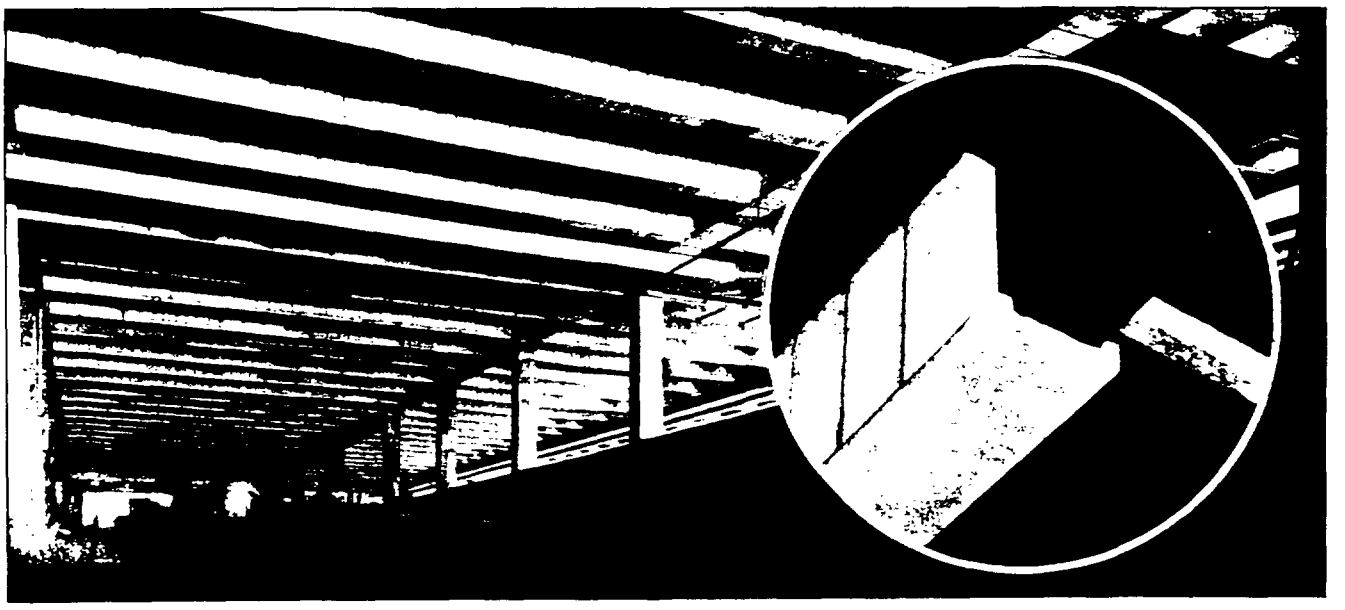
Pyrobar Gypsum Strap Type Soffit Tile can be used for beam flanges wider than 9 in.

Pyrobar Gypsum Soffit Tile are adapted to flange widths from 3 to 17½ in., to built-up girder sections, and are particularly desirable from the standpoint of appearance where the fireproofing is not to be plastered.

Pyrobar Gypsum Angle Tile are for very large built-up steel sections. Standard hollow Pyrobar gypsum partition tile is cut to size on the job and suspended by clips on the bottom of such sections.

In conjunction with any of the above flanges shapes, Pyrobar Gypsum Partition Tile is used to cover the beam sides. The assembled constructions all provide a minimum of 2 in. of protection to the steel, which fulfills the requirements of the National Board of Fire Underwriters.

ANOTHER TEST REPORT—The Bureau of Standards' report (Technological Paper No. 130) says, "This table shows that the length of time required for a temperature of 600° C. (1112° F.) to be attained at a depth of 1½ in. does not vary greatly in the clay and concrete specimens. The gypsums are seen to be distinctly better than clay and concrete in this respect, only one of them (out of 28 total specimens) reaching a temperature of 600° C. at a depth of 1½ in. in the three and one-half hour test. Obviously, the gypsum specimens indicate distinctly superior thermal protection for embedded steel."



Pyrobar Beam and Girder Fireproofing Used in New Chicago Post Office—Graham, Anderson, Probst and White, Architects

BB024 1037

PYROBAR BEAM AND GIRDER FIREPROOFING

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

All steel **(columns) (beams) (girders) (trusses)** shall be protected with precast Pyrobar gypsum fireproofing.

NOTE—*List and locate any special requirements not clearly indicated on plans and details. Note exceptions, if any.*

(2) MATERIALS

(2a) FIREPROOFING—For all beams shall consist of Pyrobar Gypsum Tile of the proper shapes and sizes for covering the bottom flanges. Covering of beam sides and covering for columns shall be cut to size on the job from standard **(2-in. solid) (3-in. hollow)** Pyrobar Gypsum Partition Tile. All gypsum fireproofing materials shall be as manufactured by the United States Gypsum Company. All steel shall be protected with a minimum of 2 in. of precast Pyrobar.

(2b) MORTAR—Shall be mixed in a clean mortar box in the proportions of one part gypsum cement to three parts sand, by weight, and sufficient water to bring to the right consistency.

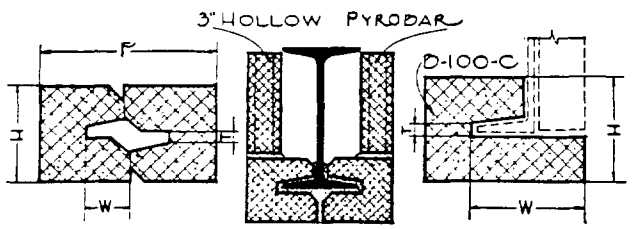
NOTE—*Do not use Portland cement or lime.*

(3) ERECTION

All fireproofing shall be erected in strict accordance with the United States Gypsum Company's standard details. All units shall be laid in gypsum mortar with full flush joints, true to line and plumb.

• PYRODAR SHOE TILE •

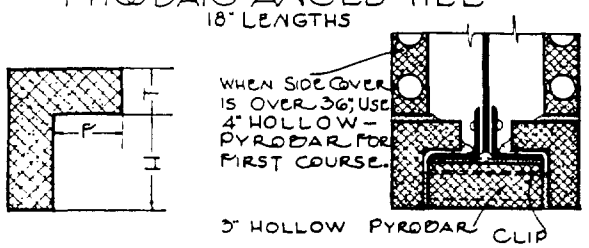
• 18" LENGTHS •



TYPE	MAX. WIDTH OF FLANGE	F	H	T	W	WEIGHT PER LIN. FT.
D-40	5"	7⅝"	4¼"	½"	2"	12.5 LBS.
D-50	6"	8¼"	4¼"	⅝"	2½"	13 "
D-65	7½"	9¾"	4¼"	13/16"	3¼"	15 "
D-80	9"	10½"	4¼"	15/16"	4"	16 "
D-100-C CHANNELS			4½"	½"	4⅞"	10 "

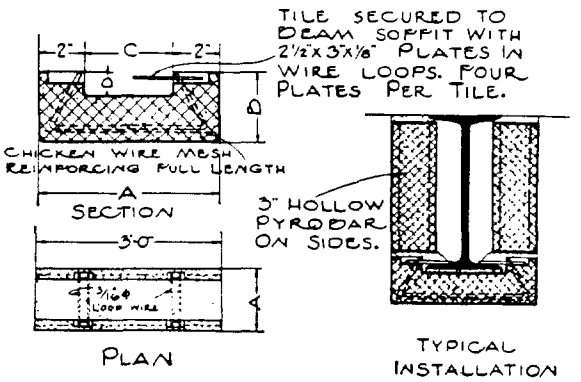
• PYRODAR ANGLE TILE •

18" LENGTHS



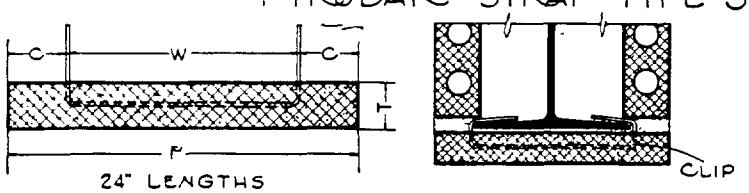
TYPE	F	H	T	WEIGHT PER LIN. FT.
L-34	3"	4"	2"	15 LBS.
L-45	4"	5"	2"	18.5 "
L-46	4"	6"	2"	20 "

• PYRODAR SOFFIT TILE •



TYPE	A	B	C	D	WEIGHT PER LIN. FT.	MAX. WIDTH OF FLANGE
D-30-S	7¼"	3"	3¼"	1"	8 LBS.	3"
D-40-S	8¼"	3¼"	4¼"	1¼"	9 "	4"
D-50-S	9¼"	3¼"	5¼"	1¼"	10 "	5"
D-60-S	10¼"	3¼"	6¼"	1¼"	11 "	6"
D-70-S	11¼"	3½"	7¼"	1½"	12 "	7"
D-80-S	12¼"	3½"	8¼"	1½"	13 "	8"
D-90-S	13¼"	3½"	9¼"	1½"	14 "	9"
D-100-S	14¼"	3¾"	10¼"	1¾"	15 "	10"
D-115-S	15¾"	3¾"	11¾"	1¾"	16 "	11½"
D-130-S	17¼"	3¾"	13¼"	1¾"	17½"	13"
D-145-S	18¾"	4"	14¾"	2 "	19 "	14½"
D-160-S	20¼"	4"	16¼"	2 "	20½"	16"
D-175-S	21¾"	4"	17¾"	2 "	22 "	17½"

• PYRODAR STRAP TYPE SOFFIT TILE •



TYPE	F	C	T	W	WEIGHT PER LIN. FT.
S-10	15¼"	2½"	2"	10"	13 LBS.
S-11	15¼"	2 "	2"	11"	13 "
S-12	17¼"	2½"	2"	12"	14.5 "
S-13	17¼"	2 "	2"	13"	14.5 "
S-14	19¼"	2½"	2"	14"	16 "
S-15	19¼"	2 "	2"	15"	16 "

BB024 1038

United States U.S.G. Gypsum Company

USG STEEL ROOF DECK

GENERAL—

Deck Plates—USG deck plates are rolled from copper-bearing steel. Mill painted in gray. Other materials on special order. USG Deck Plates are 18 in. wide with 1½ in. deep reinforcing ribs, 6 in. on centers. Stiffening beads are formed midway between the ribs. Decks plates are interlocking and end-lapping type, clipped together when erected, forming an integral surface for the application of insulation and roofing materials.

Clips—Two standard types. One for fastening the deck plates to the purlins and the other for locking the plates together between the purlins.

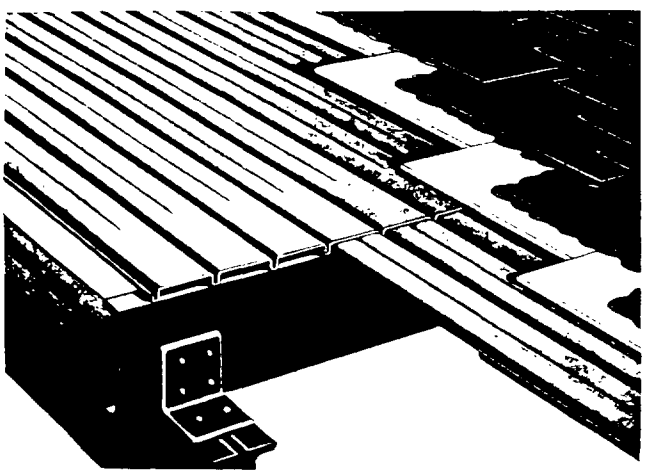
INSULATION—The accompanying table gives the heat transmission expressed in B.t.u. per hour per sq. ft. per degree difference in temperature. Five-ply roofing is included.

Deck without insulation..... .95 B.t.u.'s

Deck with ½-in. insulation..... .39 B.t.u.'s

Deck with 1-in. insulation..... .25 B.t.u.'s

Deck with 1½-in. insulation..... .18 B.t.u.'s



Above: Details of USG Steel Roof Deck. At Right: Dimensional Cross-Section of USG Steel Roof Deck

ADAPTABILITY—USG Steel Roof Decks are adaptable for all steel frame structures, fitting any purlin spacing.

ENGINEERING DATA—The allowable safe loads given in the table below are based on actual tests on bare plates. Application of insulation gives additional rigidity to the deck.

ALLOWABLE SAFE LIVE LOADS—POUNDS PER SQ. FT.

U.S.S. Ga.	Clear Span									
	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"
22	83	66	53	44	37					
20			81	67	56	48	41			
18					71	60	52	45	39	35

Factor of safety for 22 and 20 Gauge—4.
Factor of safety for 18 Gauge—3.5.

Weight of 20 gauge deck is 2.4 lbs. per sq. ft.; 18 gauge weighs 3.2 lbs. Total dead load, including insulation and roofing material, is approximately 5 lbs. per sq. ft.

ADVANTAGES—

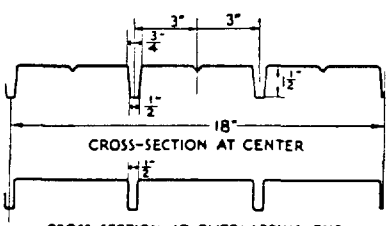
Long Life—The use of copper-bearing steel and insulation assures long life and low maintenance.

Economy—Cost is low for an incombustible roof deck.

(1) Structural Steel Savings result from light weight of roof unit.

(2) Fuel Costs are reduced through the use of insulation.

(3) Erection is rapid, due to simplicity of design and method of clipping. Saddles are made from deck plates and are easily placed. These features speed completion of the building and effect economies in construction.



CROSS-SECTION AT OVERLAPPING END

Results — Clean, sanitary and pleasing interior. Heat insulation value depends on the thickness and efficiency of the roof insulation board used.

Master Specifications

USG STEEL ROOF DECK

(1) WORK INCLUDED

NOTE—*Here list the various roof areas to be constructed of USG Steel Roof Deck.*

(2) MATERIALS

The steel deck shall be manufactured by the United States Gypsum Company from copper-bearing steel and painted light gray after fabrication.

Deck plates shall have reinforcing ribs not more than 6 in. O.C., 1½ in. deep, 4 in. wide at base. Plates shall have stiffening beads formed into the plates midway between the reinforcing ribs. Deck plates shall be U.S.S. No. **[specify]** gauge.

Clips shall be furnished for securely fastening the deck plates to the purlins, and for interlocking adjoining deck plates together at the ends and midway between the purlins.

(3) ERECTION

Erection shall be done by an experienced erector, subject to the architect's approval.

All end laps shall be not less than 2 in. in length and shall be made directly over the purlins.

Each plate shall be securely fastened to the purlin by **[steel clips engaging the deck rib] [welding].**

Each plate shall be securely fastened to the adjoining plate by at least three intermediate clips.

BB024 1039

SEC. F · SOUND CONTROL SERVICE

Engineering Sales Division

• • •

RESEARCH, DEVELOPMENT AND SERVICE

ACOUSTICAL MATERIALS ASSOCIATION—Manufacturers of sound absorbing materials have formed the Acoustical Materials Association, the purpose of which is to promote research in architectural acoustics and furnish architects and builders with reliable data on acoustical materials. Official Laboratories have been established under the direction of the leading authorities on this subject. The Association published its first data in February, 1934, and its sixth publication in March, 1938. You may obtain a copy of this data by calling the nearest USG Office.

RESEARCH and DEVELOPMENT—All USG Sound Control Materials and Systems are the result of directed research at the Building Materials Laboratory of the United States Gypsum Company. This laboratory occupies an entire two story building owned by the United States Gypsum Company and located at 1253 West Diversey Parkway, Chicago, Illinois, especially equipped for research and testing. The research work is carried out under the direction of trained physicists and chemists, architectural engineers and investigators, comprising a personnel of some fifty individuals. Here new materials and methods are produced, tested and developed.

The laboratory is one of the few owned and maintained by a manufacturer of acoustical products. It is used to test and improve upon modern developments in the manufacture of acoustical materials. It is also used for control tests on the company's output, so that the acoustical absorption and sound insulation afforded by the sound control products of the United States Gypsum Company are constantly maintained equal or superior to the published determinations of recognized acoustical laboratories.

SERVICE—The United States Gypsum Company maintains a fully competent experienced corps of acoustical engineers, completely equipped to assist architects on any problem involving acoustical correction or sound insulation. They render this service, without obligation, in advance of the building construction or will gladly advise corrective methods for existing buildings in which sound difficulties are experienced.

In auditoriums this service includes analysis of the effect of curved or other sound concentrating surfaces, and investigation for objectionable echoes. In each case it indicates changes in design where they seem advisable. Where the reverberation is too great for comfort recommendations are made for economically covering the necessary areas with acoustical absorbents.

Because the United States Gypsum Company handles all phases of the problem including manufacture and installation through its Engineering Sales Division or its authorized erectors and provides, not only materials for sound absorption, but also a complete system for the insulation of sound, architects are assured that absorption materials will not be recommended where sound insulation is required or vice versa.

ACOUSTONE • USG ACOUSTICAL TILE

Incombustible • Decorative

PHYSICAL CHARACTERISTICS

COMPOSITION and THICKNESS—Acoustone* is formed from inorganic, specially processed filaments. It provides an unusually high degree of sound absorption. The standard thicknesses are ¾ and 1 inch.

ACOUSTONE D—TECHNICAL DATA—Acoustone D has been tested and approved as a sound absorbent of high efficiency by recognized acoustical laboratories.

Absorption—The coefficients of absorption shown below are from tests made by the Acoustical Materials Association Laboratories.

Pitch	C2	C3	C4	C5	C6	Noise Red. Coef.
Frequency	128	256	512	1024	2048	
UNPAINTED						
¾-in. Thick	.13	.21	.75	.90	.80	.65
1-in. Thick	.37	.65	.84	.79	.72	.75
BRUSH PAINTED WITH LEAD AND OIL PAINT						
¾-in. Thick	.10	.25	.80	.94	.82	.70
1-in. Thick	.43	.71	.83	.77	69	.75

SIZES (AREAS)—Tiles are made in the following standard rectangular sizes: 12 x 12 in., 9 x 18 in. Special shapes and sizes may be obtained when required.

OUTSTANDING DECORATIVE APPEARANCE—In addition to its high degree of acoustical efficiency, it is outstanding in its decorative effect. The surface texture is quite similar to travertine stone, surpassing it, however, in the richness and warmth it supplies through a wider range of color tones. From the viewpoint of design, it is adapted to harmonious, unobtrusive inclusion in any decorative scheme. Ashlar masonry walls for interiors can be constructed with Acoustone facings that are as beautiful as natural stone. Interiors in the modern trend may be delightfully handled in tile with a metallic lustre in many shades and colors. Acoustone may be readily cut to irregular sizes and shapes. It fits all decorative interiors and is particularly adaptable to modern motifs. The tile may be laid up in many interesting patterns. There is no disconcerting mechanical effect. It is sanitary and easily cleaned. Due to its natural beauty, Acoustone usually is installed without decoration. If desired, Acoustone may be painted without materially affecting its sound absorbent efficiency. Colored borders, cornices in relief, and modified coffered work are easily obtained. Joints between tile units may be accented with a V profile for decorative purposes or made less prominent as desired.

*Registered Trade-Mark

BB024 1040

COLORS—Acoustone is furnished in standard integral colors of light-reflecting white, ivory or cream. Special integral colors will be made to order. Acoustone may be painted with ordinary lead and oil or similar wall paints without materially affecting its acoustical efficiency. When left undecorated, the inherent beauty of Acoustone enhances any decorative plan. Acoustone has none of the appearance of a mechanical device. Its beauty improves the appearance of any room. It is available in delicate pastel shades for the enrichment of borders, with fields in efficient light reflecting shades. It is readily cleanable which greatly reduces maintenance costs.

INCOMBUSTIBLE—Since it is made from specially processed mineral filaments, Acoustone is incombustible.

LIGHT WEIGHT—Due to its extremely light weight, it is safely and permanently cemented over plaster in both new and old work.

EASILY CLEANED—The complete and thorough cleaning of the porous structure of Acoustone with an ordinary vacuum cleaner thoroughly evacuates any foreign matter that may become lodged in the tile. Accumulations of dirt on the surface of the material are easily removed by the same method restoring the original color and appearance. The cost of such cleaning is less than one-quarter of a cent per square foot of area cleaned and the wear on the tile, incidental to the cleaning, is so negligible that no appreciable difference is made in its sound absorbing ability after repeated cleanings.

DURABLE—Because Acoustone is made from especially processed mineral filaments integrally colored and completely cleanable, it is as enduring as the structure in which it is installed.

SANITARY—Acoustone offers complete sanitation. It is inorganic, durable, completely cleanable. It provides an aseptic, readily and cheaply cleaned sound absorbent for hospitals, sanitariums, and restaurants.

INSTALLATION—The manufacture and acoustical design of Acoustone is entirely under the control and is the sole responsibility of the United States Gypsum Company. Installation is by the United States Gypsum Company or its authorized erectors.

This policy enables the purchaser to buy a result without reference to the manner in which the result is obtained. It definitely fixes the responsibility as it frees the purchaser or the architect from all details.

Such a policy, of course, means that the United States Gypsum Company or its authorized erectors will refuse to install Acoustone where satisfactory results will not be obtained.

The installation of Acoustone may be made in busy offices, banks, restaurants, brokers' offices, hospitals, etc., at times that will eliminate any interruption in the usual routine.

For this work only experienced mechanics are employed, who will carefully protect the walls, floors and furnishings against damage during the installation.

ECONOMICAL—Acoustone is not expensive to install. When the savings due to its low maintenance costs are considered, it is actually a low cost acoustical material.

Specifications · ACOUSTONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Acoustone. If more than one thickness of Tile is used, specify the thickness for the various areas.*



Acoustone Ceiling in Office of Banker's Trust Co., New York

(2) BASE

NOTE—*Describe base.*

(a) On new work, a good level brown coat of plaster offers the best base for Acoustone.

(b) Acoustone may be applied direct to any clean level surface strong enough to support it.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) Acoustical treatment material shall be **[¾-in.] [1-in.]** thick Acoustone of colors selected by the architect.

(3b) Joints between Tiles shall be **[a V formed by accurately beveling the tile edges] [as detailed] [specify].**

(3c) Tiles on walls and fields of ceilings shall be of size, shape, disposition and color as shown on the various details and approved shop drawings.

(4) APPLICATION of ACOUSTONE

(4a) Acoustone shall be completely erected by the United States Gypsum Company or one of its authorized erectors of sizes, colors and pattern shown on the drawings and details.

(4b) The Tile shall be laid close, accurately cemented in position in full conformance with the manufacturer's specifications.

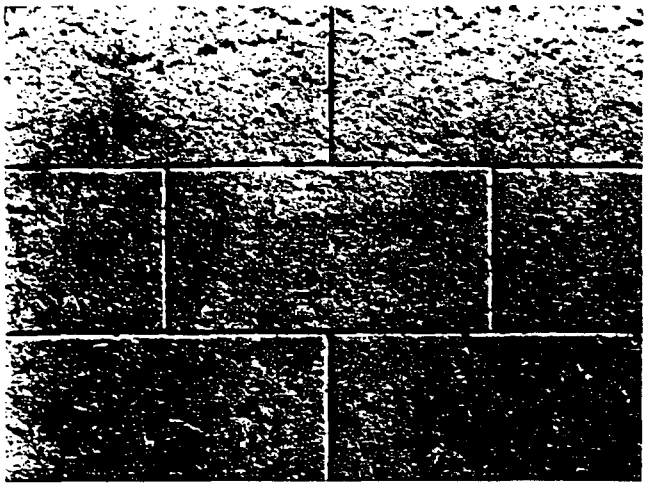
SHORT FORM

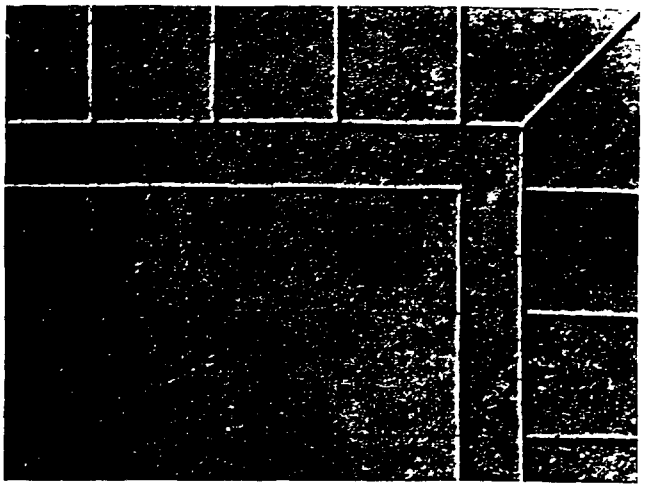
The contractor shall allow the sum of $..... to cover the cost of acoustical treatment, using Acoustone to be furnished and erected by the United States Gypsum Company or one of its authorized erectors as directed and approved by the architect.

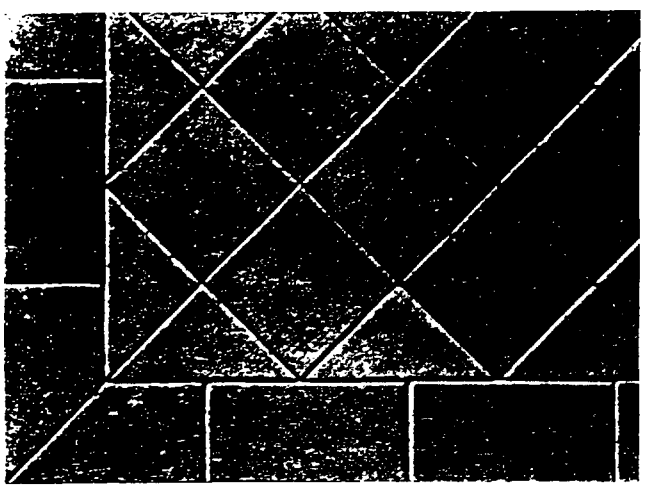
BB024 1041

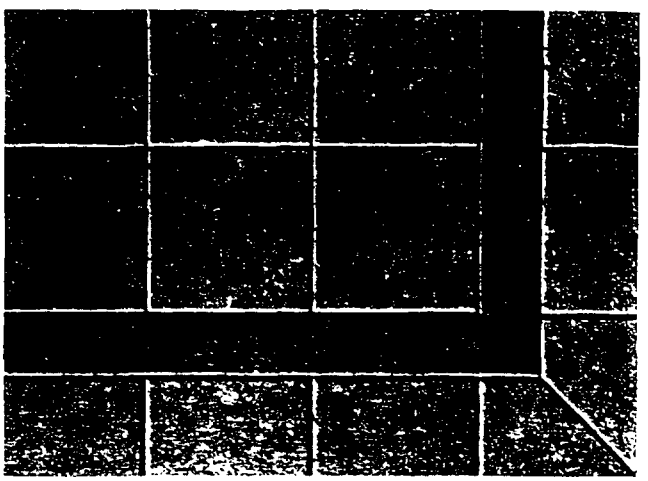
TYPICAL ACOUSTONE PATTERNS

Acoustone May Be Obtained on Order, Integrally Colored to Special Shades









INSTALLATIONS OF PERFATONE* AND QUIETONE*



For Perfatone See Page 5



For Quietone See Page 4

*Trade-Mark

BB024 1042

United States U.S. Gypsum Company

QUIETONE*
Low Density Wood Fiber Acoustical Tile
PHYSICAL CHARACTERISTICS

DESCRIPTION—Quietone is a decorative interior tile used to absorb sound and correct noisy conditions in offices, restaurants, etc., and to improve hearing in auditoriums, theatres, and buildings of similar use. See illustration Page 3.

It is a wood fiber product but should not be confused with ordinary insulating tiles used primarily for insulating purposes. It has unusually low density and exceptionally high and uniform absorption. It is a homogeneous material made by a unit felting process to produce a material of high acoustical excellence. Its attractive surface is free from surface oddities and puncturing, not uncommon in acoustical materials.

ABSORPTION—Quietone classes among the high-efficiency absorbents, the one-inch thickness having a 70 per cent noise reduction through the significant pitches, 256 to 2048 cycles. This means that through these pitches it absorbs 70 per cent of all sound striking it and that the reverberation time and the noise level in the room where it is used are greatly reduced.

It is important to note in considering the efficiency of Quietone that it has unusually efficient absorption through the significant ranges. This means, for example, that Quietone is efficient in absorbing the sound of the human voice, around 512 cycles, and also efficient in absorbing the noise of a typewriter, an octave or more higher.

Quietone Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Reduction Coefficient
1-in.	.30	.52	.73	.82	.75	.70

Absorption Coefficients are based on cemented to plaster mountings.

COLOR AND TEXTURE—Quietone is made in two standard textures, sanded and brushed surface. The natural color of the sanded texture is ivory, that of the brushed surface texture is a mottled light buff.

On order either of these textures or surfaces will be mill-tinted to any of the five standard colors in light pastel shades of Rose, Cream, Blue, Buff, and Green, all of relatively high light reflecting value.

Quietone may be spray tinted with lithopone or titanox paint reduced with mineral spirits.

SIZE AND THICKNESS—The standard size of Quietone is 12 x 12 in. in area and 1 inch thick. Either the brushed or sanded surface can be obtained in this size.

All Quietone units are finished on all four edges with a ½-in. bevel. Other sizes may be obtained at a slight increase in cost.

ADVANTAGES—

High Absorption—The absorption at the significant frequencies is extremely high.

Low Cost—In spite of its high efficiency, Quietone is a low cost material—so low in cost that it makes possible the use of acoustical treatment in almost any type of building where noise is a problem.

Appearance—The surface of Quietone is similar to that of other fiber tiles used primarily for decoration. It is free from perforations and other surface peculiarities that fall into a regular pattern. Its efficiency is secured by the natural surface of the tile in combination with a low and accurately controlled density. The result is an appearance just as pleasing as if the tile were made first of all for a decorative rather than an acoustical effect. This appearance is suited to any type of interior.

Maintenance—Cleaning is always cheaper than redecorating. Quietone can be cleaned with a vacuum cleaner. The mill-tinted pastel shades are deep tinted to withstand several cleanings before re-tinting becomes necessary. Painting reduces the sound absorptive capacity and should not be resorted to. A change in color should be accomplished by tinting or staining.

Easy Erection—Quietone is easily and quickly erected in either an old or a new building. A good level plaster (preferably a brown coat) or any clean level surface strong enough to support it is all that is required.

Specifications · QUIETONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List here all walls and ceilings to be covered with Quietone. If more than one texture or color of material is to be used, list each separately for the various areas.*

(2) BASE

NOTE—*Describe base.*

(2a) *On new work, a good level brown coat of plaster offers the best base for Quietone.*

(2b) *Quietone may be applied direct to any clean level surface strong enough to support it.*

(3) ACOUSTICAL MATERIAL

(3a) Acoustical material shall be Quietone in **[a natural color] [mill tinted in standard shades] [cream] [green] [rose] [buff] [blue]** and **[sanded] [brushed]** surface.

(3b) Tile shall in general be 1 inch thick by 12 x 12 in. with special sizes as shown on the various details.

(3c) Joints between tile shall be a 1/16-in. "V" formed by accurate beveling.

(4) APPLICATION of QUIETONE

NOTE—*Quietone may be applied in a diagonal or a straight pattern with a border effect if desired. Other patterns may be worked out but they will require special tile sizes.*

(4a) Quietone shall be completely erected by the United States Gypsum Company or by one of its authorized erectors.

(4b) The tile shall be cemented or cemented and nailed in position, care being taken to align tile and maintain an even surface in full conformance with the manufacturer's specifications.

*Trade-Mark

BB024 1043

United States U.S. Gypsum Company

PERFATONE*

Incombustible Perforated Metal Tile Type

PHYSICAL CHARACTERISTICS

DESCRIPTION—Perfatone is a perforated metal tile concealing highly absorbent pads of mineral wool. The edges of the tile are beveled and returned vertically to be held firmly in place by special tee runners. The tile are painted to comply with rigid specifications and to give a finish pleasing in color, high in light reflection, and protected against abrasion due to ordinary maintenance cleaning. See illustration Page 3.

The mineral wool pads are furnished either completely enclosed by a fire resistive membrane or wrapped in flame proofed muslin. With the latter type the tops of the pads are fully sealed during erection with fire resistive membrane. Either type of pad eliminates the so-called breathing action and avoids the accumulation of dirt on the surface which would result in a loss of absorption and an undesirable condition from the standpoint of sanitation.

COLOR and FINISH—Perfatone is finished in baked enamel. It is made in two standard colors, ivory for use where warmth is desired, and white. Both have high light reflection.

SIZES—Perfatone is made in units 12 x 24 in. with a center groove which gives the effect of 12 x 12 in. units.

ADVANTAGES—

Fireproof—The metal tile and the mineral wool pads are entirely incombustible. The pad wrapping is all flame-proofed and fire resistive.

High Efficiency—The table at right shows the extremely high absorption of Perfatone.

Washable—The painted metal surface of Perfatone may be washed many times before it becomes necessary to repaint it. Washing in no way affects the absorption efficiency of the tile or its appearance.

Paintable—Perfatone can be repainted many times without affecting the absorption efficiency of the construction. The perforations constitute approximately fourteen per cent of the total tile surface, and although small enough to blend into the neutral color of the tile, they are still large enough to maintain full absorption efficiency unaffected by many paintings.

ABSORPTION—In addition to its being the highest type of acoustical treatment from a construction standpoint, Perfatone is also one of the best from the standpoint of absorption efficiency. Its absorption coefficients present a fairly flat curve at the significant pitches, meaning more than average uniformity through the most important sound frequencies. Coefficients below are by the Official Laboratories of the Acoustical Materials Association.

Perfatone Type	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Red. Coef.
Muslin Wrap. Pad (Type A Pad)	.37	.52	.96	.94	.88	.85
Memb. Enc. Pad (Type B Pad)	.43	.61	.91	.88	.77	.80
Mounting: Metal supports applied to 1 x 2-in. wood furring.						

Specifications . PERFATONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Perfatone.*

(2) BASE

(2a) Where suspended ceiling construction is used, the necessary channel grillage shall be furnished and placed by the acoustical contractor.

(2b) Where Perfatone construction is to be held against concrete joist construction, wire ties shall be furnished in place by others on not more than 4-ft. centers along all joist bottoms. These ties shall consist of two No. 10 gauge galvanized wire projecting 6 inches below joist bottom. The ties must be carefully lined up in lines at right angles to the joists.

(3) ACOUSTICAL TREATMENT MATERIAL

Acoustical treatment material shall be Perfatone held firmly in place by special tee runners. The perforated metal tile shall conceal a mineral wool absorbent pad held slightly away from the perforated metal surface by means of a pad support. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proof membrane. (Or the absorbent pad shall be completely wrapped in flame-proof muslin and the top sealed during erection with flame-proof membrane.)

The perforated metal tile shall have a prime and finish coat of baked enamel on the back, and on the face a prime coat, an intermediate coat, and a finish coat of baked enamel.

(4) APPLICATION of PERFATONE

(4a) SUSPENDED CEILING CONSTRUCTION—The acoustical contractor shall fasten the special tee runners to the under-surface of the carrier channels, on 24-inch centers to hold the perforated metal tile. Perforated metal tile, pad supports, and absorbent pad shall be carefully assembled and pressed into position on the special tee runner. All edges shall be kept in alignment and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by **[the acoustical contractor] [others]** at the junction of the perforated tile ceiling with the walls and columns. Care shall be taken in cutting and fitting the tile around all openings.

(4b) PLASTERED CEILING CONSTRUCTION—

NOTE—*Same as in (4a) except that the special tee runners shall be attached to the present ceiling by means of suitable clips or wire and brought to a level surface.*

SHORT FORM

Perfatone treatment shall be furnished and erected by the United States Gypsum Company or one of its authorized erectors on all areas indicated on plans to receive acoustical treatment.

*Trade-Mark

BB024 1044

U S

BUILDING MATERIALS

BB024 1047

THE RED BOOK



WHERE RESEARCH DEVELOPS
BETTER, SAFER BUILDING MATERIALS

BB024 1048

UNITED STATES GYPSUM COMPANY

HISTORICAL FILE
First Publication
1940
DO NOT DESTROY

A Catalog of

BUILDING MATERIALS

MANUFACTURED AND SOLD BY

UNITED STATES GYPSUM COMPANY

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Textone	D	9
Texture Paint	D	9
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Thermofill—The Dry Fill Insulation	C	4
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Trussteel Studs	A	20
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SECTION A • • • • Plasters — Plastering Bases — Plastering Systems — Exterior Stucco • • • • • • • • • •

SECTION B • • • • • • • Wallboards

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SECTION D • Lime and Gypsum — Windows and Coal Doors — Expanded Metal — Roofing and Paint Products

SECTION E • Gypsum Constructions

SECTION F • • • • • Sound Control

BB024 1051

UNITED STATES GYPSUM COMPANY

RED BOOK · SECTION A

Plasters · Plastering Bases · Plastering Systems
Exterior Stucco

EXPERIENCE AND FACILITIES—The United States Gypsum Company and its commercial antecedents have been the principal manufacturers of gypsum products for over 100 years. The single hand-fired and stirred cauldron of 1834 was the forerunner of today's fifty odd large production units, ideally located to best serve the building industry in every section of America. Briefly, the superiority of USG* products is based upon high grade raw materials, perfected processes of manufacture, under exacting laboratory testing and control at each step; all under one management.

RESEARCH AND CONTROL — With its production predicated on the maximum in quality and leadership in innovations and betterment, the company long ago recognized the value of directed research. The Building Materials Research Laboratory of the United States Gypsum Company, long a feature of the production program, was consolidated and enlarged in Chicago in 1927. It is housed in a special building providing 20,000 sq. ft. of laboratories and staffed by over 50 technicians and scientists. At this laboratory there is a constant search for better ways of doing those things the company already does well. There is directed research leading toward the invention of new methods of solving building problems more economically, with constructions structurally better, or both. Here, likewise, the possibilities of new raw materials are investigated and control over the adhesion to the specifications of the laboratory for the production of every company product is exercised.

GYPSUM • THE SOURCE OF MANY UTILITIES

Inherent in Gypsum, and reflected in all of its products are an array of utilities that is rarely found in a single substance. Most of these utilities have a direct bearing on the economics of construction. When one finds in a plastic material, that may be readily molded to fit any space, that sets quickly and dries quickly, and is low in cost, such additional values as lightweightness and fireproofness, to mention but two of them, the economic advantages of the material are apparent at once.

It would be difficult to list here all of the values gypsum possesses (which are rarely discussed) which have an economic bearing on construction. Some of these assets are inherent; a few have been built in by research and experience. When one considers that in gypsum we have a hydraulic cement, which expands slightly when setting to fill a mold, wall or ceiling space without shrinking to provide cracks when it sets; in which the time of set is completely controllable; which is sanitary and cannot provide any food or nesting material for animal or vegetable life, whose density or weight can be varied, as can its strength, in wide limits; which has a pleasing appearance and takes any form of decoration without apology or a need for special preparation; which possesses a very useful degree of heat insulation, to say nothing of many other assets, we can realize that the ready acceptance given to some new product of gypsum is simply an expression of the appreciation for those time tested values inherent in all gypsum products.

GEOLOGICALLY SPEAKING gypsum is a widely distributed mineral found in several forms, two of which form the source of most of its commercial applications. Gypsum rock, which is mined and quarried in typical massive rock formation, is the source of most of the gypsum production. The same rock eroded through the centuries by time is reformed by nature into deposits of "Gypsite," a granular material, from which the Gypsite or dark plasters of the Southwest are obtained.

CHEMICALLY SPEAKING gypsum is the hydrous sulphate of calcium ($CaSO_4 \cdot 2H_2O$). Heat drives all or part of the water from the gypsum rock in our mills to produce a hydraulic cement—add water to the cement, mold or trowel the mixture to any desired form—and the material returns to its original rock state, but shaped or molded to serve many purposes well.

FIREPROOF—All gypsum constructions not only do not burn (they contain no fuel), but serve to protect more vulnerable constructions in any building from the ravages of fire. For a fuller treatment of the fire protection afforded by gypsum products, the architect is referred to the company's catalog of structural gypsum products.

*Registered Trade-Mark

BB024 1052

PLASTERS

GYPSUM PLASTERS • ADVANTAGES

TIME SAVING—Quick positive set coupled with rapid drying saves time. The building is decorated and occupied sooner. Only completed buildings produce revenue.

DECORATABLE—Gypsum plaster finishes and the plasters themselves contain no chemicals which in any way interfere with the application of proper paints and wallpaper to gypsum surfaces. Gypsum finishes were used by the old masters for the fresco work which persists today in buildings built in Pompeii and Herculanium before these cities were inundated by the hot ashes of Vesuvius.

UNIFORMITY—Through research laboratory control the plasters manufactured in all of the mills of the United States Gypsum Company have been adjusted to suit local conditions and produce like results as plasters regardless of the plants that manufacture them. Architects, therefore, who are familiar with our products in one city may specify them for use in other cities with complete assurance of getting like results.

BRANDS—The standardization nationally of USG plasters under the Red Top* brand is a protection to the architect and a convenience to the trade.

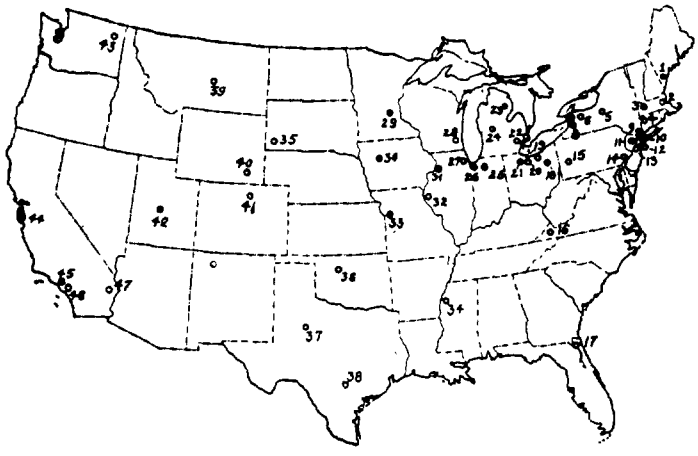
COVERING CAPACITY—The covering capacity of USG plasters is as great for each type of material as it is possible to obtain. Of necessity, the area of wall which can be produced by a given quantity of plaster varies with the following factors: the mechanic, the thickness of the wall, the kind of trueness of the surface to be plastered, the size and number of keys in the lath, the quality of sand, etc. The covering capacities given herein after the description of each variety of plaster are based on average conditions.

FIREPROOF—In addition to doing the plastering job well, gypsum plaster provides in every building where it is used, however, humble, a real value in fire protection at no additional cost to the owner. In most homes the only fireproofing provided is found in the gypsum plaster.

APPLICABLE—Gypsum plaster is so constituted that it works with equal facility on any type of lathing material. Into it have been built proper plasticity and slip to make the plasterer's task easier and, hence, better. Gypsum plasters are distinctly artisans' materials.

STANDARDS—All Red Top Plasters comply with standards of the American Society for Testing Materials, the several Federal Departments and various construction agencies.

47 USG Mines, Mills and Warehouses are strategically located to serve the United States. On the map mines and mills are indicated by an outline circle O and warehouses by black circles



1. Lisbon Falls, Me.
2. Boston, Mass.
3. Farnams, Mass.
4. Falls Village, Conn.
5. Skaneateles Falls, N. Y.
6. Oakfield, N. Y.
7. North Tonawanda, N. Y.
8. Black Rock, N. Y.
9. Bronx, N. Y.
10. Long Island City, N. Y.
11. Harrison, N. J.
12. New Brighton, Staten Island, N. Y.
13. Jersey City, N. J.
14. Philadelphia, Penn.
15. Oakmont, Penn.
16. Plasterco, Va.
17. Jacksonville, Fla.
18. Warren, Ohio
19. Cleveland, Ohio
20. Gypsum, Ohio
21. Genoa, Ohio
22. Detroit, Mich.
23. Alabaster, Mich.
24. Grand Rapids, Mich.
25. South Bend, Ind.
26. East Chicago, Ind.
27. Chicago, Ill.
28. Milwaukee, Wis.
29. St. Paul, Minn.
30. Fort Dodge, Iowa
31. Cordova, Ill.
32. Quincy, Ill.
33. N. Kansas City, Mo.
34. Greenville, Miss.
35. Piedmont, S. D.
36. Southard, Okla.
37. Sweetwater, Tex.
38. New Braunfels, Tex.
39. Heath, Mont.
40. Laramie, Wyo.
41. Loveland, Colo.
42. Nephi, Utah
43. Evans, Wash.
44. San Francisco, Cal.
45. Los Angeles, Cal.
46. South Gate, Cal.
47. Midland, Cal.

*Registered Trade-Mark

CEMENT PLASTERS
(Fibered and Unfibered)

USE—Use for scratch and brown coats.

BRANDS—

Red Top*	Niagara	King's Windsor*
Granite	Peerless	Red Top Eldorado*
Big-4*	Hardwall	(Gypsite)

DESCRIPTION—Red Top Cement Plasters are "neat" materials—sand to be added at the job. They are unusually rich, spread well, and, when mixed properly with a good grade of sand, are uniformly satisfactory in ultimate results in the finished wall.

Manufacture under the "Red Top Process" assures the maximum in sand carrying capacity, easy workability, and bulk. They set in a uniform time over any base unaffected by ordinary job conditions.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

COVERING CAPACITY—*Under average conditions* Gypsum Cement Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	180–210 (Sanded 2 to 1)	105–135 (Sanded 2 to 1)	225–240 (Sanded 2 to 1)	165–200 (Sanded 3 to 1)	235–255 (Sanded 3 to 1)

WOOD FIBER PLASTERS

USE—Use for scratch and brown coats.

BRANDS—

Red Top.
Red Top Eldorado (Gypsite).

DESCRIPTION—Wood Fiber Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster, to which is added finely shredded wood fiber, uniformly distributed. Made of pure gypsum reinforced with wood fiber, it is extremely tough, strong, dense, and durable. It is superior to sanded plaster in fire-resistance, insulation, and sound-deadening. Its great flexibility adapts it to withstand vibrations and strains.

Wood fiber plaster avoids the handling of sand, dangers of poor sand, and oversanding. It is smooth, fatty, and spreads easily. When applied, it weighs about two-thirds as much as sanded cement plaster. It is especially adaptable to alterations and is desirable for winter use. It may be sawed like wood.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

COVERING CAPACITY—Under average conditions Wood Fiber Plaster mixed and applied as specified will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath
Sq. yds. per ton	90–100 (Unsanded—water only added)	55–65 (Unsanded—water only added)	115–120 (Unsanded—water only added)

PREPARED PLASTERS
(SANDED)

USE—Use for scratch and brown coats.

BRANDS—

Red Top* Sanded Plaster.
Red Top Sanded Plaster for Brick or Tile.
Red Top Sanded Wood Fiber Plaster.

DESCRIPTION—Prepared Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster to which is added nothing but sharp, clean plastering sand, thoroughly graded, dried and screened.

Correct proportions and mixing are accomplished by automatic machines at the factory.

Prepared plasters are desirable in localities where good sand is difficult to obtain.

Since they are ready to apply with the addition of water only, they are particularly well adapted for use in winter when unfrozen sand of good quality is difficult or expensive to obtain.

Since these plasters may be readily mixed inside the building, they are useful for repair and remodeling work in all seasons.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

COVERING CAPACITY—Under average conditions Gypsum Prepared Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	60 to 70	35 to 45	75 to 80	45 to 55	65 to 70
	(Plaster mixed with water only—no sand added)				

*Registered Trade-Mark

BB024 1054

BONDCRETE* • For Interior Concrete Surfaces

USE—Use for scratch and brown coats over concrete.

DESCRIPTION—Ordinary gypsum or lime plaster does not adhere properly to concrete—consequently Bondcrete, a specially made plaster for concrete surfaces, is recommended. Water only added on job.

Bondcrete permits moisture, expelled from concrete for approximately a year, to be carried through and evaporated on the surface, thus avoiding a condition approaching a sweat-out. Any plaster finish can be used over Bondcrete. Oil paint decoration should be deferred for a year.

Bondcrete adheres strongly to dry concrete due to its cementitious qualities and its practically unchanging volume during setting and hardening. It needs only water to make it ready for use.

Do not apply Bondcrete over a smooth, oily or efflorescent surface. Provide a semi-rough, clean surface. It should not be covered with a sanded brown coat on ceilings.

Finish coat must never exceed ¼ inch in thickness. Provide furring and lathing where more than ¾ inch of plaster is required or ornamental plaster is suspended.

DIRECTIONS—*(See Master Specifications, p. 26).*

COVERING CAPACITY—From 90 to 120 sq. yds. to the ton depending upon regularity of concrete surface and thickness applied.

Note—*See "Covering Capacity," page 2.*

PREPARED GYPSUM FINISHES

USE—Use for finish coat only. Water alone need be added.

BRANDS—**Note**—*See "Brands," Page 2.*

Trowel Finishes

Red Top* Trowel Finish.
Red Top Universal* White Trowel Finish.
Red Top Adamant* White Trowel Finish.
Red Top Adamant Slate Colored Trowel Finish.
Red Top Adamant IXXX Trowel Finish.
Red Top Badger* Gray Trowel Finish.

Sand Float Finishes

Red Top* Silica White Sand Float Finish.
Red Top Adamant Gray Sand Float Finish.
Red Top Adamant White Sand Float Finish.
Red Top Sand Float Finish (Light Gray).

DESCRIPTION—Prepared Gypsum Finishes require only the addition of water to make them ready for use.

Made of gypsum, they bond perfectly with gypsum plaster base coats and may be decorated when dry as they contain no alkalies which might saponify paint.

The sand float finishes contain selected sharp, clean silica sand, properly graded, screened and thoroughly dried, thus assuring a uniform mix of correct proportion. They are especially recommended for use in winter when unfrozen sand of the requisite quality is difficult to obtain. Decorations may safely be applied as soon as the finish dries.

DIRECTIONS—*(See Master Specifications, pp. 26, 27, 28).*

COVERING CAPACITY—Under average conditions Gypsum Trowel Finish, if mixed and applied in accordance with standard specifications, will cover about 350 to 400 yds. per ton; Gypsum Sand Float Finish about 250 to 275 yds. per ton.

ORIENTAL* INTERIOR COLORED FINISH PLASTER

USE—Use for textured or floated plaster finish coat.

DESCRIPTION—Oriental Interior is a colored finish plaster. The material is made in thirteen standard shades and white. Tints are produced with mineral colors, great care being taken to assure absolute uniformity of shade. It is ready for use with the addition of water only.

With ordinary tools, attractive, tinted, float, textured, tile and stone finishes may be obtained.

The positive regulation of color insures walls with the minimum amount of "joinings" and avoids the danger of inaccurate mixing.

DIRECTIONS—*(See Master Specifications, pp. 26, 27, 28).*

COLOR—Order Oriental Interior by color name from color cards or samples.

COVERING CAPACITY—Approximately 250 to 300 sq. yds. per ton, varying according to textures.

GAUGING PLASTERS

USE—Use for finish coat only in conjunction with lime putty described below.

BRANDS—

Slow Set—Red Top* (Gray).
Red Top Star* (White).
Red Top Superfine Finishing (White).

Quick Set—Red Top* (Gray).
Red Top Champion* (White).
Red Top Kings Diamond* (White).
Red Top NYC Mills*.
Red Top Quick Setting.
Red Top Fast Setting.

*Registered Trade-Mark

GAUGING PLASTERS (Cont'd.)

DESCRIPTION—These plasters are made of raw materials carefully selected from gypsum deposits unusually well suited for plasters for this purpose.

Aside from saving time, gauging plasters are far more satisfactory than screened cement plaster.

They are made in both "slow set" and "quick set," and are uniformly ground to just the right fineness to insure easy working and mixing qualities.

Gauging plasters used according to directions contribute early hardness and freedom from shrinkage cracks.

DIRECTIONS—Full directions for mixing and application are given under Finishing Lime.

PACKAGE—Shipped in 100-lb. paper bags. Also shipped in 250-lb. (230 lb. net) barrels and 320-lb. (300 lb. net) barrels.

COVERING CAPACITY—Under average conditions one ton of Gauging Plaster, mixed with two tons of dry hydrated lime by weight, will cover about 1000 to 1400 sq. yds.

FINISHING LIME

USE—Use finishing lime for finish coat only in conjunction with Gauging Plaster or Keene's Cement.

BRANDS—

Hydrated Finishing Lime
Red Top Ivory*.
Red Top Grand Prize*.
Red Top.
Cheshire* Hydrate (High Calcium).
Plastimax* Finishing Hydrate (High Calcium).

Finishing Quicklime
Cheshire* Quicklime (High Calcium)—in Lump, Pulverized and Superfine.
Peerless Quicklime (High Calcium)—in Lump and Pulverized.

DESCRIPTION—These limes are specially prepared for finishing purposes. They possess a rich plasticity that makes them spread easy and far; hence they save time and labor.

Hydrated lime saves the time and trouble of slaking and screening lime on the job.

The Red Top Hydrated brands are made from the famous Ohio dolomite which, with USG standards of manufacture, produce a lime unexcelled for finishing purposes.

They are of a snowy white color and are absolutely free from "pops" and "pits." They meet the standard specifications for hydrated lime of the American Society for Testing Materials and are accepted for United States Government construction without specific tests on the certification of the United States Gypsum Co. that the lime conforms with government requirements.

Plastimax lime is a specially processed quick-soaking hydrate.

Cheshire Quicklime is wood burned and of exceptional quality. Because of the exceeding purity and the physical characteristics of the stone, this lime is unusually quick slaking. It has a high putty yield.

DIRECTIONS—*(See Master Specifications, pp. 26, 28).*

PACKAGE—Hydrated Lime is shipped in 50-lb. paper bags. (Plastimax in 40-lb. bags.)

Quicklime is shipped in 180-lb. and 280-lb. net weight wood barrels and steel drums, also in bulk. The Cheshire Finish Quicklime is shipped also in 80-lb. and the Peerless Quicklime in 50 and 100-lb. Multi-Wall paper moisture-proof bags.

COVERING CAPACITY—Under average conditions one ton of Red Top Hydrated Lime, when used with the proper proportions of gauging plaster, should finish from 500 to 700 sq. yds.

A ton of Quicklime, when used with gauging plaster, should finish about 1000 yards.

RED TOP* KEENE'S CEMENT

USE—Use for high grade plasterwork, particularly to receive fine decorative treatment and where the utmost in hardness, density and sanitation is desired.

DESCRIPTION—Red Top Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is made from selected gypsum mined at Southard, Oklahoma. It excels in smooth, uniform working qualities and in tensile strength, due to the selected material and the USG improved methods of manufacture and rigid mill inspection.

Keene's Cement is ground to extreme fineness, is pure white in color and takes a very high, glass-like polish. It is impenetrable to rodents and vermin. It is easily cleaned. It contains no alkali to stain delicate wall tints or saponify the oil in paints, hence it is an ideal base for fine decorating.

Beside the standard Keene's Cement, Red Top Keene's Cement is made in three special types: Red Top Casting Keene's; Red Top Scagliola Keene's and Red Top Quick Troweling Keene's.

Red Top Casting Keene's, especially adapted to high class ornamental work, has minimum expansion. It is white, non-staining, non-corrosive, non-acid. It has a final set within two hours.

Red Top Scagliola Keene's is made expressly for the purpose. Initial set is 3 to 6 hours; final set, 15 to 20 hours.

Quick Troweling Keene's is always used with lime putty for finish plaster. Its rapid set permits application and finish troweling in one operation. Setting time is within two hours, when final troweling should be given.

DIRECTIONS—*(See Master Specifications, pp. 26, 27).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions one ton of Keene's Cement, when used neat and in accordance with specifications, will cover about 400 to 500 sq. yds.

BB024 1056

*Registered Trade-Mark

RED TOP (ARIDIZE*) MOULDING PLASTER

USE—Use for ornamental moulded plaster work.

BRANDS—

Red Top* (Gray).
Red Top No. 1 (White).
Red Top No. 2 (White).
Red Top King's Diamond (White).
Golden Seal (White).

DESCRIPTION—The requirements for moulding plaster are distinctly different from any other class of plaster.

Gypsum deposits suitable for making material of this particular type are exceedingly rare.

Aridize Moulding Plasters are made from selected gypsum ideal for the purpose and unequaled for whiteness and purity. This, together with the special patented process of manufacture, produces a particularly smooth working plaster of absolutely uniform setting quality.

These plasters are ground much finer than other similar products, assuring a more thorough solution and a finer surface to the finished work. The fine satin-like surface increases the life of the moulds.

In addition to these qualities, the plasters are cooler working and slower setting, which accounts for low expansion and absence of warped moulds. The slow generation of heat in setting insures protection to gelatine or glue moulds. Slow setting gives time for blending and working out trapped air bubbles and working the plaster into angles and corners of moulds.

Even when green, moulds made of these plasters possess great strength, and breakage by handling and manipulation in the moulding and casting stage is diminished.

DIRECTIONS—*(See Master Specifications, p. 28).*

PACKAGE—Shipped in 100-lb. paper bags; 250-lb. (230 lb. net weight) barrels and in 320-lb. (300 lb. net weight) barrels.

ORIENTAL EXTERIOR STUCCO

DESCRIPTION—Oriental Exterior Stucco is a completely factory-mixed exterior stucco material of the highest quality. The finish coat is scientifically colored in a wide range of tints. It is the product of careful and thorough investigation and research by the United States Gypsum Company.

Oriental Exterior Stucco Finish is furnished in white and eleven standard colors. Water only needs to be added at the job. A uniform color and correct mixture are assured by machine mixing at mill, entirely eliminating the unavoidable variations which occur when stucco is hand-mixed on the job.

Bases—Oriental Exterior Stucco should be applied over Red Top stucco mesh weighing not less than 1.8 lb. per sq. yd. or Red Top self-furring diamond mesh metal lath weighing not less than 3.4 lb. per sq. yd.

Base Coat—Oriental Exterior Stucco Base Coat is a specially prepared, factory-mixed, permanent, water-resistive base for Oriental Exterior Stucco Finish, with the correct proportion of uniformly graded, selected sand, and other ingredients added to make it plastic.

Being made ready for use by the addition of water only, it is economical of time and labor and assures a base of uniform suction and strength.

Finish Coat—Oriental Exterior Stucco Finish is mixed with mineral colors and prepared ingredients that make it water-resistive. The formula used is based upon methods used in producing the famous Old World stuccoes and one successfully used in America for 25 years.

CHARACTERISTICS—Oriental Exterior Finish sets slowly enough to permit proper finishing, thus avoiding unsightly streaks or shading. It is easy to achieve the smooth trowel, stipple, sponge, rough cast, period textures or spatter-dash finishes.

Oriental Stucco Finish increases in hardness, strength and water resistive qualities with age.

NOTE—*Oriental Exterior Stucco Finish may be applied over standard portland cement base coats.*

USE—Use for base and finish coats of exterior white or colored stucco of the highest quality.

PACKAGE—Oriental Exterior Base Coat is shipped in 100-lb. paper bags, and Oriental Exterior Finish Coat is shipped in 100-lb. paper bags. Order Finish Coat by the number on color cards or samples.

COVERING CAPACITY—

Base Coat—The approximate covering capacity of one ton of Oriental Exterior Stucco Base Coat (scratch and brown coats) on the basis of the average job, is as follows:

Plastering surface	Brick and clay tile	Metal lath	Wire fabric	Cement and cinder tile	Concrete
Sq. yd. per ton	20 to 25	25 to 30	22 to 28	20 to 22	22 to 25

Finish Coat—One ton of Oriental Exterior Stucco Finish, not to exceed ¼ in. in thickness, will cover from 150 to 200 sq. yds., depending on the texture selected.

*Trade-Mark

PLASTERING BASES

ROCKLATH* · THE FIREPROOF LATH

DESCRIPTION—Rocklath is made of gypsum encased in a tough fibrous covering formed into boards 16 x 32 and 16 x 48 in., ⅜ in. thick. The fibrous covering provides a uniform suction, insuring a strong bond with gypsum plaster. Either size provides a vertical joint break without cutting when used on framing 16-in. o.c.

ADVANTAGES—Rocklath does not burn or readily transmit high temperatures. It provides a continuous fireproof sheet over the entire wall and ceiling area which helps confine fire to the room in which it originates.

Rocklath is durable as it contains nothing that will disintegrate or corrode.

Rocklath does not expand, warp or buckle when wet plaster is applied over it, consequently it will not shrink and cause cracks when the plaster dries.

The uniform suction of Rocklath prevents the plaster from "slipping" during application and insures a uniform bond. Tests at the U. S. Bureau of Standards showed that a pull of six pounds per square inch was required to separate the plaster from the gypsum lath, providing a factor of safety of 144.

Rocklath is easy to handle and erect. The boards are packed in convenient size bundles which can be carried easily by one man. There are no rough edges or splinters to injure the hands. One piece of Rocklath covers the same area as 9 wood lath and requires 50 per cent less nails. The boards score and cut evenly without waste.

As Rocklath provides a firm even plastering surface, there is no plaster wasted in filling up low spots.

It is not necessary to wet Rocklath before plastering. The ⅜-in. of gypsum seals off the moisture of the fresh plaster from the frame and thus prevents the swelling and subsequent shrinking of wood members. Walls and ceilings will dry quicker and permit the earlier application of trim and decoration.

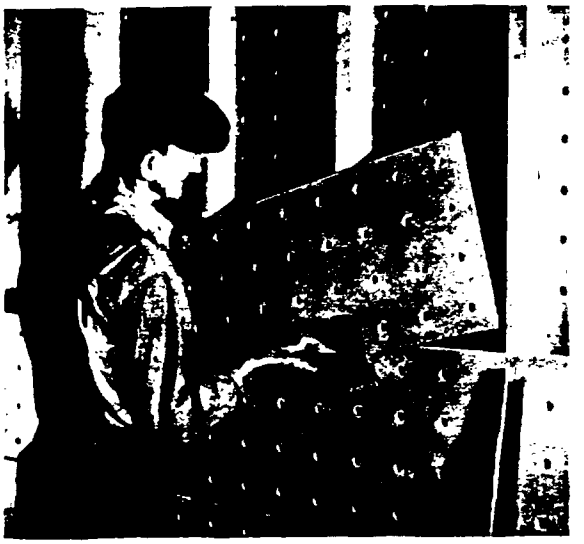
The completed wall of Rocklath and gypsum plaster costs less than metal lath and plaster and little, if any, more than wood lath and plaster.

PERFORATED ROCKLATH

DESCRIPTION—Perforated Rocklath is the same as standard Rocklath, described above, except that it has perforations spaced at regular intervals which provide an additional mechanical bond with the gypsum plaster.

ADVANTAGES—Perforated Rocklath has all of the advantages of Rocklath as enumerated above plus a much greater resistance to fire, due to the persistence of the bond when attacked by fire.

At the conclusion of tests conducted in accordance with the American Standards Association Fire Test Specification, a Perforated Rocklath partition plastered in the approved manner was shown to have qualified for a one-hour fire rating.





*Registered Trade-Mark

BB024 1058

INSULATING ROCKLATH

DESCRIPTION—Insulating Rocklath is standard ⅜-in. Rocklath on the back of which is mounted a thin, smooth sheet of bright aluminum foil. Applied with the foil side next to the frame and facing a dead air space, Insulating Rocklath has an insulating value equal to that of ½-in. fiber insulating board.

ADVANTAGES—Insulating Rocklath has all of the advantages of Rocklath as enumerated, plus its insulating efficiency which is based on the following facts:

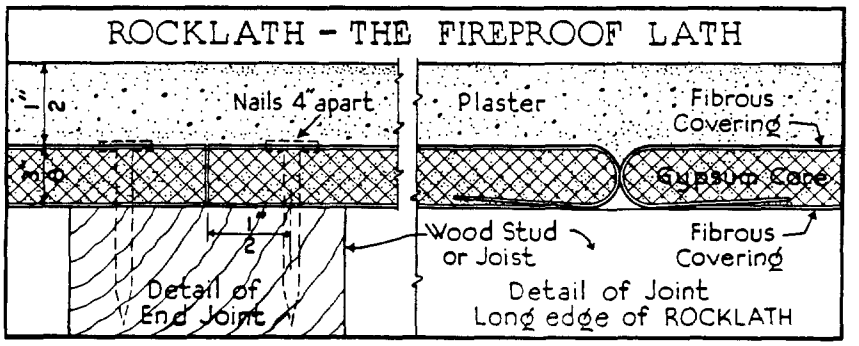
Heat passing into or out of a building must pass through the hollow spaces between the framing members. Approximately 75 per cent of such heat travel is by radiation. Laboratory tests have proved conclusively that a bright surface such as that provided by the metal foil on Insulating Rocklath will effectively reflect radiant heat and refuse to emit heat by radiation.

Insulating Rocklath resists the inward passage of radiant heat in summer by reflecting it back as a mirror reflects light. In winter when the flow of heat is outward, it insulates by refusing to transmit radiant heat outward.

Insulating Rocklath helps solve the problem of condensation which has been brought about by the wide use of air-conditioning, insulation, weather-stripping, and storm sash. Extensive tests have proved that a thin metal foil such as that applied to Insulating Rocklath provides a barrier that will stop the movement of vapor and consequently effectively control condensation.

ROCKLATH SIZES AND WEIGHTS

All types of Rocklath are ⅜-in. thick, available in boards 16 x 32 and 16 x 48 in., packed 6 boards per bundle. Each bundle of 32-in. width contains 21⅓ square feet and weighs about 30 lbs. Each bundle of 48-in. width contains 32 square feet and weighs about 45 lbs.







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METAL LATH and ACCESSORIES

INTRODUCTION

That the United States Gypsum Company might furnish all materials required for lathing and plastering, it acquired the metal lath division of the Youngstown Pressed Steel Company and the North Western Expanded Metal Company, both for many years well and favorably known in the industry. As a result, those whom the company serves have the advantages of mixed car shipments and of centralized responsibility.

The high quality products of the two metal lath companies will be found in the Red Top Line of Metal Lath Products. In addition, the Red Top Line includes many special accessories. All brands and types of metal are distinctly tagged for identification.

NOTE—*For application, see Master Specifications, pages 23 and 24.*

RED TOP* DIAMOND MESH LATH (JUNIOR MESH)

Description—A small ($^{5}/_{16}$" x $^{9}/_{16}$") diamond mesh expanded metal lath (patented). The stiff sheets are easy to erect.

The small mesh enables the lather to engage a greater number of strands in nailing or tying, yet the "diamonds" are amply large to freely admit the tie wire.

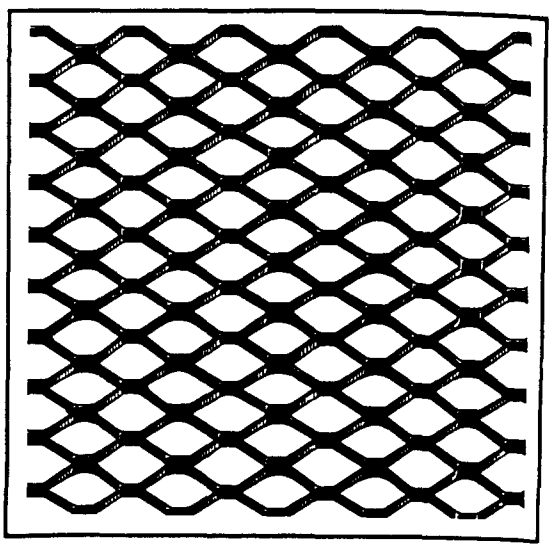
Mortar spreads easily on the smooth stiff surface, without waste and the small mesh affords a superbly keyed bond.

Weights—2.2, 2.5, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black in all weights. (2) Galvanized steel in 2.5 and 3.4 lb. weights. (3) Copper bearing steel (so tagged), painted black in 3.0 and 3.4 lb. weights. (4) Armco Ingot Iron (so tagged), painted black in 3.4 lb. weight.

Self-furring and Corrugated—All above weights and materials furnished in the Self-furring and Corrugated types.

Sheet Size—27 x 96 in., packed 10 sheets (20 sq. yds.) per bundle. Also size 24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle on order.



RED TOP DIAMOND MESH LATH

RED TOP $^{1}/_{8}$ in. Z-RIB LATH (Flat Rib)

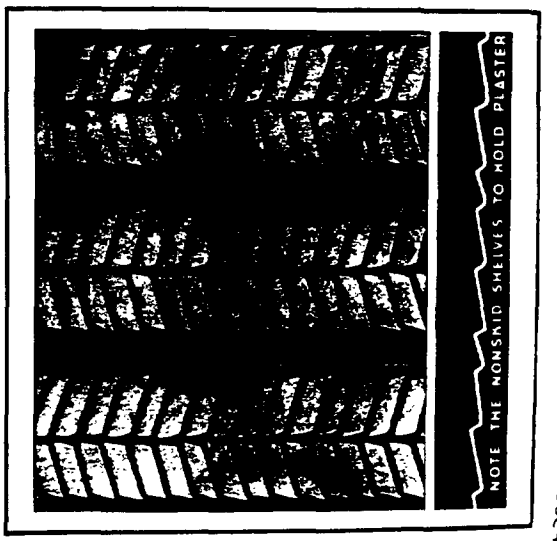
Description—A distinctive type of flat rib lath for nailing on wood construction or tying on metal furring.

The narrow "Z" ribs ($^{1}/_{8}$ in. deep, 1½ in. o.c.) add exceptional rigidity and provide shelves which hold the wet plaster in place, both front and back, without waste.

Weights—2.75, 3.0, 3.4 lb. per sq. yd.

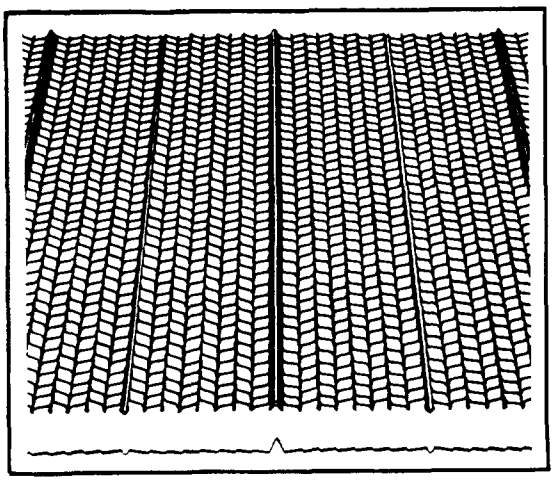
Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Galvanized steel in 3.4 lb. weight. (4) Armco Ingot Iron (so tagged) painted black, in 3.4 lb. weight on special order.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP ⅛ IN. Z-RIB LATH

*Trade-Mark



RED TOP ⅜ IN. RIB LATH

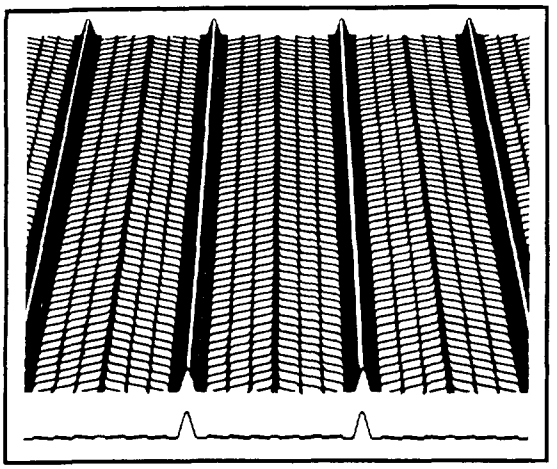
RED TOP ⅜ in. RIB LATH

Description—A very rigid reinforcement for use in floor and ceiling construction with steel joists, also ceilings under steel tile construction and where wide spacing of supports is desired. It provides for nested lap at the outside ribs with no lumps. Its use assures a permanent, economical and absolutely satisfactory result in every way.

Weights—3.0, 3.4, 4.0 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Armco Ingot Iron (so tagged), painted black, in 3.4 lb. weight. (4) Galvanized steel in 3.4 lb. weight.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP ¾ IN. RIB LATH

RED TOP ¾ in. RIB LATH

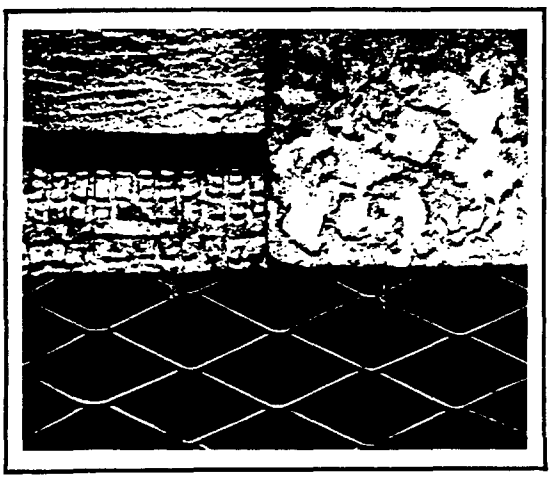
Description—The exceptional stiffness (ribs ¾ in., 4.8 in., o.c.) of this heavy weight, self-furring, expanded metal lath adapts it particularly for centering and reinforcement for concrete roofs and floors, and for plaster partitions and ceilings on extremely wide spacing of supports. Advantageously used on many forms of special work, such as column and beam protection, balconies, concrete tanks and fences, etc.

Weights—.50 (28 ga.), .60 (26 ga.), .75 (24 ga.) lb. per square foot.

Note—*¾-in. Rib Lath is sold by the square foot. All other lath types sold by the square yard.*

Materials—(1) Open hearth steel, painted black. (2) Copper bearing steel (so tagged), painted black (on special order only).

Sheet Size—24 in. wide, 8, 10 and 12 ft. long (other lengths on special order).



RED TOP EXPANDED STUCCOMESH

RED TOP EXPANDED STUCCOMESH

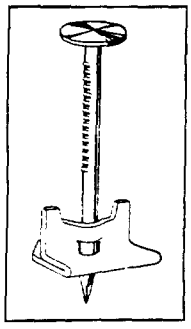
Description—An expanded metal reinforcement for exterior stucco, cold-drawn from the highest grade of copper bearing steel into diamond mesh 1⅜ x 3⅛ in. wide. Its diagonal strands provide a correct distribution of steel to overcome the initial shrinkage, temperature changes and wind stresses, and a positive protection against unusual shocks. Apply with Red Top Economy Stucco Furring Nails.

Weights—1.8, 3.6 lb. per sq. yd.

Materials—Copper bearing steel (so tagged), painted black. (Plain steel and galvanized steel on order.)

Sheet Size—48 in. wide x 99 in. long. Packed 10 sheets (36⅔ square yards) to the bundle.

STUCCO FURRING NAILS

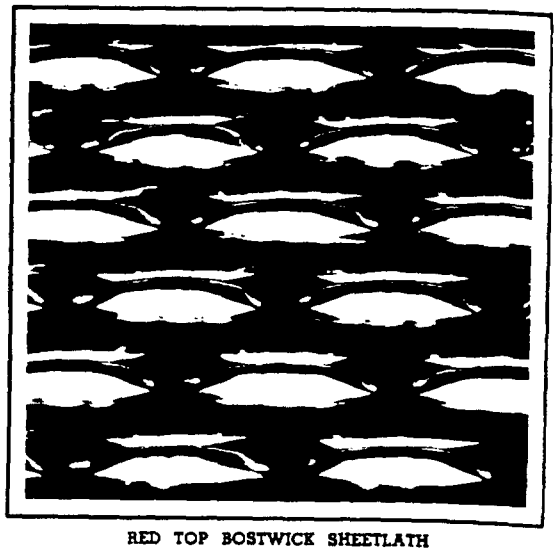


Description—A special nail for applying and furring Red Top Stuccomesh illustrated on page 10. It provides a furring device with sliding spacer and rib, which securely holds the reinforcing mesh free of the sheathing in the center of the stucco slab.

Size—1½-in. nail, ⅜-in. spacer.

Packed—Packed 850 nails per box, 10 boxes (8500 nails) per case. One box is estimated as sufficient for 50 sq. yds.

RED TOP BOSTWICK SHEETLATH



RED TOP BOSTWICK SHEETLATH

Description—A stiff, heavy weight sheet lath particularly adapted to reinforcement of plaster, cement reinforcement for tile, marble, etc.

Materials and Weights—Open hearth steel, painted black, 4.5 lb. per sq. yd. Galvanized steel, 5.2 lb. per sq. yd.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP CORNERITE

Description—A quality, factory formed product—Diamond Mesh Metal Lath Angle, used over wood lath, gypsum lath and masonry, at all angles where wall meets wall and walls meet ceiling. Furnished in painted or cut from galvanized steel.

Size and Weight—3 x 3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 125 lb. per 1000 ft.

RED TOP STRIPLATH

Description—Diamond Mesh Lath Strips. Used to cover sections of walls and ceilings where there are joints in the construction which might cause plaster cracks. Should be used around window and door frames when metal lath is not used for plaster base.

Size and Weight—3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 60 lb. per 1000 ft.

BASE SCREEDS and PICTURE MOULD

Description—Base screeds form a dividing line and screed between plaster walls and cement or composition base. A concealed picture mould and screed.

Material—Galvanized steel of 26 gauge.

TYPES and WEIGHTS

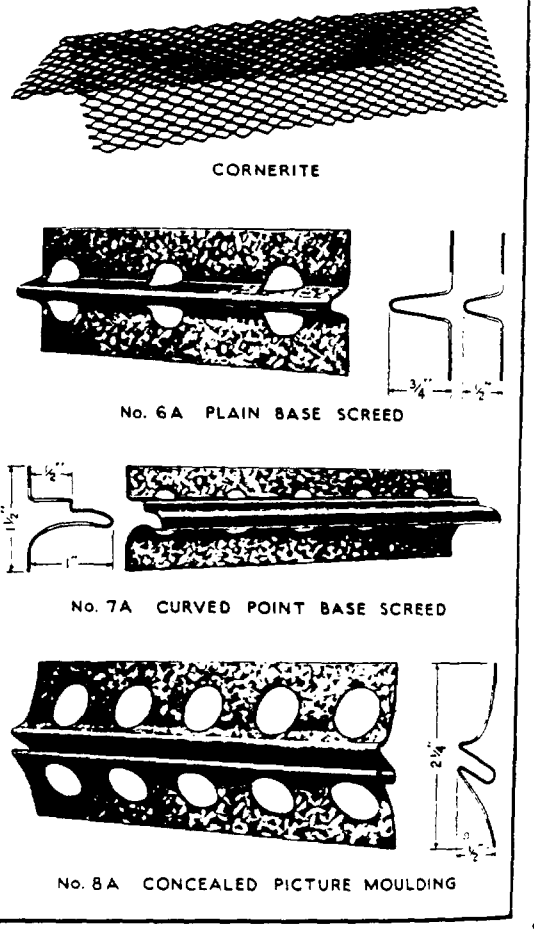
No. 3A—Expansion Flush Screed, $\frac{9}{16}$-in. ground; weight 230 lb. per 1000 lin. ft.

No. 6A—Plain Screed, ½-in. ground; weight 160 lb. per 1000 lin. ft., ⅝ and ¾-in. ground on order.)

No. 7A—Curved Point Screed, ½-in. ground; weight 195 lb. per 1000 lin. ft.

No. 8A—Picture Mould; weight 260 lb. per 1000 lin. ft.

Packed—Packed 10 pieces per bundle.



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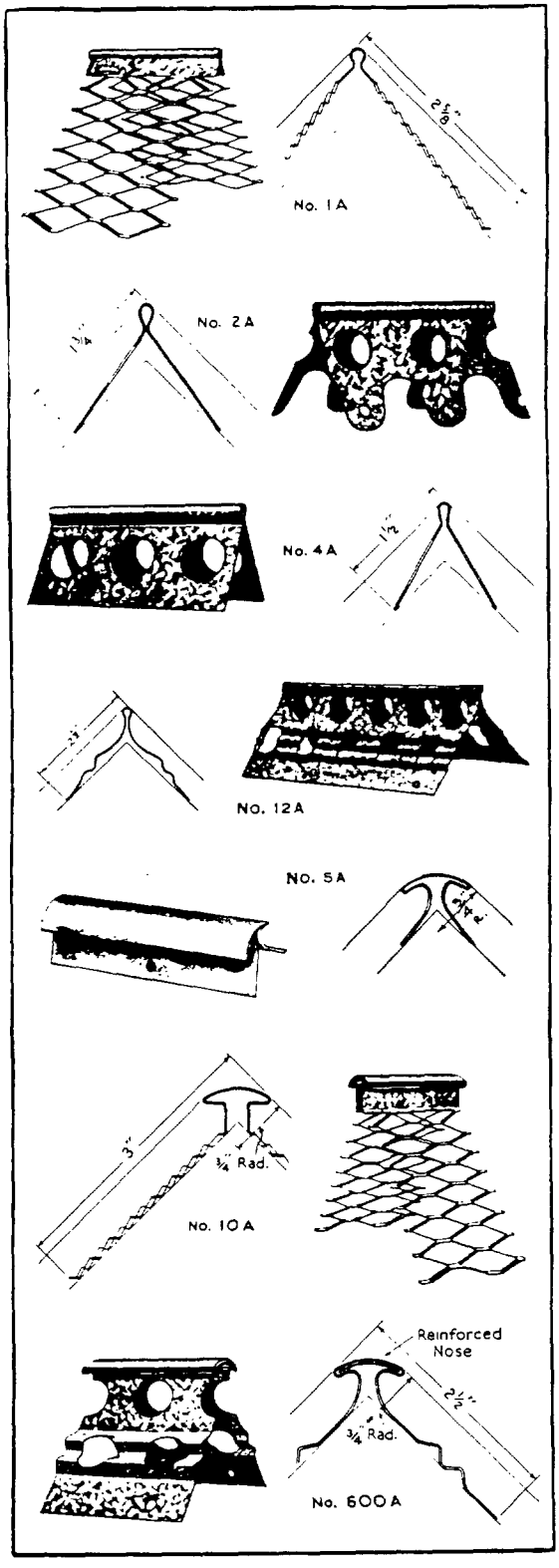

RED TOP CORNER BEADS

Description—A complete line of standard, high grade corner beads adapted to every construction need.

Material—Galvanized steel 26 gauge. 24-gauge material also furnished on special order.

SMALL NOSE CORNER BEADS TYPES and WEIGHTS

No. 1A—2½-in. Expansion Flange Type—250 lb. per 1000 lin. ft.

No. 2A—1¾-in. Short Scalloped Flange Type—220 lb. per 1000 lin. ft.

No. 4A—1½-in. Flange Standard Type—200 lb. per 1000 lin. ft.

No. 12A—2½-in. Wide Flange Type—350 lb. per 1000 lin. ft.

No. 16A—2½-in. Wide Scalloped Flange Type—320 lb. per 1000 lin. ft.

BULL NOSE CORNER BEADS TYPES and WEIGHTS

No. 5A—Short Flange ¾ in. Radius Bull Nose—245 lb. per 1000 lin. ft.

No. 10A—2½-in. Expansion Flange ¾ in. Radius Bull Nose—375 lb. per 1000 lin. ft.

No. 80A—2½-in. Expansion Flange 1½ in. Radius Bull Nose—1000 lb. per 1000 lin. ft.

No. 90A—2½-in. Expansion Flange 2 in. Radius Bull Nose—1050 lb. per 1000 lin. ft.

No. 600A—2½ in. Solid Flange ¾ in. Radius Bull Nose—reinforced nose—570 lb. per 1000 lin. ft.

No. 603A—2⅞ in. Solid Flange 1½ in. Radius Bull Nose—reinforced nose—900 lb. per 1000 lin. ft.

No. 14A—2½ in. Solid Flange ¾ in. Radius Bull Nose —non-reinforced nose—420 lb. per 1000 lin. ft.

Packed—Crated approximately 500 lineal feet per crate, or packed 10 pieces per bundle. Expansion Beads crated only.

NO. 9A HUMP CLIPS

A 3-inch clip attachment for short flange beads to facilitate erection. Made from blued steel. Used generally with No. 5A Bull Nose Bead. Packed in boxes of 1000 each weighing 25 pounds.

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RED TOP METAL ARCHES

Description—A ready-formed plastering arch for doorways, etc. Eliminates two difficult operations—the construction of curved wooden forms and the forming of corner beads around these curves. They are made for standard 2 x 4-in. partitions. The various units have many obvious combination possibilities.

Manufactured under License of Merryweather Patent No. 1782147 granted Nov. 18, 1930.

TYPES and SIZES

No. 11—10-in. radius (true half circle) for 20-in. opening (21½-in. stud space).

No. 22—15¾-in. radius (true half circle) for 30-in. opening (33-in. stud space).

No. 33—Gothic design for 2 ft. 6 in. opening (33-in. stud space).

No. 44—Gothic design for 4 ft. 0 in. opening (51-in. stud space). (Can be easily cut down to fit a 42-in. doorway.)

No. 36.—Elliptic design for 3 ft 0 in. opening (39-in. stud space).

No. 55—Elliptic design for 5 ft. 0 in. opening (63-in. stud space).

No. 66—Elliptic design for 6 ft. 0 in. opening (72-in. stud space).

Material—Galvanized sheet steel.

Packed—In individual one-set cartons.

RED TOP COLD ROLLED CHANNELS

Description—A complete line of cold rolled channels for furring, suspended ceiling and partition construction. The legs and webs are true and have square corners. They can be readily spliced and formed.

Material—Open hearth steel.

Stock Lengths—16 and 20 feet (14 and 18 ft. to order).

SIZES and WEIGHTS

Note—*Sold only in full, unbroken bundles.*

¾ in.—308 lb. per 1000 lin. ft.; 20 pieces to bundle.

1 in.—360 lb. per 1000 lin. ft.; 10 pieces to bundle.

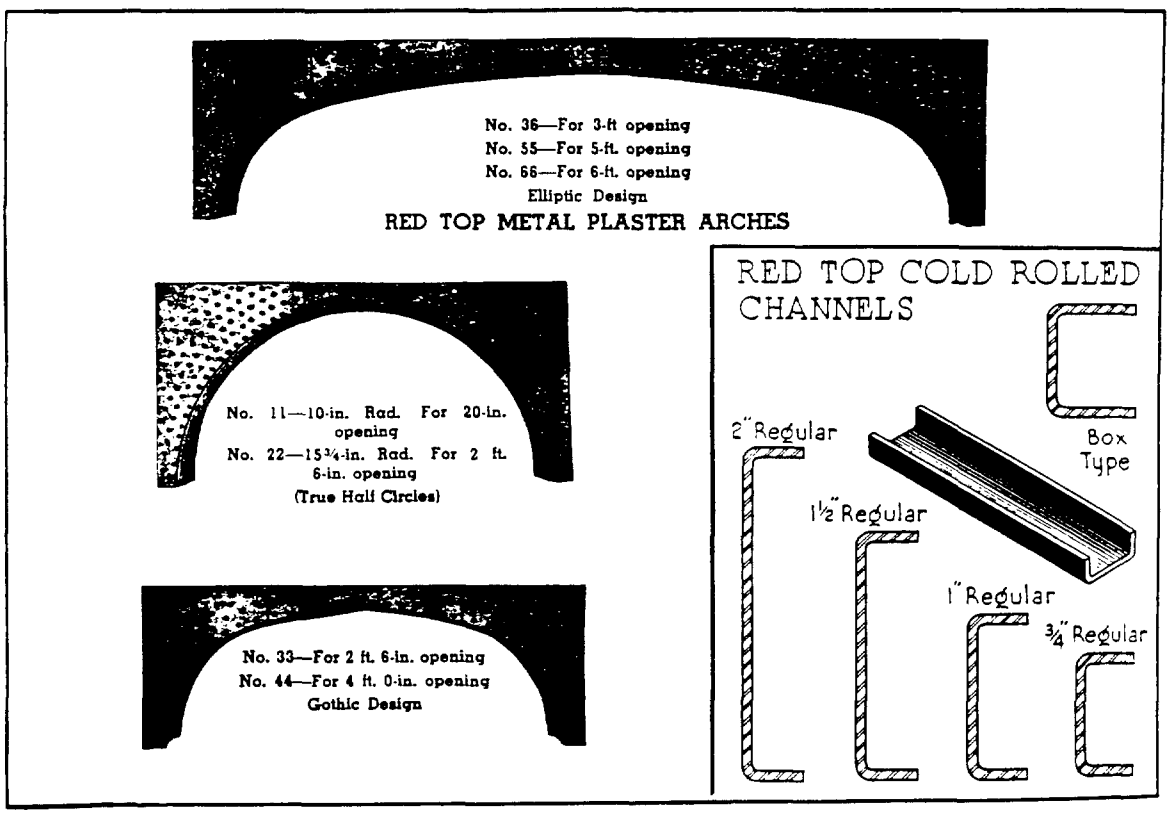
1½ in.—471 lb. per 1000 lin. ft.; 10 pieces to bundle.

2 in.—581 lb. per 1000 lin. ft.; 10 pieces to bundle.

Box Channels—$^{9}/_{16}$ x $^{11}/_{16}$ in., 276 lb. per 1000 lin. ft., packed 20 pieces to bundle.

RED TOP LATHING SUNDRIES

General—The USG line of metal lathing specialties is most complete. Besides those here listed and illustrated, many other sundry items needed for lathing application can be furnished.



PLASTERING SYSTEMS

RESILIENT PLASTERING SYSTEMS

GENERAL DESCRIPTION

The USG Resilient Plastering Systems are an adaptation of the highly successful USG Sound Control System of resiliently connected walls, ceilings, and floors. This adaptation permits Rocklath (gypsum lath units) or metal lath and plaster to be connected to wood or steel framing or furring members of walls, partitions, and ceilings by means of spring clips forming a "floating" wall or ceiling. There are two distinct types of USG Resilient Plastering System—the first uses Rocklath for a plaster base, the second uses Red Top Metal Lath as a plaster base. See details on pages 15 and 17.

ADVANTAGES

REDUCES PLASTER CRACKS — Ordinary settlement and movement in the structural framing is not transmitted to the plastered walls and ceilings because of the free floating construction.

STOPS SOUND—Sound that strikes the plaster finish and sets it in vibration is largely dissipated by the springs supporting the lath. Instead of the construction vibrating as a unit and thus setting up sound waves on the opposite side of the partition or ceiling, the lath and plaster finish vibrates as a unit suspended on springs more or less separate from its supports.

A partition built according to this specification provides a sound reduction of approximately 51.9 decibels. (This is equal to or better than two 3-in. tile partitions with a 1-in. air space between—a construction often used for its soundproofing efficiency.)

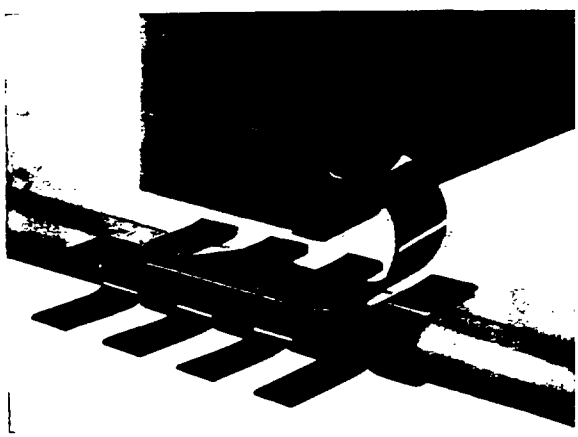
This system is particularly useful on ceilings. The resilient action is very effective against ceiling cracks and provides efficient sound insulation between stories.

ELIMINATES STREAKING—The floating construction prevents the formation of lath and joist marks that otherwise develop due to differences in heat loss.

FIREPROOF—All materials used in this construction are fireproof. See pages 1 and 8 for fireproof qualities of gypsum and Rocklath. Metal lath is likewise a recognized fireproof plaster base.

EASILY ERECTED—The system is erected by the lather. The clip is nailed to the wood framing with one Rocklath nail and the Rocklath is set in the clip. In metal lath construction, the lath is wired to pencil rods tied to the clip.

LOW IN COST—The materials costs are the same as standard Rocklath and Metal Lath plaster bases plus the addition of the clips. About one-fourth as many nails are required for Resilient Rocklath as for standard Rocklath application.





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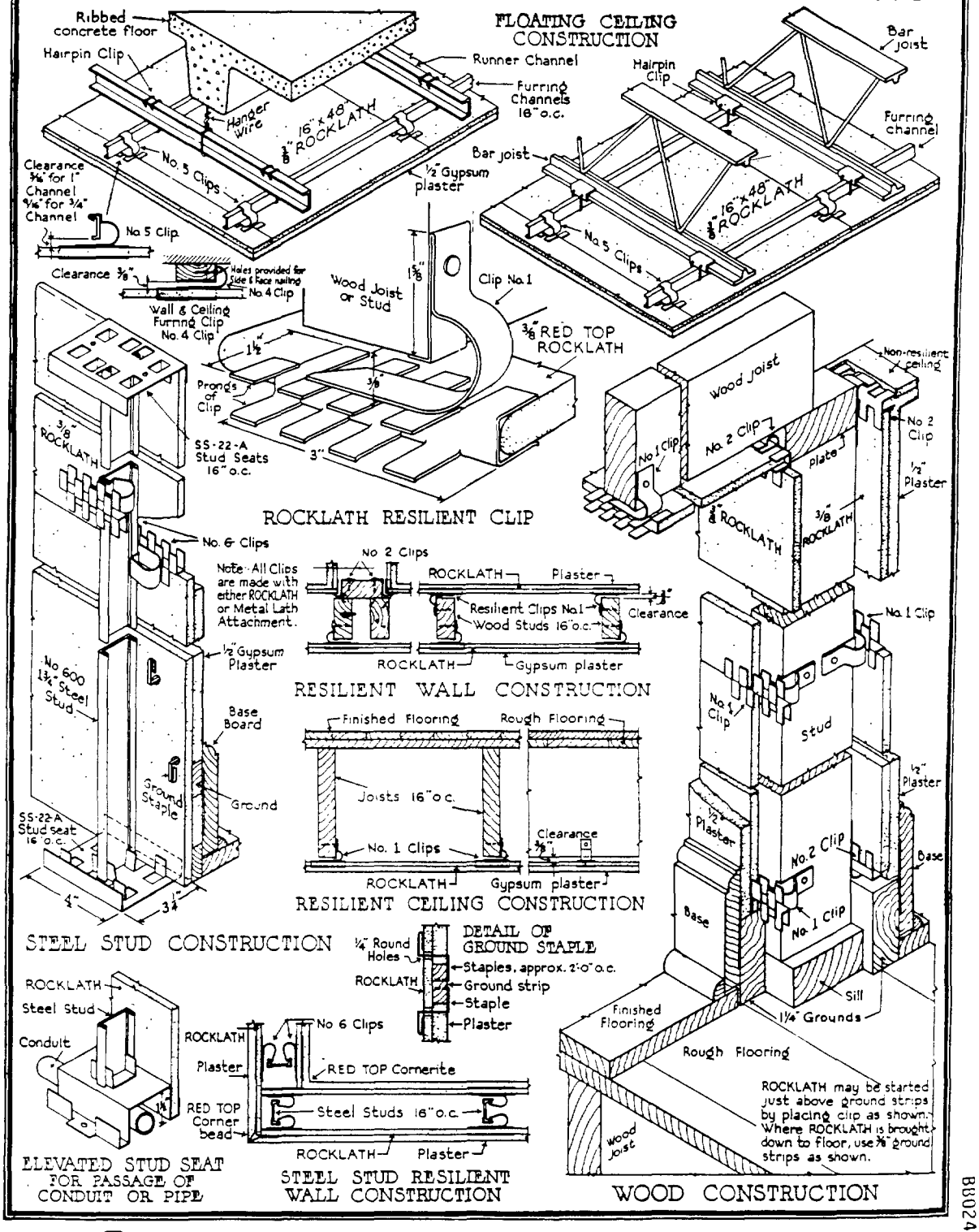
U S G RESILIENT SYSTEM – ROCKLATH DETAILS



USG ROCKLATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*The following provisions should be included as they apply under the proper headings of the specifications to be executed by others.*

(1a) CARPENTRY WORK—

(1a1) Furring—All masonry surfaces shall be furred.

(1a2) Framing—All studding, joists, and furring shall be set plumb, level, and true, spaced accurately 16 in. on centers.

(1a3) Grounds—(distance from face of framing member to face of finished plaster)—

1⅛ in. for wood framing and steel furring.

1¼ in. for steel stud partitions.

1⅜ in. for suspended or bar joist ceilings using ¾ in. furring channels (1⅛ in. for 1 in. furring channels).

(1a4) Bucks—Furnish wood bucks of sizes detailed at all door openings rigidly attached to steel buck supports.

(1b) ELECTRICAL CONSTRUCTION—All outlet boxes, etc., shall be accurately set with their faces flush with the finished plaster as established in paragraph (1a3) above.

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Rocklath Resilient Plastering System.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top cold rolled channels, 1½ in. for runner channels and ¾ in. for cross and wall furring.

(3c) ROCKLATH METAL PARTITION STUDS—USG No. 600 1¾ in. Cold Rolled Channels furnished with USG Rocklath Resilient Plastering System Stud Seats No. SS-22A.

(3d) GYPSUM LATH—Rocklath, ⅜ in. thick, 16 in. wide, 32 or 48 in. long.

(3e) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Rocklath Resilient Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3f) CORNERITE—3 x 3-in. Cornerite for all internal angles except where Resilient Corner Clips are used.

(3g) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—Starting at the floor, ground strips shall be applied which also serve as a backing for wood trim. A No. 2 clip shall be nailed to the stud with clearance above the ground strip and the Rocklath inserted in the clip. Framing members are spaced 16 in. on center and a clip applied at each framing member. Next place No. 1 clips over the upper edge of the first course of lath units and attach the clips to the studs as above. Continue with successive courses of lath in similar manner, breaking end joints of lath units in alternate courses. A No. 2 Clip shall be used at the angle where the wall meets the ceiling.

(4b) STEEL STUD PARTITIONS—METAL FURRING—

(4b1) Attach metal stud seats to floors and ceilings spaced accurately 16 in. on centers and in line vertically. Set channel studs in seat clips plumb and true.

(4b2) Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced 16 in. o. c. with flange to wall. Secure furring channels to floors and ceilings in a substantial manner. Substantially secure channels to walls, every 3 ft. approximately with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(4b3) Starting at the floor hook No. 6B clips on each channel with the lower prongs of clips resting directly on the floor. In the upper prongs of these clips set the bottom of the first row of gypsum lath units. Place the next row of No. 6B clips over the upper edge of the first course of lath units, each attached to a metal stud. As located, attach ½ in. thick grounds with ground staples to the face of the lath. Continue with successive courses of lath units, breaking end joints in alternate courses securing each with No. 6B clips set over the upper edges each attached to the metal stud. Secure top of the last course of units at the ceiling in the stud seat clips.

(4c) STEEL FURRED OR SUSPENDED CEILINGS—

NOTE—*Construction of furred or suspended ceilings shall be as specified in (B2), pages 22, 23.*

Starting at one side of the ceiling hook a row of No. 5 clips on the flanges of the ¾-in. runner channels. Slip the edge of the first lath course into the clips thus provided. Hook the next row of No. 5 clips over the channel runners spaced 16 in. o. c. and then slip the clip over the outer edges of the lath. Continue successive courses of lath in similar manner, breaking end joints in alternate courses.

(4d) CORNERITE—Use Cornerite only in internal angles where Resilient Corner Clips are not used. Fasten Cornerite to Rocklath with staples placed along outer edge 12 in. on centers, staggered.

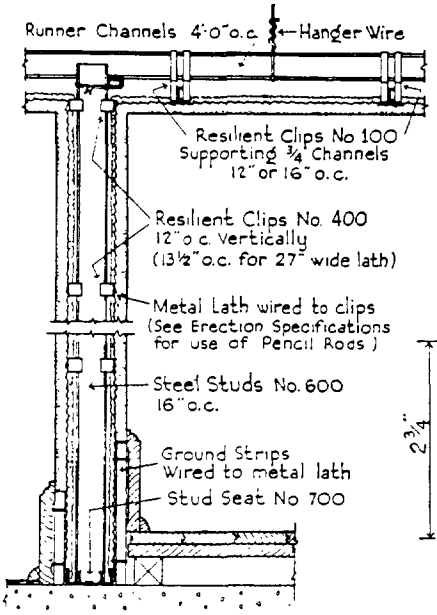
(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(5) PLASTERING

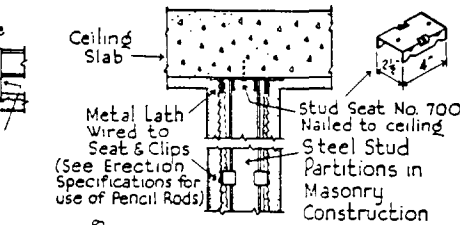
Do not wet lath. Apply plaster in three (3) coats (scratch, brown, and finish) to a full ½ in. thickness. Scratch coat shall be well scratched in to fill all interstices between lath units. Allow scratch coat to set and dry over night before brown coat is applied. (Do not "double back" with brown coat.)

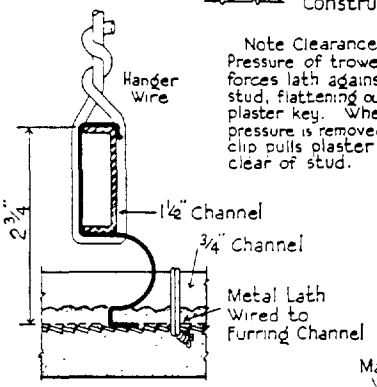
NOTE—*Otherwise plastering shall be applied as specified in Master Specifications, pages 21 to 28 inclusive.*

USG RESILIENT SYSTEM — METAL LATH DETAILS

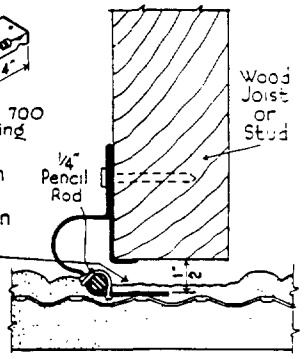


STEEL STUD PARTITION & SUSPENDED CEILING CONST.

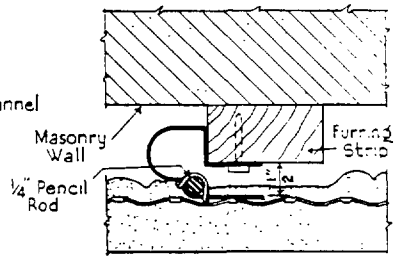




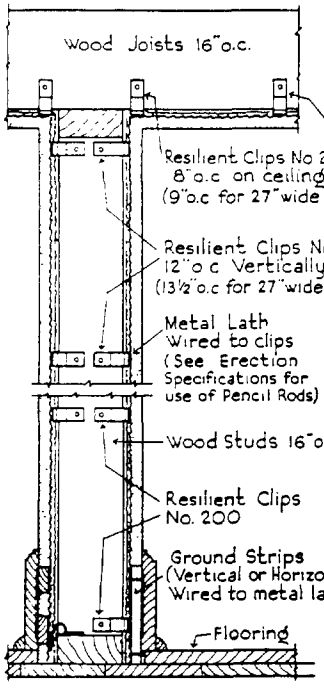
CLIP No. 100
For Suspended Ceilings



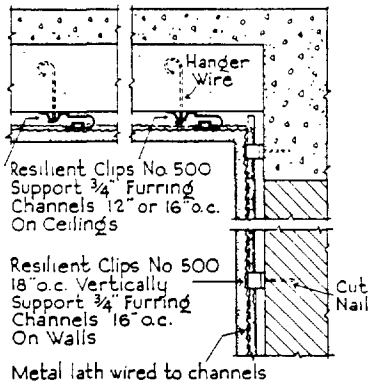
CLIP No. 200
For Wood Construction



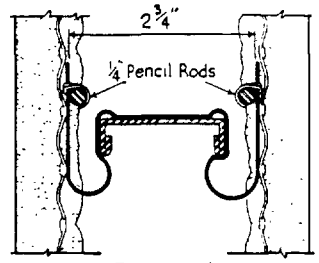
CLIP No. 300
For Wood Furring on Masonry Construction



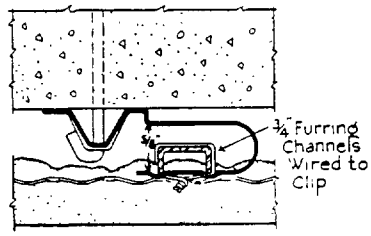
WOOD CONSTRUCTION



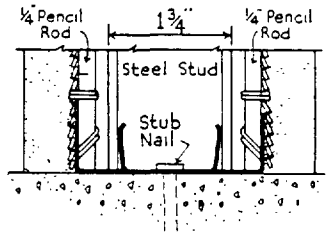
MASONRY CONSTRUCTION



CLIP No. 400
STEEL STUD No 600
For Steel Stud Partitions.



CLIP No. 500
For Masonry Walls and Ceilings



STUD SEAT No. 700
For Steel Stud Partitions

BB024 1068

USG METAL LATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Correlative Provisions given in paragraph 1, page 16, applying to Rocklath Resilient Systems, apply also to these specifications.*

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Resilient Plaster.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top ¾-in. flange **[cold] [hot]** rolled channels, 1½ in. for runner channels and **[¾ in.]** [1 in.] for cross and wall furring.

(3c) METAL PARTITION STUDS—Specially designed No. 600 1¾ in. cold rolled steel channel studs with USG Resilient Plastering System stud seats.

(3d) PENCIL RODS—Pencil Rods shall be ¼ in. in diameter.

NOTE—*Pencil Rods are recommended. See detail page 17.*

(3e) METAL LATH—**[Specify brand, material and finish]** lath; **(?)** lb. for horizontal positions and (?) lb. for vertical position.

NOTE—*Sec. (Cld), page 23. Red Top ¾ in. 2 Riblath is recommended. 2.75 lb. per sq. yd. for walls and 3.0 lb. per sq. yd. for ceilings for not over 16 in. stud or joist spacing. If Diamond Mesh, use 3.4 lb. weight. If Red Top ¾ in. Riblath, a weight of 3.0 per sq. yd. will be adequate for both walls and ceilings.*

(3f) WIRE—Wire shall be No. 18 ga. Galvanized Annealed Tie wire.

(3g) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Resilient Steel Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3h) CORNER BEADS—**[Specify No. and Type]** Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—**[Wood studs] [wall furring] [and] [joists]** shall be spaced 16 in. O.C.

(4a1) Starting at the juncture of the wall and ceiling, attach No. 200 clips with 4d common nails through clip nail holes, spacing clips **[16 in. O.C.] [12 in. O.C.] [along studs] [wall furring] [and] [12 in. O.C.] [8 in. O.C.] [along joists].**

NOTE—*For spacings, see Note B under (4a2).*

(4a2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue, fitted into the radius at the shoulder.

NOTE A—*Pencil Rods may, optionally, be run at right angles to the direction of the framing members, wired to the out side face of the clip tongue.*

NOTE B—*Pencil Rods may be eliminated by spacing clips 12 in. O. C. along studs (13½ in. for 27 in. wide lath) and 8 in. O. C. along joists (9 in. for 27 in. wide lath) and attach lath directly to the clips.*

(4a3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].** Lath at junction shall be bent over 6 in. from ceiling on to wall.

(4b) STEEL STUD PARTITIONS—No. 600 Channel Studs shall first be set in No. 700 Stud Seats at top and bottom and then set in position spaced 16 in O.C. Stud Seats shall then be securely nailed to floor and ceiling.

(4b1) Starting at the juncture of the wall and ceiling, attach No. 400 clips to Channel Studs, spaced **[16 in. O. C.]** [12 in. O.C.] by springing the clips (deep throat side first) over the channel flanges.

(4b2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue.

NOTE—*See Note B under (4a2) above.*

(4b3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].**

(4c) MASONRY WALLS, CONCRETE JOISTS, ETC.—No. 500 clips shall be securely attached to **[brick and clay tile walls with 10d cut nails] [Pyrobar walls with 2 in. staples] [concrete slabs or joists by No. 9 ga. wire or a 10d hook nail which has been placed in position before concrete is poured and extending 1¼ in. below the surface].**

(4c1) Spacing of clips along **[walls] [flat concrete slabs]** shall be **[24 in. O.C. for 12 in.] [18 in. O.C. for 16 in.] [15 in. O.C. for 19 in.]** furring channel spacing.

(4c2) Spacing of clips on concrete joists spaced 24 to 26½ in. O.C. shall be 12 in. O.C. along joists.

(4c3) Furring channels, set flat (not on edge) with flanges in contact with the lath, shall be attached to the **[inside] [outside]** face of the clip tongue with a double strand of wire.

(4c4) Metal lath shall be wired to furring channels at 8 in. intervals.

(4d) SUSPENDED CEILINGS—Hanger rods (¼, ⅜, or ½ in. in diameter) set in concrete forms and cast into concrete shall be spaced 4 ft. O.C. in each direction extending **[give depth of suspended ceiling]** plus 12 in. for tying. 1½-in. runner channels shall be attached to hanger rods.

(4d1) Running at right angles to runner channels, furring channels spaced **[12 in.] [16 in.]** O.C. shall be attached by slipping No. 100 clips over the furring channels and hooking the upper portions of the clips over the runner channels.

(4d2) Metal lath shall be wired to furring channels at 8 in. intervals.

(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(4f) PLASTERING—

NOTE—*Follow standard specification for plastering over metal lath as given in Master Specification, pages 25 to 28 inclusive. Plaster shall be full ¾ in. from back face of lath to face of plaster.*

USG BRIDJOINT PLASTERING SYSTEM

This plastering system comprises a distinct improvement in the method of applying Rocklath which results in better plastered walls and ceilings at lower costs. It may be used with regular Rocklath, Perforated Rocklath or Insulating Rocklath.

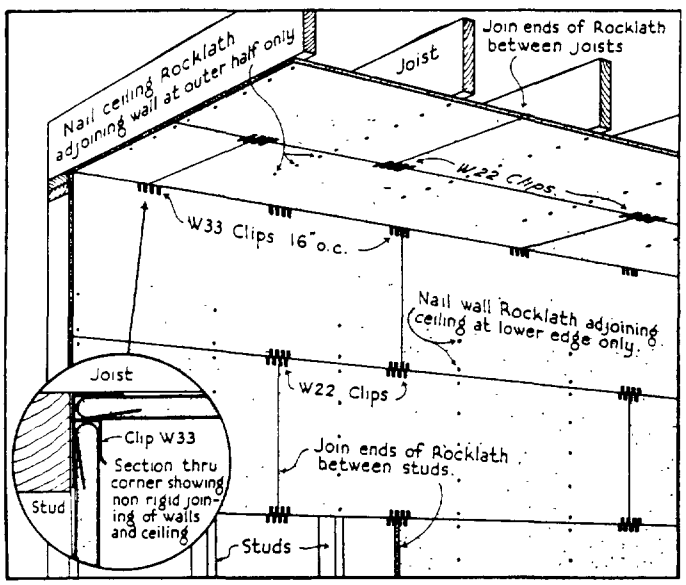
The Rocklath is nailed to the studs or joists in the usual manner but is placed so that the ends of the boards come between the supports and not on them. They are reinforced by special Bridjoint Clips at this point. This eliminates joints at the supports and minimizes cracking.

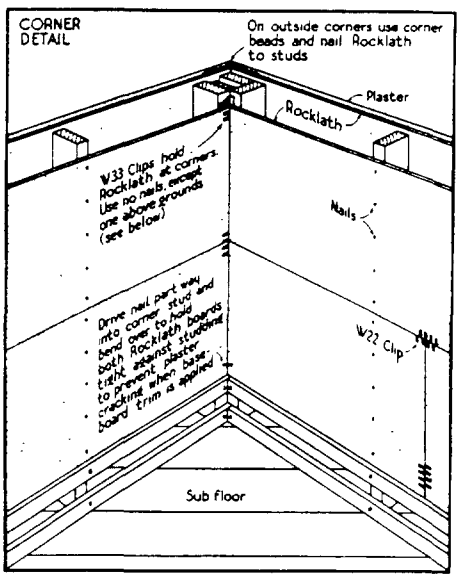
The Rocklath at corners and at ceiling angles is not nailed to the framework, but is reinforced with Bridjoint Corner Clips. This prevents the transmission of stresses at these points to the lath and plaster and eliminates unsightly strain cracks.

The curved prongs on the Bridjoint clips provide spot grounds over the entire lathed area, insuring a full thickness of plaster. This is of special value on ceilings where grounds are not usually provided.

The Bridjoint System reduces waste because all odd lengths of the Rocklath can be used. Since nailing is not necessary at the ends of the boards, 25 per cent less nails are required. The substitution of the Bridjoint Corner Clip System saves the cost of metal lath corner reinforcement and the labor of applying it.







USG FREFLOTE BRIDJOINT SYSTEM

This is similar to the Bridjoint Plastering System with one exception; instead of being nailed at the supports the Rocklath is attached with semi-rigid Freflote Bridjoint Clips which help to absorb the stresses in the lath and plaster caused by movement of the framework.

USG FREFLOTE PLASTERING SYSTEM

This system differs from the Freflote Bridjoint System by having the end joints between boards come over the supports. It uses special clips that both hold the boards to the support and reinforce the end joint.

All the above systems provide a fireproof construction that minimizes cracking and reduces sound transmission at low cost.

BB024 1070

TRUSSTEEL* · STUDS

A MODERN, FIREPROOF SYSTEM OF PARTITION CONSTRUCTION

EASY TO ERECT—Because of practical design, light weight, and the adjustable feature, Trussteel-Hollow Stud Partitions are easily and quickly erected. One workman can erect the system. The studs are placed in runner tracks which are attached to floor and ceiling. They are secured at proper spacing with wire, looped in holes provided on the flanges. Metal lath attachment is standard practice.

ADJUSTABLE—Trussteel-Studs are adjustable to variance in ceiling heights. The sliding extension permits an upward extension of two inches or a reduction from the stock length of six inches. A ten-foot stud, therefore, is adjustable from nine feet, six inches to ten feet, two inches. This adjustable feature which becomes an integral part of a Trussteel-Stud is a time and labor saver.

RIGID—The unique truss design provides a bracing effect which adds rigidity and strength that enables the partition to resist impacts, vibration, etc. When properly erected and plastered, a Trussteel-Partition should have strength equal to a tile or precast block partition of equal thickness.

EASY TO PLASTER—Because Trussteel-Studs provide a rigid support for the metal lath plaster base, the proceaure of plastering in no way differs from a regular metal lath job. The type of lath to be used depends upon the stud spacing.

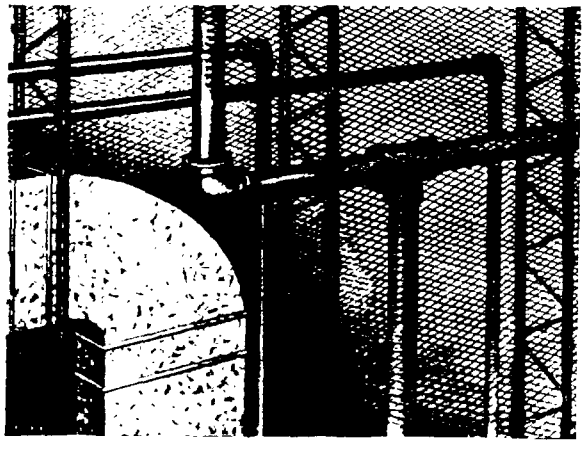
CONCEALS VENTILATING DUCTS, PIPES, ETC.—The fact that Trussteel-Studs provide a hollow partition, ventilating ducts, pipes, conduits, etc. can be concealed by running them through the studs in the ample space provided between the cross supports and the uprights. Since the cross-bracings are twelve inches on center, ventilating ducts can be run horizontally, as well as vertically, through the partition. Two-inch pipes can be run through a 3¼-inch Trussteel-Stud.

STANDARD SIZES—Lengths—From 7 feet 0 inches to 20 feet inclusive, in increments of 3 inches. Lengths of from 4 to 20 feet are supplied in two sections, complete with splicing feature. These are the stock or "fixed" lengths. The adjustable feature on each of these lengths permits adjustment to 4 inches over the stock length purchased.

Widths—2, 3, 3¼, 4, and 6 inches. Five popular sizes to meet average requirements. Packed in bundles of convenient size to fit order requirements.

RUNNER TRACKS—Made in eight-foot, two-inch lengths. Packed in bundles of convenient size to fit order requirements.

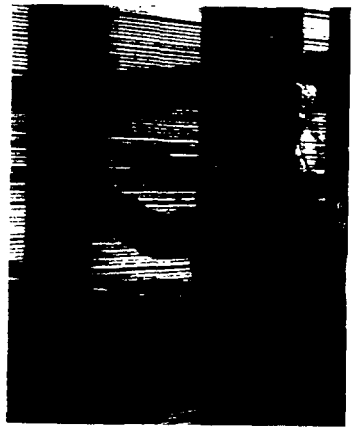
For further information, write for Catalog ML-41.



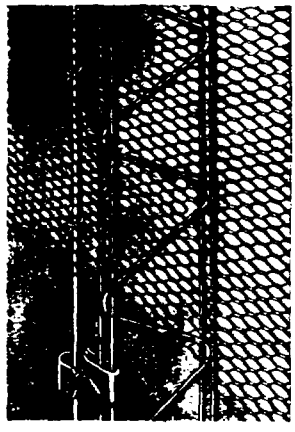
A six-inch Trussteel-Stud Partition allows ample room for concealing 4 in. by 10 in. duct work, both vertical and horizontal runs. In addition, there is unrestricted space for piping.



Extension feature at top of stud permits adjustment to various lengths.



This entire partition was erected by one lather (3¼-in. studs and ⅜-in. lath).



Note clip used with steel studs in resilient system. See page 18.

*Trade-Mark

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BB024 1071

MASTER SPECIFICATIONS

INTERIOR LATHING and PLASTERING

PREFACE

SPECIFICATION FORM—The form of this specification is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously do not apply to every building. In formulating the "Interior Lathing and Plastering Specifications" for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

LOCAL ORDINANCES—Correlate these specifications with the requirements of Local Ordinances and Trade Customs relating to this division of the work.

ALTERATIONS and ADDITIONS—These specifications cover new work only. For additions and alterations add such clauses covering repairs and replacements and the joining of old and new work as may be required.

ADVISORY SERVICE—The technical staff of the United States Gypsum Company is at all times accessible for advice and recommendations in the formulating of the specification for Interior Lathing and Plastering. Special data, the result of much extended research work, relating to the selection and application of Interior Plastering and "Explanations of Job Conditions which Affect Plastering" will be furnished on request.

NOTES—Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS or PHRASES—Wherever words or phrases occur in the body of the specification paragraph printed in bold face type and enclosed in brackets, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "specify" occurs enclosed in brackets, thus **[specify]**, add the particular word or clause applicable, optional with the specification writer.

(A) GENERAL PROVISIONS

NOTE—*For complete plastering systems see USG Resilient and Bridjoint Plastering Systems pages 14 to 19 inclusive.*

NOTE—*For Sabinite Acoustical Plaster, see the* United States Gypsum Company's *complete section including "Sound Control Service."*

(A1) GENERAL CONDITIONS

The general conditions governing the General Contract apply to the work under this division.

NOTE—*The American Institute of Architects' Standard forms of General Conditions is advocated.*

(A2) WORK INCLUDED

(A2a) The work included under this heading shall be the following:

(A2b) All metal suspended or furred ceilings.

(A2c) All metal stud partitions.

(A2d) All metal wall furring.

(A2e) All miscellaneous metal furring.

(A2f) All lathing.

(A2g) All plastering.

(A3) GENERAL SCOPE

NOTE—*List and locate either in schedules on plans or here portions of the building to be finished, the base to receive plaster and here include sufficient data to insure accuracy in estimates.*

(A3a) All plastering, unless otherwise specially noted, shall be three (3) coat work—scratch, brown, and finish coats.

(A3b) The following require no plaster **[list and locate].**

(A3c) The following require but **[one (1)] [two (2)]** coats of plaster **[list and locate].**

(A3d) Ceilings noted as furred **[on plans] [in schedules]** are furred with **[metal] [wood].**

(A3e) All supports for lath are spaced 16 in. on centers.

(A3f) All exterior walls are furred with **[specify].**

(A3g) Exterior walls are not furred. Plaster shall be applied directly on the **[specify].**

(A3h) Partitions are of **[specify].**

(A3i) Walls back of finished tile work shall be lathed only. No plaster shall be applied.

(A3j) Omit all plaster on interior masonry walls and **[hollow tile] [Pyrobar]** partitions back of marble work.

(A3k) All exterior masonry walls, not furred, shall receive one coat of plaster back of marble work.

(A3l) Omit the finish coat of plaster on all stud walls back of **[marble work] [blackboards] [specify].**

(A3m) Omit the finish coat of plaster back of all **[wood wainscots] [specify]** and similar solid trim.

(A3n) **[Specify]** shafts shall be plastered full height.

(A3o) All chases in unfurred masonry walls which are to be plastered shall be lathed with metal lath. Lap the masonry at least 3 in. and secure at masonry joints. Wide chases (over 16 in.) shall be furred to receive lath.

(A4) SCAFFOLDING

(A4a) This contractor shall provide and erect all scaffolding, staging, etc., necessary for the proper execution of his work.

(A4b) He shall co-operate with other trades to the extent that erection of scaffolding shall not conflict with the execution of other work immediately preceding or carried on, without undue conflict, simultaneously with the lathing and plastering.

(A4c) If, after due authority has been granted to erect scaffolding, it is necessary to remove parts thereof for the accommodation of others, demolition and re-erection shall be done only after allocation of cost has been equitably adjusted.

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(A5) HEAT and VENTILATION

(A5a) Adequate temporary heat and ventilation will be provided by others for the proper execution of work under this contract.

(A5b) This contractor shall provide salamanders, fuel and attendance and shall maintain without fire hazard adequate heat and ventilation for the proper execution of work under this contract.

(A6) CLOSURES

(A6a) Provide temporary cloth closures for all exterior openings during plastering.

(A6b) During the summer months exterior openings shall be screened to prevent plaster from drying out before it has set.

(A7) PROTECTION

(A7a) Adequately protect from damage and plaster droppings all finish of the building.

(A7b) Adequately protect the building with layers of heavy waterproof paper from damage by water at sources, gauging barrels and mixing boxes.

(A8) DAMAGE

Breakage of glass or other damage to the building or equipment through accident or carelessness incident to work under this contract shall be satisfactorily repaired or made good by replacement at this contractor's **expense.**

(A9) CLEANING

(A9a) At completion, remove all rubbish, plaster droppings, etc., and leave the building broom clean.

(A9b) This contractor shall remove all plaster from glass and other finish and leave in the condition found.

(A10) CUTTING and PATCHING

After the erection of finish by others, this contractor shall, when called upon, cut out where required, patch and point up all finished plaster work and leave the entire work in perfect condition.

(A11) SAMPLE PANELS

This contractor shall furnish and erect, where directed for the approval of the architect, sample panels of one square yard area each, to illustrate each type of finish required under this contract. The finished work shall equal in all respects the approved panels.

(A12) CONCRETE SURFACES

NOTE—*Concrete surfaces to receive plaster must not be smooth. Use rough form boards. Avoid dressed or oiled boards.*

(A12a) Concrete surfaces must be dry and free from dust, dirt and efflorescence.

(A12b) Burn off all oil or grease from surface with a torch.

(A12c) Remove efflorescence with a wire brush and wash with a one (1) to five (5) solution of muriatic acid and water. Thoroughly wash off acid with clean water.

(A12d) Surfaces too smooth to receive plaster shall be thoroughly hacked.

(A12e) Hacking will be done by others.

(A13) GROUNDS

All lathing and plastering shall be laid to not less than the following grounds:

¾ in. for **[¼ in. gypsum lath] [wood lath] [expanded metal lath] [⅞ in. for ⅜ in. gypsum lath]; [1 in. for ½ in. insulating board lath];** ⅝ in. for **[brick] [or] [clay tile]** [½ in. for Pyrobar].

NOTE—*See pages 15 to 18 inc. for Resilient System Grounds.*

(A14) GUARANTY

(A14a) This contractor shall guarantee all work and materials under this contract for a period of **[specify]** from the date of completion and acceptance.

(A14b) Any defects attributable to faulty workmanship or material furnished under this contract shall be made good at this contractor's expense.

(A14c) This shall include the cost of repairs or replacement of any decorating or other finish damaged by the defects.

(A15) WORKMANSHIP

All work shall be executed by skilled workmen in a manner to satisfactorily fulfill the provisions of these specifications.

(A16) EXAMINATION

(A16a) All construction to receive lathing and plastering is presumed to be substantial, sound, level, plumb and true.

(A16b) This contractor shall examine all construction, supports and base to receive lathing and plastering and shall report to the architect in writing any defects which will deleteriously affect work under this contract.

(A16c) Failure to so report defects for correction or replacement prior to execution of the work under this contract will be construed as acceptance of the construction and shall not relieve the contractor from obligation under his guaranty.

(B) METAL FURRING · METAL STUD PARTITIONS

(B1) MATERIALS

NOTE—*See page 13.*

(B1a) METAL FURRING—[Specify sizes] Red Top Cold Rolled Channels.

(B1b) METAL PARTITION STUDS—[Specify sizes] Red Top Cold Rolled Channels.

(B2) FURRED or SUSPENDED CEILINGS

(B2a) GENERAL—Where so indicated on plans **[or listed in schedules]** ceilings shall be furred or suspended with metal furring members.

(B2b) HANGERS—Hangers shall be placed not to exceed 4 ft. center to center in either direction.

The minimum size for hangers shall be No. 8 galvanized wire, 1 x ⅛-in. flats or ½-in. round mild steel rods.

Upper ends of hangers of wire, rods, or flats, shall be of sufficient length to wrap around beams or provide a suitable anchorage in the concrete or tile.

Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured.

When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear through tile and secured on upper side by steel rod or toggle bolt.

(B2c) RUNNER CHANNELS—Runner Channels shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. weighing not less than 456 lb. per thousand lineal feet.

Lower end of wire hangers shall be secured to runner channels by three twists; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than ⅜-in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

(B2d) FURRING CHANNELS—Furring Channels, spaced **[specify]** shall not be less than ¾ in. with a minimum weight of 276 lb. per thousand lineal feet; they shall be erected at right angles to the runner channels and shall be securely saddle tied to them by at least three strands of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

NOTE—*Maximum spacing should be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; 12 in. for 2.75 lb.; 16 in. for 3.0 lb.; 19 in. for 3.4 lb. ⅜ in. Flat Rib Lath; 16 in. for 2.5 lb.; 24 in. for 3.0 lb.; 31½ in. for 3.4 lb. or 4.0 lb. ⅜ in. Rib Lath.*

(B3) METAL STUD PARTITIONS

(B3a) SOLID PARTITIONS—Metal studs for solid partitions shall be not less than ¾-in. cold or hot rolled channels weighing not less than 276 lb. per thousand lineal feet, and spacing of studs shall conform with the requirements for the weight of lath specified.

(B3b) HOLLOW PARTITIONS—Metal studs for hollow partitions shall be constructed of a double row of ¾-in. channels weighing not less than 276 lb. per thousand lineal feet and spacing of studs shall conform with the requirements for the weight of lath specified.

NOTE—*Also see Trussteel Studs, page 20.*

(B3c) GENERAL—

(B3c1) Studs shall be secured in position by inserting ends in holes punched ¾ in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals.

(B3c2) Studs shall be secured on wood floors by wire tying to nails driven 1 in. into floors and projecting at least 1 in. above.

(B3c3) Where metal lath ceilings are used a small hole shall be made in the ceiling lath and the end of the channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(B3c4) Splicing of studs shall be made by lapping channels *not less than 8 in. with the flanges interlocked and tied.*

(B3c5) Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(B3c6) In every case one channel shall be set next to wood buck at each side of openings and double wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

(B4) METAL WALL FURRING

Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced **[specify]** on centers with flange to wall. Furring channels shall be substantially secured to floors and ceilings and shall be substantially secured to walls with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(B5) MISCELLANEOUS METAL FURRING

Provide ¾-in. channel furring for all **[false beams] [ornamental plaster cornices] [stair soffits] [specify]**, etc., as shown on the plans and as detailed. Furring shall be set **[specify]** o.c. and rigidly secured to the building construction.

(C) LATHING

(C1) MATERIALS

(C1a) WOOD LATH—No. 1 **[white pine] [cypress] [spruce]** free from knots, sap and bark.

(C1b) GYPSUM LATH—[Perforated] [Insulating] Rocklath ⅜ in. thick, 16 x 32 in. and 16 x 48 in.

NOTE—*For Rocklath, see pages 7 and 8.*

(C1c) FIBER INSULATING LATH—Weatherwood Insulating Lath **[½ in.] [1 in.]** thick, 18 x 48 in.

NOTE—See separate catalog for U. S. G. Weatherwood Insulation.

(C1d) METAL LATH—[Specify brand, material and finish] lath; —— lb. for horizontal positions and —— lb. for vertical positions.

NOTE—*See pages 9, 10 and 11. Select and specify weight for both horizontal and vertical positions.*

NOTE—*Minimum weights should be as follows:*

(a) Expanded Metal Lath—

(a1) ***(For vertical positions, partitions, etc., attached to metal supports)*** *12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively except for solid partitions where 2.2 lath may be used on 12 in. spacings and 3.4 lath on 16 in. spacing. For nailed-on partitions, maximum spacing shall be 16 in. for all flat laths, minimum weight to be 2.5 lb.*

(a2) ***(For tied-on ceilings attached to metal supports)*** *maximum spacing shall be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; for nailed-on ceilings maximum spacing shall be 16 in. for these laths.*

(b) ⅛ in. Flat Rib Lath—

(b1) ***(For nailed or tied-on partitions and furring)***

For supports spaced not to exceed 16 in. o.c.	*2.75 lb.*
For supports spaced not to exceed 19 in. o.c.	*3.0 lb.*

(b2) ***(For nailed or tied-on ceilings)***

For supports spaced not to exceed 12 in. o.c	*2.75 lb.*
For supports spaced not to exceed 16 in. o.c	*3.0 lb.*
For supports spaced not to exceed 19 in. o.c	*3.4 lb.*

(c) ⅜ in. Rib Lath—

(c1) ***(For nailed or tied-on partitions and furring)***

For supports spaced not to exceed 19 in. o.c	*2.5 lb.*
For supports spaced not to exceed 24 in. o.c	*3.0 lb.*
For supports spaced not to exceed 31½ in. o.c	*3.4 lb.*

(c2) ***(For nailed or tied-on ceilings)***

For supports spaced not to exceed 19 in. o.c	*3.0 lb.*
For supports spaced not to exceed 24 in. o.c	*3.4 lb.*
For supports spaced not to exceed 31½ in. o.c	*4.0 lb.*

(C1e) CORNERITE—Red Top Cornerite, 3 x 3 x 96 in. with special selvage edge.

(C2) APPLICATION of WOOD LATH

(C2a) All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [specify]** shall be lathed with wood lath. Lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart and shall be secured to each bearing with standard wood shingle nails, two (2) to each end and one (1) to intermediate bearings.

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Lathing shall break joints every eight laths, all put on horizontally. Under no circumstances shall lathing stop and form a long, straight, vertical joint nor be put on vertically to finish out at angles or corners; neither shall any lath run through and behind studding from one room to another. All corners must be made solid before lath is applied.

(C2b) All re-entrant angles shall be reinforced over the wood lath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C3) APPLICATION of ROCKLATH

All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [furred or suspended ceiling] [specify]** shall be lathed with **[Rocklath] [Perforated Rocklath] [Insulating Rocklath].**

(C3a) Cutting shall be done by scoring with a sharp hatchet or knife and then breaking down and up over a straight edge.

Nails shall be 1 1/8 in., 13 gauge, blued, 3/8 in. flat head, smooth diamond point.

Rocklath boards shall be applied with the long dimension at right angles to the framing members, butted, with broken joints in each course. Stagger joints between walls and ceilings so that the vertical joints on wall will not meet ceiling joints.

Fit Rocklath tight together at all re-entrant angles and corners. Cut accurately and fit Rocklath neatly around all electric outlet boxes, etc.

Space nails approximately 4 in. apart using 5 nails per stud. First nail ½ in. from edge, nailing to center support first, then outer edges. Each nailing edge must have a firm bearing on studs, joists and furring. Drive nails home.

(C3b) All re-entrant angles shall be reinforced over the Rocklath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C4) APPLICATION of WEATHERWOOD INSULATING LATH

NAILING—Use 1⅛ in. blued lath nails with 5/16 in. heads for ½ in. thickness lath. Use 1¼ in. blued lath nails with 5/16 in. head for 1 in. thickness lath. Space nails 5½ in. apart, set ½ in. from edges, nailing lath to all framing members.

First nail to intermediate framing members and then to ends. Nail long edges at angles of wall and ceiling. Where Fasnap Reinforced Weatherwood Insulating Lath is used, the Fasnap Reinforcement must not be nailed.

(C5) APPLICATION of METAL LATH

(C5a) GENERAL—All **[specify location]** shall be lathed with metal lath.

(C5b) ATTACHMENT TO WOOD SUPPORTS—Metal lath shall be attached to wood studs and joists by not less than 4d and 6a nails, *respectively, driven to a penetration of not less than* ⅞ in. and 1 in., respectively, and spaced not to exceed 6 in. o.c. or by clips or devices with equivalent penetration and holding power. There shall be one tie on side laps, half way between supports.

(C5c) ATTACHMENT TO METAL SUPPORTS—Metal lath shall be wired to metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galvanized soft annealed wire and tie shall always occur where sides of sheets lap at channels. There shall be one tie on side laps half way between channels.

(C5d) ERECTION OF METAL LATH—

(C5d1) Metal lath shall be erected with the long dimensions of sheet across the supports.

(C5d2) Lath shall be first applied to the ceilings and the sheets carried down 6 in. onto the walls and partitions. If metal lath is not used on the ceilings, the lathing shall start at the top of the wall and be bent and carried up 6 in. onto the ceiling joists so that no joints occur at juncture of ceiling and walls; and on walls, all lath shall be started one framing member away from corner and *bent into the corner and carried onto the abutting wall so as to* avoid a joint at juncture of walls. Where ⅜-in. ribbed lath is used on ceilings or walls it shall be butted into all joints, and strips of flat lath shall be bent into the shape of an "L", 3 in. on each side, and securely wired along each edge in all corners. Strips shall not be fastened at the corner, but only along each edge of the sheet.

(C5d3) Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to the supports. Fastenings shall be so placed that they shall occur where sides of sheets lap at supports.

(C5d4) Expanded metal lath shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

(C5d5) Rib lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

(D) PLASTERING ACCESSORIES

(D1) MATERIALS

(D1a) METAL PLASTER ARCHES—Red Top Metal Plaster Arches No. **[s] [specify].**

NOTE—*See page 13.*

(D1b) CORNER BEADS—Red Top Corner Bead No. **[specify].**

(D1c) BASE SCREEDS—Red Top Base Screed No. **[specify].**

(D1d) METAL PICTURE MOULD—Red Top Picture Mould No. **[specify].**

(D1e) METAL EXPANSION CASING—Red Top Metal Casing No. **[specify].**

(D2) APPLICATION of METAL PLASTER ARCHES

Secure metal plaster arches in position over the lath, set accurately in accordance with the details. Corner beads on vertical jambs shall join arch beads without break at the juncture.

(D3) APPLICATION of CORNER BEADS

All corners **[both vertical and horizontal]** shall be protected with corner beads for their full height **[or length].**

NOTE—*If there are exceptions, so note.*

Corner beads shall be rigidly and substantially secured, accurately set, plumb, true and straight.

(D4) APPLICATION of METAL BASE SCREEDS

The following rooms shall have base screeds:

NOTE—*List and locate here or in schedules on plans.*

Screeds shall be substantially secured, accurately set, straight and true to line and parallel with the finished floor line.

(D5) APPLICATION of METAL PICTURE MOULDS

The following rooms shall have metal picture moulds:

NOTE—*List and locate here or in schedules on plans.*

Picture moulds shall be substantially secured, accurately set, straight and true to line and parallel with the ceiling line.

(D6) APPLICATION of METAL EXPANSION CASINGS

The following openings shall have metal expansion casings:

NOTE—*List and locate here or in schedules on plans.*

Expansion casings shall be accurately set in line with jambs. Secure with screws, locking clips and stamped casing miters.

(E) PLASTERING • BASE COATS
(Scratch and Brown Coats—Two Coats)

(E1) MATERIALS and MIXING

NOTE—*See pages 3 and 4.*

NOTE—*Select type best adapted.*

(E1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each mix. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in mixing water.

Do not mix more material than can be applied in one (1) hour nor one mix with another. Never retemper plaster after it has commenced to set.

All material except sand shall be as manufactured by the United States Gypsum Company.

(E1b) WATER—Water shall be clean and free from impurities.

(E1c) SAND—Sand used for plastering in which gypsum is employed shall consist of fine granular material, naturally or artificially produced by the disintegration of rock containing not less than 80 per cent by weight of silica, feldspar, dolomite, magnesite or calcite, and shall be free from saline, alkaline, organic or other deleterious substances graded from fine to coarse within the following limits:

	Percentage Retained	
	Maximum	Minimum
Retained on a No. 4 sieve	0%	—
Retained on a No. 8 sieve	10%	0%
Retained on a No. 30 sieve	80%	15%
Retained on a No. 50 sieve	95%	70%
Retained on a No. 100 sieve	—	95%
Weight removed by decantation	Not more than 5%	

The sieves shall conform to the requirements of the Standard Specifications for Sieves for Testing Purposes of the American Society for Testing Materials (Designation. E11).

(E1d) [Specify brand] CEMENT PLASTER (UNSANDED)—

(E1d1) For scratch coat on **[gypsum] [wood] [metal]** lath, mix two (2) parts by weight of dry sand with one (1) part of plaster.

(E1d2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile]**, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d3) For second or brown coat, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d4) Do not mix sand and plaster until ready to add water.

(E1d5) First put in raised end of the mixing box a layer of sand, then one of plaster. Hoe dry from one end of box to other and then back again, working sand and plaster thoroughly together to a uniform color. Put water in the low end of box; hoe plaster into the water, mixing thoroughly.

(E1e) [Specify brand] WOOD FIBER PLASTER—

(E1e1) Use neat for scratch coat on **[gypsum] [wood] [metal]** lath.

(E1e2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile]**, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

(E1e3) For second or brown coat, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

NOTE—*In (E1e2) and (E1e3) above, it is customary to use the "sanded mix". In some territories, due to sand conditions, the "neat" material is advocated. Consult the USG representative for best local practice.*

(E1e4) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water and allow to soak from 10 to 15 minutes. Then mix to proper consistency.

(E1f) [Specify brand] PREPARED PLASTER (SANDED)—

(E1f1) Add nothing to the material but water.

(E1f2) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water, mixing thoroughly to the proper consistency for application.

(E1g) BONDCRETE (FOR ALL CONCRETE SURFACES)—

(E1g1) For both scratch and brown coats.

(E1g2) Add nothing to the material but water.

(E1g3) Put the plaster in the upper end of mixing box and water in lower end. Hoe plaster into water. Allow the material to soak from 10 to 15 minutes and mix thoroughly.

(E2) APPLICATION of BASE COATS—GENERAL

Keep plaster from freezing for 24 hours after application.

In hot, dry weather screen all openings while plastering to prevent material from drying out before it has set. If plaster should dry out (showing soft, white spots or areas) sprinkle these portions so affected with clean water from a spray pump or a brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

For grounds see "Grounds," par. (A13), page 22. Unless specially otherwise noted, all plaster shall be applied in three (3) coats—scratch, brown and finish. Scratch coat shall be applied and the surface well scratched. When scratch coat is set and nearly dry, follow with brown coat. Brown coat shall be brought to a true level plane with rod and darby flush with the grounds, ready to receive finish coat. Angles and corners shall be left straight, true and plumb.

(E3) APPLICATION • Cement and Prepared Plasters

(E3a) For best results over all bases, let scratch coat set before applying brown coat.

(E3b) ON WOOD LATH—Soak lath thoroughly the day before and again an hour or so before applying the plaster. Apply in two (2) coats, scratch and brown, the scratch with sufficient pressure to obtain a good key. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3c) ON GYPSUM LATH and FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats, scratch and brown. Scratch coat shall be well scratched in to fill all interstices between lath boards. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3d) ON METAL LATH—Apply in two (2) coats, scratch and brown. Scratch coat shall be applied lightly covering the lath and filling meshes. Scratch first coat and allow to set before applying brown coat. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3e) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Soak brick or tile wall thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats, scratch and brown, and fill out to grounds. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E4) APPLICATION • Wood Fiber Plaster

NOTE—*Neat Wood Fiber Plaster may be troweled down to a smooth finish omitting further finish coat.*

(E4a) ON WOOD LATH—Soak lath. Apply in two (2) coats. Apply scratch coat with sufficient pressure to obtain a good key and scratch the surface. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4b) ON GYPSUM LATH AND FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats. Scratch coat shall be well scratched in to fill interstices between lath units. Scratch first coat and allow to set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4c) ON METAL LATH—Apply in two (2) coats. Scratch coat shall be applied a little stiff, covering lath and filling meshes. Scratch coat must be set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4d) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Except over dampproof paint.] [Soak brick or tile walls thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E5) APPLICATION • Bondcrete for Concrete

NOTE—*See paragraph (A12), page 22.*

NOTE—*Bondcrete may be troweled down to a smooth finish omitting further finish coat. If desired, so specify.*

(E5a) Apply in two (2) coats in just sufficient thickness to obtain an even surface (not to exceed ⅜ inch on ceilings and ½ inch on side walls). Before the plaster begins to set, broom the surface to receive the finish coat.

NOTE—*Use for all large areas of concrete.*

(F) PLASTERING • FINISH COATS

(F1) MATERIALS and MIXING

NOTE—*Select type best adapted.*

(F1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each gauging. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in gauging water.

Do not mix more material than can be applied in one (1) hour nor one gauging with another. Never retemper plaster after it has commenced to set.

All material except sand for job sanded sand float finish shall be as manufactured by the United States Gypsum Company.

(F1b) WATER—Water shall be clean, free from alkali and impurities.

(F1c) SAND—Sand shall be clean, sharp and free from organic matter with *grains graded from fine to coarse, meeting* the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(F1d) [Specify brand] PREPARED GYPSUM FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe plaster into water (using approximately one (1) part of water to two (2) parts of plaster measured by volume). Allow the material to soak and draw in the water without hoeing for at least 20 minutes. When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Bring the mix finally to a very thin consistency. Transport in buckets

(F1e) [Specify brand] FINISHING LIME and [Specify brand] GAUGING PLASTER—

NOTE—*See pages 4 and 5.*

(F1e1) ***(Preparing Hydrated Lime Putty)*** Fill water-tight box one-half to two-thirds full of clean water.

Add dry lime gradually, sifting through a ¼-in. mesh screen, until all water is dried up.

Allow lime to soak overnight to develop full plasticity

Do not hoe or screen after soaking unless lime is dirty or lumpy.

(F1e2) ***(Preparing Quicklime Putty)*** Add water and lime gradually while mixing, constantly agitating the mixture to prevent burning of the unslaked portion. Mix to a thin consistency and screen. Run into ageing box.

(F1e3) Mix by measure one (1) part of dry gauging plaster with three (3) parts of lime putty, as follows:

For each 12-quart bucket (approximately 37 lb.) of lime putty, add 2 quarts of water in the ring on the board. Sift in enough dry gauging plaster to absorb the water; then blend plaster and lime putty together thoroughly.

NOTE—*The above proportions are equal to 1 part of dry gauging plaster to 2 parts of dry lime hydrate by weight.*

(F1f) [Specify brand] PREPARED GYPSUM SAND FLOAT FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe finish into water.

Allow the material to soak and draw in the water without hoeing for at least 10 minutes.

When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Transport in buckets.

(F1g) [Specify brand] SAND FLOAT FINISH (JOB SANDED)—

NOTE—*See page 3.*

Screen sand through a No. 12 screen. Mix dry to a uniform color one (1) part of Cement Plaster to one (1) part of dry sand by weight (equal to from 4 to 6 shovels of sand to each 100-lb. bag). Put dry mix in upper end of box and water in lower end.

Hoe material into water and mix thoroughly to a smooth, creamy consistency. Keep tools and box clean.

(F1h) ORIENTAL INTERIOR (COLORED FLOAT OR TEXTURE FINISH)—

NOTE—*See page 4.*

(F1h1) Color **[s]** shall be **[specify] [as subsequently determined upon].**

(F1h2) Put the Oriental Interior in upper end of box and water in lower end. Hoe material into water, using approximately one (1) part of water to two (2) parts of Oriental Interior, by volume.

Let Oriental Interior soak overnight. After soaking, mix thoroughly and carefully hoe the mix to a smooth, creamy consistency. Transport in buckets.

(F1i) RED TOP KEENE'S CEMENT—

NOTE—*See page 5.*

***NOTE**—For preparation of lime putty, see (F1e).*

(F111) [Box Mixed for Extremely Hard Trowel Finish]—Use Standard Keene's Cement neat. Add water only. Mix thoroughly and bring to a working consistency. Transport in buckets.

(F112) [Box Mixed for Hard Trowel Finish]—Use 25 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F113) [Box Mixed for Medium Hard Trowel Finish]—Use 80 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F114) [Board Mixed Quick Troweling Keene's]—Use not more than 60 lb. of lime putty to 100 lb. of Quick Troweling Keene's Cement. Place 2 ten-quart pails of lime putty in a ring on the board; add 4½ to 5 gallons of water; sift in 100 lb. of Quick Troweling Keene's Cement; allow to soak 15 minutes; blend plaster and putty together thoroughly. To assist in application over an extremely dry base, fine marble or white silica sand may be added in the proportion of 20 lb. to 100 lb. of Keene's Cement.

(F115) [Sand Float Finish]—Mix lime putty, clean sand, and Standard Keene's Cement in the proportions of 100 lb. of lime putty, 400 lb. of sand and 100 lb. of Keene's Cement. **(Add USG Limeproof Colors as subsequently selected.)**

(F2) APPLICATION OF FINISH COAT • GENERAL

Keep plaster from freezing for 24 hours after application.

Do not apply finish coat on a base coat which contains frost.

In hot, dry weather screen all openings while plastering to prevent material drying out before it has set. If plaster should dry out (showing soft, white spots) sprinkle portions so affected with clean water with a spray pump or brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

Angles and corners shall be left straight, true and plumb

(F3) APPLICATION • Trowel Finish

(F3a) LOCATION—The following shall receive trowel finish:

***NOTE**—List and locate either in schedules on plans or here.*

(F3b) LIME AND GAUGING PLASTER—Apply in two (2) coats over a fairly dry gypsum plaster base. Scratch in a thin coat, then go over a second time filling imperfections and cat faces. Trowel to a smooth finish applying water with a damp brush. Troweling should be completed before the finish has set. In cold damp weather, provide heat and ventilation until the finish is dry.

(F3c) PREPARED GYPSUM FINISH—Base coat must be dry and roughened before finish is applied. If suction is too great, sprinkle lightly with clean water from a clean brush.

Apply in three (3) coats. The first time over, put on sufficient material to cover the surface completely, using material as thin as possible and grinding it thoroughly into the base coat. Allow this to draw a few moments to avoid blistering.

The second time over, lay the material on perfectly level.

The third time make the material as thin as can be handled on the hawk and fill in cat faces and imperfections. After it has drawn a few moments, trowel to a smooth surface, applying water with a damp brush. Do not drench with water (drenching will kill the face of the material). Work top and bottom of the wall at the same time to avoid joinings.

(F4) APPLICATION • Sand Float Finish

(F4a) LOCATION—The following shall receive sand float finish.

***NOTE**—List and locate either in schedules on plans or here.*

(F4b) PREPARED SAND FLOAT FINISH OR CEMENT PLASTER SANDED—Apply sand float finish after base coat has set firm and hard, but while still green.

"Grind in" a thin coat first; then "come back" with the final coat, laying it on in an even surface. Then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

***NOTE**—Cork float preferred.*

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work after the material begins to or has set.

Work top and bottom of the wall at the same time to avoid joinings.

(F5) APPLICATION • Oriental Interior (Colored Finish Coat)

(F5a) LOCATION—The following shall receive Oriental Interior Finish:

***NOTE**—List and locate either in schedules on plans or here.*

(F5b) GENERAL—Brown coat should be broomed or left rough under darby to insure a good bond. Remove all loose or projecting particles from base coat which may show through finish coat.

Apply over a gypsum plaster base which has set firm and hard. On all types of masonry construction, such as gypsum tile,

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clay tile, etc., the plaster base must be thoroughly dry. On lathing bases, such as gypsum, fiber insulating, wood, or metal lath, Oriental Interior may be applied after the plaster base is 90% dry. If the suction in the base coat is too great to permit ease of application, wet down lightly and uniformly with clean water.

To avoid cutting re-entrant angles, use a trowel with edges rounded to a curve the circumference of a dime.

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work material after it begins to or has set.

Work top and bottom of wall at same time to avoid joinings.

Proper drying conditions must be maintained in order to protect the color. During the late fall, winter and early spring months, the slow-drying periods of the year, artificial heat and proper ventilation must be arranged for. Failure to provide this protection may result in color difficulties.

(F5c) FLOAT FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level and then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

(F5d) TEXTURE FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level, working it into the desired texture.

NOTE—*The* United States Gypsum Company *will furnish on application a Special Bulletin covering the execution of textured finishes.*

(F5e) TILE OR MASONRY EFFECTS—Mark off with a straight-edge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6) APPLICATION • Keene's Cement Finish

(F6a) LOCATION—The following shall receive Keene's Cement Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F6b) GENERAL—TROWEL FINISH—Apply in two (2) coats over a dry gypsum plaster base. Scratch in a thin coat well ground into the base; then apply a second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

(F6c) PANELS—Keene's Cement wainscots shall be divided into even vertical panels with V-joints while the material is "green"—preferably from 4 to 5 hours after application. First rake out plaster base at joints for a depth of ¼ and ½ in. wide, laid to a straight-edge, plumb and true—clean of loose particles. Apply Keene's Cement as above and form clean cut, even vertical V-joints at panel divisions.

(F6d) TILE EFFECTS—Mark off with a straightedge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6e) POLISHED SURFACES—After the cement is dry, polish with a cloth to a highly polished surface.

(F6f) SAND FINISH—Apply in two (2) coats over a fairly dry gypsum plaster base, scratching in a thin coat and doubling back with the second coat. Finish to desired texture, using water sparingly.

(G) ORNAMENTAL PLASTER WORK

(G1) LOCATION

The following rooms require ornamental plaster in accordance with details.

NOTE—*List and locate either in schedules on plans or here.*

(G2) MODELS

(G2a) All ornamental work shall be executed from models.

(G2b) Models shall be furnished at the contractor's expense for all ornamental work. These shall be made by a skilled modeler **[selected] [approved]** by the architect, preferably in **[name place]** so that they may be under the direct supervision of the architect while being prepared. Models must be submitted for approval while in the clay.

(G2c) The contractor shall allow the sum of **[specify]** to cover the cost of models prepared under the direction of the architect, delivered f.o.b. cars **[specify]**.

(G2d) The owner will furnish, without cost to the contractor, models prepared under the direction of the architect, delivered f.o.b. cars **[specify]**.

(G3) MATERIALS and MIXING

NOTE—*See page 6.*

(G3a) [For Run Work] [specify brand] GAUGING PLASTER.

Add 50% lime putty to the gauging plaster to give the added plasticity required for run work. Mix thoroughly and bring to a working consistency.

(G3b) [For Cast Work] [specify brand] MOULDING PLASTER.

Add water only; mix thoroughly and bring to the proper pouring consistency.

NOTE—*See also Keene's Casting, page 5.*

(G4) APPLICATION • GENERAL

(G4a) All curved work shall be **[run] [or] [cast]** to true radial lines.

(G4b) Leave all ornamental plaster work in perfect condition for decorating, true and smooth, with surfaces and intersections rubbed down with fine sandpaper, if necessary.

(G5) RUN WORK

Furnish clean cut, accurate templates made in strict accordance with the architect's **[full size]** details.

Run all mouldings true with perfect arrises and miters.

(G6) CAST WORK

Ornamental work shall be cast hollow or solid as best suited to conditions, thoroughly strengthened with fiber and braced where necessary.

All cast work shall be set accurately—true, plumb and straight.

If necessary, members shall be substantially fastened around furring; where nails are used, they shall be galvanized.

SECTION B · WALLBOARDS

SHEETROCK • THE FIREPROOF WALLBOARD

DECRIPTION—Sheetrock is a fireproof wallboard made of gypsum and designed for nailing over the wood framework of a building to form the finish for interior walls and ceilings. It has a joint treatment that has given a new character to wallboard construction and enables the decorator to cover all nail heads and finish all joints to make a smooth, even surface over the entire wall and ceiling area. Sheetrock supplies a surface over which any type of decoration can be applied.

ADVANTAGES—Sheetrock will not burn or transmit high temperatures. It has proved its efficiency in saving property and life in hundreds of instances during the past two decades.

Atmospheric changes will not expand or contract Sheetrock. It will not warp or buckle. The joints between boards remain tight and when properly finished stay that way.

Sheetrock contains nothing that will disintegrate, rot or decay. Sheetrock walls and ceilings are as enduring as the building itself.

Sheetrock can be identified by the special Zip-Cord package which contains two boards and is clearly marked with the word "Sheetrock" along the edges of the package.

RECESSED-EDGE SHEETROCK.*—The long edges of Recessed-Edge Sheetrock are depressed on the face side of the board. These recessed edges form a shallow channel at the joint when erected. Into this channel a special cement is applied in which is embedded Perf-A-Tape* and the joint is then smoothed off flush with the surface of the board. The result is a complete concealment of the joint—a joint that is as strong as the board itself. Recessed-Edge Sheetrock is available in three-eighths and one-half inch thickness.

The Perf-A-Tape Joint System has been designed and patented for exclusive use with Recessed-Edge Sheetrock. This system permanently solves the problem of hiding and reinforcing wallboard joints. It consists of a specially fabricated, beveled and perforated fibre strip two and three-sixteenths inches wide, and a special cement. The standard package contains a 250-foot roll of Perf-A-Tape and a bag of cement sufficient to treat the joints on 500 to 650 square feet of Sheetrock surface. It is also available in "100" and "25" foot packages for smaller jobs. Complete instructions for applying are contained in each package.

OTHER SHEETROCK JOINT TREATMENTS—The Metal "A" Joint System is similar to the Perf-A-Tape System except that a wafer-thin metal tape, one and seven-eighths inches wide is used. The Sheetrock Reinforced Joint System substitutes a two inch open mesh tape of specially woven and processed fabric. Sheetrock Finisher is a joint cement used without reinforcing.

SQUARE EDGE SHEETROCK—This type is available in one-quarter, three-eighths and one-half inch thickness. The boards are uniform in thickness with true square edges, assuring tight and close fitting joints.

WOOD GRAINED SHEETROCK—This is Sheetrock which has been mill finished with an accurate photographic reproduction in color and grain to be found in selected panels of Knotty Pine, Walnut, Matched Walnut or Douglas Fir. It is then finished with two coats of transparent lacquer. The reproduction is so true that it cannot be distinguished from actual wood at a distance of a few inches.

Like other types of Sheetrock, this material can be handled and applied as easily as wood. Nail heads are concealed with plastic wood, stick shellac or linseed oil putty mixed with stain to match the surface. The joints are left unfinished or can be covered with specially decorated panel strips.

Wood Grained Sheetrock gives all the richness of expensive wood finishes, plus the fireproof, enduring qualities of Sheetrock at a much lower cost.

SHEETROCK TILE BOARD—This has tile-like impressions, four and one-half by four and one-half inches in size indented in the face of the board. When finished with lacquer or enamel, the surface closely resembles the best ceramic tile. Sheetrock Tile Board makes possible the obtaining of beautiful tile effects easily and quickly at lost cost.

INSULATING SHEETROCK—A thin, smooth sheet of bright aluminum foil is applied to the back of any of the above varieties of Sheetrock, except the quarter inch thickness. When applied with the foil side next to the frame and facing a dead air space, Insulating Sheetrock has an insulating efficiency equal to one-half inch of fibre insulating board.

Approximately seventy-five per cent of the heat passing into or out of a building is radiated heat. Laboratory tests prove that a bright metal foil such as used on Insulating Sheetrock will effectively reflect radiant heat and refuse to emit heat by radiation.

Aluminum foil is also one of the most effective vapor barriers known. Because of this, Insulating Sheetrock helps solve wall and ceiling condensation problems.

SIZES OF SHEETROCK

Type	Thickness	Width	Lengths
Recessed-Edge..	3/8, 1/2 in.	32, 48 in.	4, 5, 6, 7, 8, 9, 10, 11, and 12 ft.
Square Edge....	1/4, 3/8, 1/2 in.	32, 48 in.	4, 5, 6, 7, 8, 9, 10, 11 and 12 ft.
Wood Grained.	3/8 in.	48 in.	6, 7, 8, 9 and 10 ft
Matched Walnut.	3/8 in	48 in	8 and 9 ft
Tile Board.....	3/8 in.	48 in.	6, 7, 8, 9 and 10 ft
Insulating.....	1/4, 3/8, 1/2 in.	48 in.	4, 5, 6, 7, 8, 9, 10, 11, and 12 ft.

*Trade-Marks

BB024 1080

APPLICATION OF SHEETROCK

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Words or clauses within brackets in bold face type are selective. Select and include only those clauses which apply to the particular work.*

NOTE—*Perf-A-Tape Joint System must be specified if Sheetrock is applied at right angles to framing members to give the necessary strength needed in the absence of headers.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sheetrock.*

(2) FRAMING

(2a) All framing members shall be spaced accurately 16 in. on centers and shall be set straight and true. Bowed or warped framing members shall be replaced or straightened.

(2b) Headers (2 in. x 4 in.) shall be provided wherever necessary so that all four Sheetrock edges can be solidly nailed (see note below).

NOTE—***If Perf-A-Tape Reinforced Joint System is used,*** *⅜ in. or ½ in. Recessed Edge Sheetrock may be applied horizontally (long Sheetrock edges at right angles to framing members). If horizontal application is specified, paragraph (2b) specifying headers can be eliminated.*

Quarter Inch Sheetrock should always be applied vertically (long edges parallel to framing members) and headers should always be provided for as under paragraph (2b) above.

(3) MATERIALS

(3a) **WALLBOARD**—Sheetrock as manufactured by the United States Gypsum Company shall be **(¼ in. thick) (⅜ in. thick—Recessed Edge) (½ in. thick—Recessed Edge)** bundled. Lengths shall be full height from floor to ceiling on walls and shall be such as will make possible a minimum number of end joints on ceiling.

NOTE—*If Perf-A-Tape Joint System is specified with ¾ in. or ½ in. Recessed Edge Sheetrock, the Sheetrock may be applied horizontally as explained under "NOTE" above. If so specified, change (3a) to read "Lengths shall be such as will make possible a minimum number of end joints on both walls and ceilings."*

(3b) **NAILS**—Nails shall be **(4d for ¼ in. and ⅜ in. thick Sheetrock) (5d for ½ in. thick Sheetrock)** flat headed cement coated nails.

(3c) JOINT TREATMENT

(3c1) Perf-A-Tape Joint System (For use exclusively with Sheetrock).

(3c2) Metal A Joint System (For use exclusively with Sheetrock).

(3c3) Sheetrock Finisher (Cement only—no reinforcing tape).

(4) PREPARATION OF SHEETROCK

(4a) **PILING**—Sheetrock bundles shall be piled flat on the floor in center of room after doors and windows are in place on sa. Edges shall be protected.

(4b) **HANDLING**—Sheetrock shall always be handled in a vertical position on its long edge.

(4c) **CUTTING OR SAWING**—To cut the board the face paper shall be scored with a knife or chisel and the board snapped in two over a straight-edge or the board shall be sawed through with a sharp hand saw with face or board up.

Before nailing board in place all cut edges and mill cut ends shall be beveled on the face side with coarse sandpaper removing any loose ragged paper at same time.

(5) APPLYING SHEETROCK

(5a) **GENERAL**—All ends and edges shall be perfect. All exposed ends shall be face beveled. All board shall butt snugly along the covered edges and shall be left open ⅛ in. at all abutting cut ends. Edges or ends shall not be forced together. All joints shall be broken—that is, stagger boards so that the corners of any four boards do not meet at one point. On opposite sides of partitions, perpendicular joints shall not occur on the same stud.

(5a1) Quarter Inch Sheetrock shall be applied with the length parallel with framing members.

(5a2) **(⅜ in.) (½ in.)** Recessed Edge Sheetrock shall be applied **(parallel with) (at right angles to)** framing members.

(5b) **CEILINGS AND WALLS**—Ceilings shall be erected first. Walls shall be erected so that boards fit snugly against ceiling boards and first board shall be squared with adjacent wall.

(5c) **NAILING**—Nails shall be driven "home," straight in, with heads slightly below surface without using nail set. Boards shall be nailed first at edge adjoining board last applied; then on first intermediate framing member; then on second intermediate framing member and finally remaining side and ends. Nails shall not be staggered on adjoining edges.

NOTE—*For spacing nails use clause (5c1) below when Sheetrock is applied parallel to framing members and clause (5c2) when applied at right angles to framing members.*

(5c1) On intermediate supports nails shall be spaced 8 in. apart on ceilings and 9 in. apart on walls. At all edges and ends nails shall be spaced 3 in. apart ⅜ in. from the edge.

(5c2) All nails shall be spaced 4 in. apart on all framing members.

(6) APPLYING JOINT TREATMENTS

(Perf-A-Tape Joint System) (Metal A Joint System) shall be applied and all intermediate nail heads spotted according to United States Gypsum Company's specifications which are included in every box of joint system.

United States U.S. Gypsum Company

GYPLAP • FIREPROOF SHEATHING

DESCRIPTION—Gyplap is gypsum board designed for sheathing of wood frame structures. It may be used under shingles, stucco or brick veneer. The 2 x 8 foot boards, ½-in. in thickness, add bracing strength to the structure and are easily and quickly applied.

ADVANTAGES—Gyplap will not burn or readily transmit high temperatures. It provides a fireproof covering for the entire frame.

The surfaces and ends of each Gyplap unit are waterproofed to resist moisture. No building paper is required over Gyplap.

The long edges of the Gyplap boards are tongued and grooved and when applied form wind and weather-tight joints.

Gyplap will not expand or contract with temperature changes and maintains a tight covering over the entire exterior of the structure.

The size of Gyplap makes it convenient and economical to handle and erect. It cuts and nails as easily as lumber. As each unit spans across seven studs spaced 16 inches on centers, Gyplap goes up surprisingly fast.

STRENGTH AND RIGIDITY—Strength tests of Gyplap applied horizontally and wood sheathing applied both horizontally and diagonally, conducted by Columbia University in New York City and by Armour Institute of Technology in Chicago prove the greater bracing strength and rigidity of Gyplap.

Master Specifications

GYPLAP—FIREPROOF SHEATHING

NOTE—*Siding, stucco and brick veneer may be applied over Gyplap or Insulating Gyplap in the usual manner.*

(1) SHEATHING

Sheathing shall be **[Gyplap] [Insulating Gyplap]** as made by the United States Gypsum Company, ½ in. thick, 24 in. wide, 6 ft. 8 in. or 8 ft. long. Nails for application shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails.

(2) APPLICATION

Apply **[Gyplap] [Insulating Gyplap]** with groove side down and **[trade-mark] [aluminum foil]** side in, directly to framework with length at right angle to supports.

Butt the ends tightly over a support and interlock the side edges. Stagger vertical joints.

Fit tightly around all openings.

Fasten securely with nails spaced 4 in. apart on each bearing, set ⅜ in. from end edges.

Do not cover Gyplap with building paper.

(3) SIDING

Apply siding at right angles to studding directly over Gyplap. Nail only to studs with nails sufficiently long to pass through the Gyplap.

(4) STUCCO

Apply 3.4 lb. Red Top Self-Furring Diamond Mesh Lath **[Galvanized] [Copper Bearing Steel, Painted] [Pure Iron, Painted]** at right angles to the studs. Lap lath ½ inch on sides and 1 inch on ends. Carry metal around all corners to first support. Secure with 6d galvanized nails approximately 6 inches apart on centers driven through the Gyplap into the studs. Drive nails well in and bend to engage at least two lath strands. Thoroughly secure metal at all openings.

NOTE—*Follow standard specification for the application of exterior stucco.*

(5) SHINGLING

Over the Gyplap apply, secured through the Gyplap to each bearing, 1 x 2-in. furring strips to take shingle weathering specified.

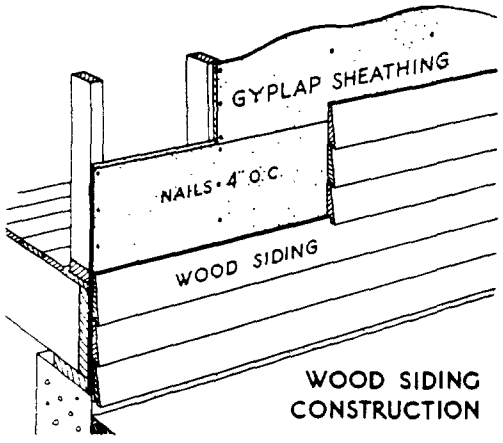




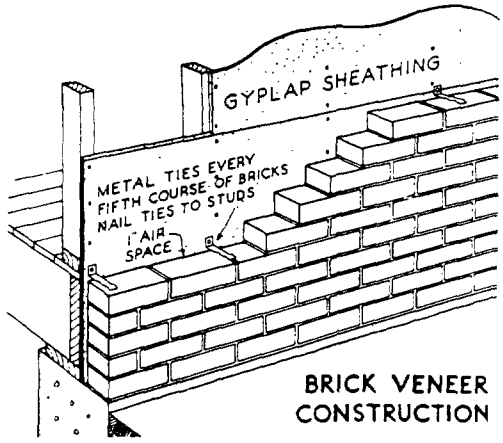
*Trade-Mark

BB024 1082

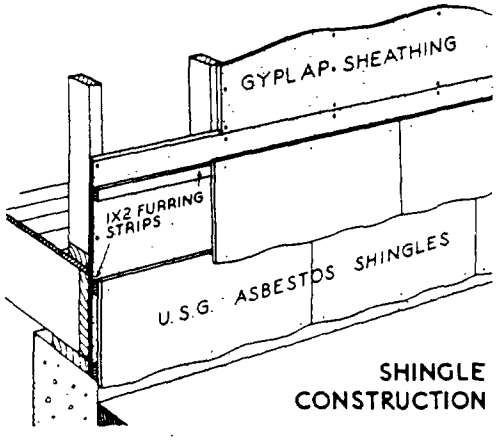
GYPLAP FIREPROOF SHEATHING CONSTRUCTION DETAILS



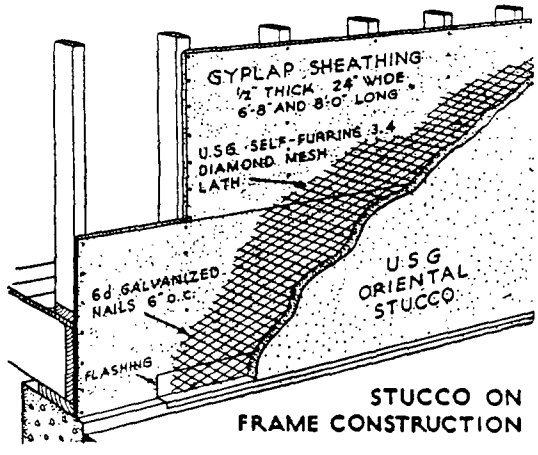
WOOD SIDING CONSTRUCTION



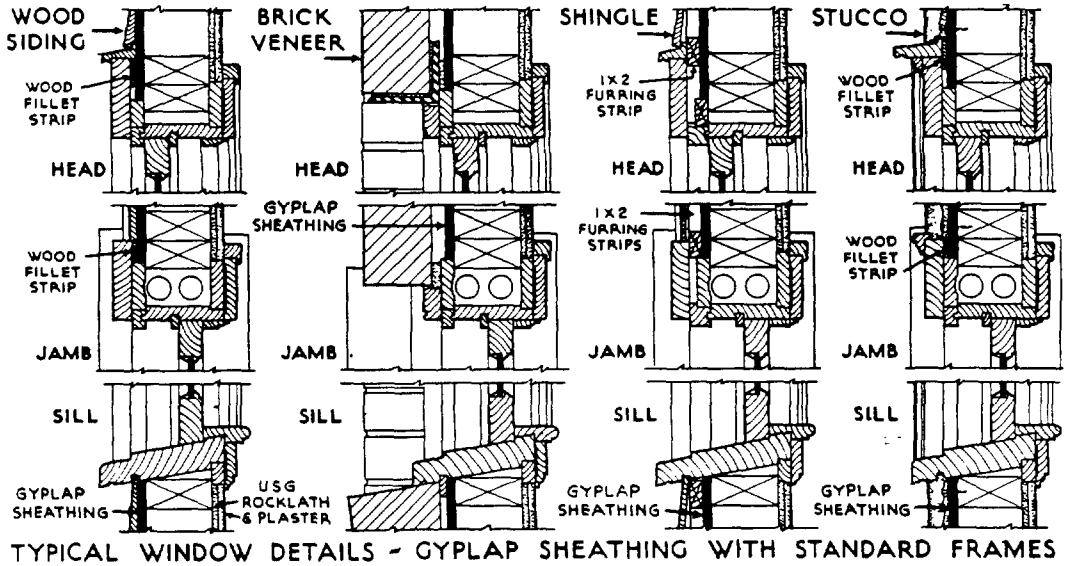
BRICK VENEER CONSTRUCTION



SHINGLE CONSTRUCTION



STUCCO ON FRAME CONSTRUCTION



TYPICAL WINDOW DETAILS - GYPLAP SHEATHING WITH STANDARD FRAMES

SECT. C · THERMAL INSULATION

USG THERMAL INSULATION PRODUCTS—The United States Gypsum Company manufactures all varieties of thermal insulation for buildings: Structural; Blanket; Fill; and Reflective. Weatherwood Insulating Plaster Base and Insulating Rocklath are described in Section A with lathing and plastering materials.

RED TOP INSULATING WOOL
Blanket and Fill Types

RED TOP INSULATING WOOL is not a by-product but a manufactured material, in which the ingredients are assembled according to a definite formula. The whole is fused and drawn into uniform filaments, which are felted into continuous bats by automatic machinery differing from all other mineral wools in this regard. Extremely light in weight, it has little capacity to hold heat. Long, springy fibers fill the wall and ceiling spaces without packing—stay put—do not shake down or compact. Red Top Wools are free from foreign materials, glass beads, shot, and dust, which do not insulate.

RED TOP INSULATING WOOL BLANKETS—The lightweight insulating fibers are bound together with a synthetic resin binder specially devised for the purpose and then are completely enclosed to provide an installation unit which handles easily and cleanly, reducing installation costs. The enclosing envelope is so constructed that an effective vapor barrier is provided for the inner face of the blanket, while a completely vapor permeable membrane is used on the outer face, thus controlling condensation in full accordance with the accepted theory. The blankets have an ingenious flange so designed that it produces a one-half-inch air space on the inner face under the plaster and provides a close fitting relatively vaporproof joint at the stud. The flanges are tacked directly to the face of the studding or soffits of the floor joists, either by hand or with a mechanical tacker. Except in the "thick" blanket, air spaces are provided at both faces of the blanket.

HEAT INSULATION VALUE—The heat conductivity of Red Top Insulating Wool is .266 B.t.u. per inch thickness, per sq. ft. per hour, per degree Fahrenheit difference in temperature (test by Armour Institute of Technology).

ADDITIONAL FEATURES—These sanitary blankets made from clean, new ingredients are dust free. Inorganic, they will not burn, nor do they supply any fuel in a fire. Structurally resilient and rugged, they will not sag nor disintegrate. Efficient insulation is provided permanently under all conditions of use.

SIZES—Three thicknesses—"One Inch," "Medium," and "Thick." The thick will fill 2 x 4 wood stud spaces except for the ½-in. air space on the inner face. Each manufactured in long rolls for framing 16 in. c. to c. and in bats 36 in. long, for both 16 and 24-in. c. to c. framing.

JUNIOR BATS—Full thick bats, 11 x 15 in. in size. A proper vapor barrier should be applied to the face of the studs or joists if condensation is a factor.

NODULATED—Red Top Nodulated Insulating Wool is available for pouring into open spaces to thicknesses specified by the architect.

GRANULATED—Red Top Granulated Wool has been developed for the "blown-in" method of insulation, usually utilized in existing buildings.



Installing Red Top Blanket



Applying Vapor Barrier Over Junior Bats



Installing Red Top Bats

BB024 1084

United States USG Gypsum Company

WEATHERWOOD INSULATION
Structural Board Types

WEATHERWOOD INSULATING BOARD is an efficient, insulating building board produced by felting new wood fibers. It is not laminated but homogeneous and essentially strong and rugged.

HIGH INSULATION VALUE—The average thermal conductivity established after many tests is .33 B.t.u. per hour per square foot, per one inch thickness, per degree F.

ABSORPTION AND MOISTURE RESISTANCE—Tests show that this board after being immersed in water for a period of two hours has an average water absorption of less than 15 per cent. Specially processed during manufacture to produce this result, it likewise absorbs less paint than similar products.

STRENGTH—Its tensile strength is over 300 lbs. per sq. in., and its modulus of rupture over 500 lbs. Since the board is homogeneous, it will not split. Used for roof insulation on flat roofs, it is firm and amply rigid to prevent cutting and tearing of the roof covering under any normal usage.

COSTS—Quantity production (two large mills) and national distribution assure competitive prices on a superior product throughout the nation. The lightweight, large units are easily and economically installed.

ASPHALT COATED SHEATHING—A rugged insulating sheathing board protected against the elements with a full coating on all faces and edges of high melting point asphalt.

Sizes—Two types—tongued and grooved on the long edges, $\frac{13}{16}$ in. thick by 2 ft. by 8 ft., and a square edged type of the same thickness, 4 ft. wide and in lengths of 6, 7, 8, 8½, 9, 9½, 10, and 12 ft.

The tongued and grooved asphalt coated sheathing is applied across the studding, tying together seven studs instead of the normal four. The studs are always in full view of the carpenters when the board is being applied and there need be no splitting of the studs because of "blind" nailing. Poorly centered studding causes no difficulty. Since the board is fitted by making horizontal cuts, no headers are needed to utilize short pieces.

Advantages—A waterproof product that protects against wind infiltration and provides a high degree of insulation for year around comfort.

BUILDING BOARD—Weatherwood Building Board is made in two standard thicknesses, ½ in. and 1 in. On special order, it may be obtained 1½ or 2 in. thick. All thicknesses over ½ in. are waterproof glue laminated made up of multiple layers of the standard ½-in. board. The boards are 4 ft. wide by 4, 5, 6, 7, 8, 9, 10, and 12 ft. long with square edges. The back of the board has a uniform "screen" texture. The face is a smooth "skin" surface. The standard color is an attractive ivory.

ROOF INSULATION—Used over wood and incombustible roof decks under built-up roofing. It is made in four (4) thicknesses—½, 1, 1½ and 2 in., water-resistant glue laminated, 22 in. wide by 47 in. long. It can also be furnished stapled with offset edges when over ½ in. thick.

NOTE: All Weatherwood Boards, except those used for interior decoration, may be obtained termite and fungi proofed when so specified.

WEATHERWOOD DECORATIVE PRODUCTS

Weatherwood Board is also manufactured in "tile" and "plank" form with appropriate mouldings for renovation, remodeling, and acoustical treatment, purposes for which it is well adapted. Illustrated catalogues showing the many ways in which the pleasing variations in color, texture, and form can be utilized are available from any USG office or representative.



Cutting T & G Sheathing for Opening



Applying Reinforced Plaster Base



Weatherwood Blendtex

BB024 1084

BB024 1085

United States USG Gypsum Company

WEATHERWOOD HARDBOARD

DESCRIPTION—Weatherwood* Hardboard is a compressed wood fiber product, extremely dense, hard, tough, and rigid. It has two smooth finished surfaces: one a mottled brown color, the other a mottled gray. Both present a very pleasing appearance. Weatherwood Hardboard is easy to paint, enamel, stain, varnish, etc., and can be sawed into any shape desired and nailed. Smooth, clean holes can be drilled in it.

Weatherwood Structoboard* is similar to the Hardboard, but as it is not compressed as much, it is not quite as dense and hard.

SIZES—Weatherwood Hardboard is ⅛ in. thick.

Boards are furnished in the following sizes:

2x4 ft., 3x4 ft., 4x4 ft., 4x6 ft., 4x8 ft., 4x9 ft., 4x10 ft., and 4x12 ft.

Weatherwood Structoboard is furnished in ¼ in. thickness and in the same sizes as the ⅛ in. Hardboard.

USES—Both Weatherwood Hardboard and Structoboard are excellent in cabinet work for cupboard backs, drawer bottoms, etc., and as decorative overlays over insulating board walls and ceilings; and for wainscots, paneling, booths, and partitions.

They have many uses in both the commercial and industrial fields and are used extensively in furniture and toy businesses. They are an excellent material for signs, mountings, and for general display purposes. In the industrial field they have extensive uses, such as patterns, templets, drying racks, etc.

Another important use is in the permanent display field. Some of the finest displays in use today in shops, department stores, and traveling displays on truck and train are built of Weatherwood Hardboard.

ADVANTAGES—Weatherwood Hardboard and Structoboard are truly all-purpose products. They are strong and durable, yet light in weight and easily handled. Their hard surfaces resist the extremes in abrasion. They have extremely low moisture absorption.

FIBER WALLBOARD

DESCRIPTION—Tiger Fiber* and Red Top* Wallboards are unsurpassed in quality by any other fiber wallboard. They are uniform, tough, unusually strong for this type of board, and because of their lightness are easy to handle and apply.

The face side of Red Top Fiber Wallboard is either smooth or embossed, giving excellent surface for decoration. The back surface is smooth.

SIZES—Tiger Fiber Wallboard, approximately 3/16 in. thick, 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16 ft. Packed same as Red Top Fiber Board.

Red Top Fiber Wallboard, Standard Thickness full 3/16 in., 4-ply, and 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16-ft. Packed ten boards to the bundle.

Red Top Fiber Board. "Extra Thick" ¼ in., 5-ply, 48-in. wide, lengths 6, 7, 8, 9, 10, 12, 14 and 16-ft. Packed eight boards to the bundle.

ADVANTAGES—These wallboards are very carefully made of laminated layers of selected wood fibers, which interlace, forming a board that is strong and tough. The board is thoroughly kiln dried.

Red Top Fiber Wallboard is of even thickness and uniform size, as a result of which it can be applied with a minimum amount of labor.

By means of a special varnish sizing process the board is made unusually moisture resistant and the surface prepared for economical decorating. A wide range of decorative possibilities is afforded, the board taking the paint smoothly and easily and giving an attractive velvety finish.

The "Extra Thick" ¼ in. board is 5-ply instead of 4-ply and is processed in the same manner as the regular 3/16 in. board. It is recommended where an extra strong board is desired.

USE—Because of the sturdiness, light weight, low cost, and ease of cutting and handling, Tiger and Red Top Fiber Wallboards have many uses. They are ideally suited for theater displays, standing signs, window displays and backgrounds, cartons and crates, posters, dress and stocking forms, and many other commercial uses. They are also suitable for rapid erection of partition, storage bins, temporary walls, lining of garages and similar buildings.

ERECTION AND DECORATING — These wallboards are easily sawed, cut and nailed. For partition or similar work, they should be securely nailed at every stud with joints covered with wood panel strips. The surface, when properly prepared, is suitable for oil paint, flat paint, water paint, air brush (in poster work), and USG Texolite or Textone. The boards should not be wallpapered. Red Top Fiber Wallboard is often left in its pleasing natural ivory color.

*Trade-Mark

BB024 1086

United States U.S. Gypsum Company

THERMOFILL*

The Dry Fill Insulation

DESCRIPTION—Thermofill is a flaky gypsum material which gives a high degree of heat, cold and sound insulation when employed in the walls, ceilings, floors and roofs of residences, apartments and commercial buildings.

The material is light in weight; clean and easy to handle; and is packed in 50-lb. paper sacks.

METHOD OF INSTALLATION—Ease of installation is one of the many desirable features of Thermofill, the Dry Fill Insulation, and a feature that makes the use of the material practical in buildings already built, as well as in new construction.

Thermofill is installed simply by pouring (dry) into the space that is to be insulated. The economy of this application is at once apparent.

In residences already built, or in new residences, a large reduction of heat loss in winter and a more comfortable interior in summer can be secured by pouring Thermofill (dry) between the floor joists in the attic, directly upon the ceilings of the top floor rooms.

Complete details for Thermofill insulation in other locations will be sent upon request.

ADVANTAGES—Thermofill provides an extremely high degree of heat and cold insulation because of the form and composition of the material. Gypsum is an excellent natural insulator, and this quality is increased many fold due to the myriads of confined air cells assured by the fluffy nature of the material and the method of installation. When installed in the walls and between floors and ceilings, Thermofill prevents air circulation and the resulting passage of heat and sound.

Because it is made of gypsum, Thermofill does not burn and it thus provides valuable protection to inflammable wood framework.

Thermofill, because of its mineral nature, cannot decompose and it will not harbor vermin.

Because of its low initial cost and the saving in labor due to simplicity of application, Thermofill offers the builder a most economical as well as a most effective insulator.

THERMAL CONDUCTIVITY OF THERMOFILL

Density per cu. ft., lb.	B.t.u. per sq. ft. per hour per 1° F. per in. thick	Authority
19.8	.35	Bureau of Standards

Conductivity slightly higher when used in walls

EFFICIENCY OF TYPICAL CONSTRUCTION UNINSULATED AND INSULATED

Walls	Uninsulated	Insulated with 3/8-in. Thermofill
Clapboard, paper, sheathing, stud, lath and plaster	0.25	0.093
Brick veneer, paper, sheathing, stud, lath and plaster	0.27	0.096
Stucco, paper, sheathing, stud, lath and plaster	0.30	0.10
Ceilings		
Lath and plaster—no floor	0.62	....
Lath and plaster—single floor	0.28	....
Lath and plaster—no floor—(insulated with 2 in. of Thermofill)	....	0.137
Lath and plaster—no floor—(insulated with 3 in. of Thermofill)	....	0.098
Lath and plaster—no floor—(insulated with 4 in. of Thermofill)	....	0.077

COVERING CAPACITY

Position of use	Per 50-lb. bag		Per ton	
	Sq. ft. 1-in. thick	Cu. ft.	Sq. ft. 1-in. thick	Cu. ft.
Walls	25	2	1000	83
Ceilings and floors	30	2½	1200	100

Packed in 50-lb. paper bags with directions printed on back.



Leveling Thermofill Insulation to a 3-inch Thickness Between Attic Joists

*Trade-Mark

BB024 1087

SECTION D · MISC. USG PRODUCTS

MASON'S LIME

Use

As a mortar for setting brick, stone, etc., and for mixing with Portland cement, concrete, and stucco.

Brands

Mason's Hydrate—
Red Top* Mason's Hydrate (High Calcium and Dolomitic)
Snowdrift* Mason's Hydrate (High Calcium)
Marble Rock Mason's Hydrate (High Calcium)

Mason's Quicklime—
USG* Superfine Mason's Quicklime (High Calcium)
USG Pulverized Mason's Quicklime (Dolomitic)
USG Fine Grain Mason's Quicklime (High Calcium)
USG Pebble Mason's Quicklime (Dolomitic)
USG Crushed Mason's Quicklime (Dolomitic)
Peerless* Pulverized Mason's Quicklime (High Calcium)
Peerless Crushed Mason's Quicklime (High Calcium)
Marble Rock Pulverized Mason's Quicklime (High Calcium)
Marble Rock Pebble Quicklime (High Calcium)
USG Lump Lime (High Calcium and Dolomitic)

Description

The advantages of lime mortar for use in brick, tile, or stone masonry are economy, strength, plasticity, and waterproofing. Either a high calcium or dolomitic lime can be used for masonry.

USG Mason's Hydrated Limes are scientifically slaked by the manufacturer and are ready for mixing and use after soaking.

USG Mason's Quicklimes are thoroughly burned from carefully selected rock and produce a mortar with high plasticity and excellent workability with high sand carrying capacity.

Quicklime must be slaked and aged before using in mortar.

Directions—Hydrated Lime

Hydrating—First pour water into box, then add Hydrated Finishing Lime to the water, distributing it uniformly. The water must cover the lime. Use sufficient water—about 6½ gallons to 50 pounds of hydrate, an amount sufficient for a soft, wet paste.

Soaking—Allow to remain undisturbed for at least 6 hours, preferably over night. Protect from frost and drying up until used. Soaking develops plasticity, and putty should not be allowed to dry after it has reached the correct buttery consistency.

Mixing—Mix putty with sand or with sand and cement, adding sufficient water to bring mix to a hoddable consistency.

Directions—Quicklime

Slaking—Add water and lime gradually while mixing, constantly agitating mixture to prevent burning of unslaked portion. Mix to a thin consistency and screen through a quarter-inch mesh screen.

If dolomitic lime is used, the lime must not be hoed or stirred except to level out any hot, dry areas which do not receive water.

Aging—After screening, run mixture into aging box. Lime must be aged until it is cool and the putty is hoddable. Lime putty produced from quicklime should never be used until aged at least one week, and a longer time is preferable to assure complete slaking.

Mixing—Mix putty with sand or with sand and cement, adding sufficient water to bring mix to a hoddable consistency.

*Registered trade-mark.

Package

Red Top Mason's Hydrate.....50-lb. paper bags
Snowdrift Mason's Hydrate.....40-lb. paper bags
Marble Rock Mason's Hydrate.....50-lb. paper bags
USG Superfine Mason's Quicklime.....80-lb paper bags
USG Pulverized Mason's Quicklime.....50-lb. paper bags
USG Fine Grain Mason's Quicklime.....80-lb. paper bags
USG Pebble Mason's Quicklime..180-lb. net wood barrels or steel drums
USG Crushed Mason's Quicklime..180-lb. net wood barrels or steel drums
Peerless Pulverized Mason's Quicklime..100-lb. paper bags and 180-lb. net wood barrels or steel drums
Peerless Crushed Mason's Quicklime.....180-lb. net wood barrels or steel drums
Marble Rock Pulverized Mason's Quicklime...60-lb. paper bags and 90-lb. steel drums
Marble Rock Pebble Mason's Quicklime..90-lb. paper bags, 90-lb. steel drums and 180-lb. net wood barrels

USG Lump Lime is shipped in bulk.

All above brands may be shipped in bulk.

MORTAR MIXES FOR VARIOUS TYPES OF MASONRY

Masonry Type	Type of Construction	Loading	Mortar Proportions (Volume) Lime: Cement: Sand	Remarks
Common and face clay, shale or sand-lime brick	Dwellings, garages and similar construction	Any condition of loading for such types of construction	1 : 0 . 3	
Clay or shale brick	Walls and piers below grade continuously exposed to wet or damp conditions	Ordinary distributed Heavy concentrated Earthquake tremors	1 : 1 . 6* 1 : 1 : 6* 1 : 1 : 6*	
Common and face clay, shale or sand-lime brick	Exterior walls and piers above grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	2 1 5 Mortar domestic and power plant chimneys
Granite, limestone, marble, sandstone, terra cotta facing and trim	Exterior walls and piers above grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	Use non-staining portland cement and washed sand
Common and face clay, shale or sand-lime brick, concrete brick	Interior walls and piers above and below grade	Ordinary distributed Heavy concentrated Earthquake tremors	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	
Hollow clay tile, concrete block, concrete tile, cinder block	Exterior walls above grade and interior partition walls	Non-bearing partitions, exterior and bearing walls and partitions	2 : 1 : 9* 2 : 1 : 9* 2 : 1 : 9*	

Notes: Materials to conform to current "A.S.T.M. Standard Specifications".

Mortar containing portland cement to be used within one hour after mixing.

*One volume of cement is the maximum quantity which should be used. The sand content is to be varied in accordance with its quality in the particular market involved and its proportion may be reduced if greater mortar strength is desired.

From "Masonry Mortar, Bulletin 321" published by National Lime Association.

BB024 1088

United States Gypsum Company

WINDOWS • COAL DOORS

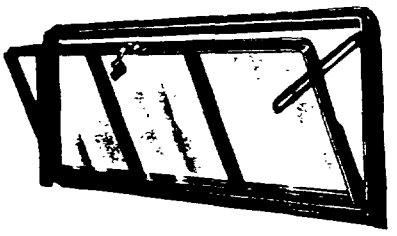
RED TOP STEEL BASEMENT SASH

DESCRIPTION—Red Top Basement Sash are made in five practical sizes (see table below), all easy to install in any type of masonry. They are furnished complete with hardware attached, painted and ready for immediate installation and glazing (glass not furnished). They are available in either top or bottom ventilating types, both opening toward the interior of the room and can be obtained with a puttyless device for quick and easy glazing or in the putty glazing type. The top ventilating sash is provided with automatic support arms which fold completely out of sight when closed. The design of the Ventilator and Frame assures full weather protection. There is nothing to interfere with their easy operating and secure locking features.

CONSTRUCTION—The Red Top Basement Sash is formed from a single piece of solid rolled (not cast) stock to which are welded jamb angles to assure secure, weathertight installations.

Muntin bars are narrow T-sections riveted to ventilator frame. The simple cam action lock holds the ventilator securely and provides positive protection from intruders. Top ventilating sash are furnished with loose pin butts. Bottom ventilating sash are furnished with sturdy hinges consisting of oval shaped steel rods formed into hooks solidly welded into the frame. In both types the sash are easily detached from the frames from inside.

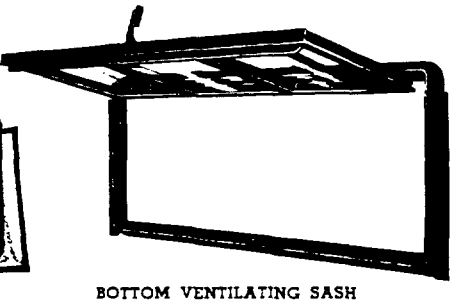
SCREENS—Since all basement windows should be screened during the summer months, the United States Gypsum Co. furnish, at slight added cost, screens to fit Red Top Basement Sash. Screen frames are of metal, finished in black enamel, wired with standard galvanized steel wire screen cloth. They are attached to the steel frames with two brass bolts permitting quick installation and removal.



TOP VENTILATING SASH

SCREENS





BOTTOM VENTILATING SASH

PUTTY GLAZING

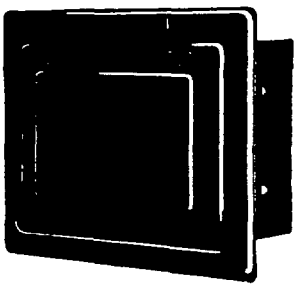
Style		Type	Masonry opening	Weight, lbs.
Bottom ventilating	Top ventilating			
721	721	3 lt. 10x12 in.	32 3/4 x 15 1/4 in.	18
722	722	3 lt. 12x18 in.	38 3/4 x 21 1/4 in.	23
723	723	3 lt. 10x20 in.	32 3/4 x 23 1/4 in.	22
724	724	2 lt. 14x20 in.	30 3/8 x 23 1/4 in.	20
725	725	3 lt. 10x14 in.	32 3/4 x 17 1/4 in.	20

PUTTYLESS GLAZING

Style		Type	Masonry opening	Weight, lbs.
Bottom ventilating	Top ventilating			
731	731	3 lt. 10x12 in.	32 3/4 x 15 1/4 in.	18
732	732	3 lt. 12x18 in.	38 3/4 x 21 1/4 in.	23
733	733	3 lt. 10x20 in.	32 3/4 x 23 1/4 in.	22
734	734	2 lt. 14x20 in.	30 3/8 x 23 1/4 in.	20
735	735	3 lt. 10x14 in.	32 3/4 x 17 1/4 in.	20

RED TOP PRESSED STEEL COAL DOORS

INTRODUCTORY—Steel Coal Doors are now standard equipment in American dwellings. Home owners demand them for the protection of foundation walls and as a guard against intruders. The Red Top Coal Door is weatherproof and meets every practical requirement. Once installed, it will continue to serve as long as the building lasts.



DESCRIPTION—The sturdy, attractive appearance of Red Top Coal Doors reflects careful study and deep appreciation of the builder's needs. Their design, simplicity and trim lines clearly indicate their unusual strength, and lend to the attractiveness of any building. The frames come from the factory painted black and are ready to go into the construction with the least effort. All fittings are attached.

CONSTRUCTION—Red Top Pressed Steel Coal Doors are of enduring construction and are practically indestructible. The frame is made from a single piece of deep drawn steel plate. The same unbreakable material is used throughout the door's construction. The apron is made heavy to withstand the severe impacts of coal delivery.

Hinges are unbreakable and so constructed that they automatically hold the door open *against* the building—*giving* protection to the wall when coal is being put in. The self-closing lock is positive and assures locking when the door is closed.

SIZE—18 x 24 in.; wall thickness, 8 in., masonry opening, 22 1/4 in. wide by 16 1/2 in. high; weight, 35 lbs.

BB024 10889

United States U.S. Gypsum Company

RED TOP EXPANDED METAL

[Econo Mesh*]

Description

Red Top (Econo) Expanded Metal is made by cutting and expanding steel sheets into a fabric of diamond shaped meshes. The meshes vary in size from ¼ x 1 in. to 3 x 8 in.

For Reinforcing Concrete

Red Top Expanded Metal in the larger meshes offers the architect and contractor marked advantages for reinforcing concrete slabs of moderate spans and loads. Some of these are: Ease and rapidity with which the reinforcing can be placed by unskilled workmen; Assurance that the correct steel area is being used as this is determined at the time of manufacture; No tying or spacing of individual units required on the job; Provides a perfect bond with the concrete and distributes the load over a large area; Large convenient sized sheets lay flat when placed in the forms.

Red Top Expanded Metal is extensively used in the construction of reinforced concrete floor and roof slabs of moderate span and load, retaining walls, sea walls, reservoirs, tanks, foundations, concrete vaults, culverts, small bridges, beam wrapping and many other similar uses.

For Open Partitions, Industrial Uses, Etc.

Red Top Expanded Metal with the smaller meshes, is an ideal material for use wherever an open mesh partition or guard is required. It meets the need for these purposes because it is a unit material of great rigidity and permits good visibility.

Red Top Expanded Metal is particularly adapted for the making of Open Partitions, Machine Guards, and Window and Door Guards, because of its moderate cost, efficiency, durability and the ease with which it can be formed and framed. It can be framed with angle iron, U-edging, Red Top Frame Bar, or Red Top Partition Bar.

The qualities which make Red Top Expanded Metal so well adapted for partitions and guards have resulted in its wide use in industry for: Sky-light Guards; Conveyor enclosures; Elevator Shaft and Cage enclosures; Fire Door Guards; Mill Trucks, Trays and Baskets; Open Shelving; Ventilating Fan Enclosures; Refuse Burners; Live Stock Pens; Filter Screens; Truck Body Enclosures; Stairway Enclosures; Etc.

Practically every installation of Red Top Expanded Metal for industrial uses presents a different problem. Our engineering and design department has had long experience in solving such problems.

Write us about your problems and our engineers will be glad to work out a practical solution at no obligation to you. Interesting literature on the many uses of Red Top Expanded Metal is available on request.

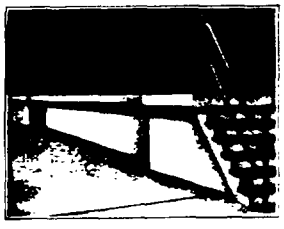
STOCK SIZES AND WEIGHTS OF EXPANDED METAL

Style Numbers	Size of mesh, in.	U. S. std. gauge number	Sq. inch sect. area per foot of width	Approx. Weight lbs. per sq. ft.	Width short way of mesh	Length long way of mesh feet
Meshes for Reinforcing Concrete						
3-13-075	3 x 8	13	075	25	6' 4"	8, 10, 12
3-13- 10	3 x 8	13	10	34	7' 0"	8, 10, 12
3-13-125	3 x 8	13	125	42	5' 8"	8 10 12
3- 9- 15	3 x 8	9	15	51	7' 0"	8, 10, 12
3- 9-175	3 x 8	9	175	60	6' 0"	8, 10, 12
3- 9- 20	3 x 8	9	.20	68	5' 3"	8, 10, 12
3- 9- 25	3 x 8	9	25	.85	4' 2½"	8, 10, 12
3- 9- 30	3 x 8	9	.30	1 02	7' 0"	8, 10, 12
3- 9- 35	3 x 8	9	.35	1.19	6' 0"	8, 10, 12
3- 4- 40	3 x 8	4	40	1 36	4' 7"	8, 12
3- 4- 45	3 x 8	4	45	1 53	4' 1"	8, 12
3- 4- 50	3 x 8	4	50	1 70	7' 4"	8, 12
3- 4- 55	3 x 8	4	55	1 87	6' 8"	8, 12
3- 4- 60	3 x 8	4	60	2 04	6' 1½"	8, 12
2¼-13-10	2¼x6	13	10	34	7' 0"	8, 10, 12
2¼-13-15	2¼x6	13	15	51	4' 8"	8
Special Meshes for Open Partitions, Industrial Uses, etc.						
1½" No. 16	1⅝x1⅛	16		41	4'0"	8
1½" No. 13	1⅝x1⅛	13		65	4'0" and 6'0"	8
1½"-.68 lb.	1⅝x1⅛	12		68	4'0" and 6'0"	8
1½" No. 10	1⅝x1⅛	13		79	4'0" and 6'0"	8
1½" No. 9	1⅝x1⅛	10		1 19	6'0"	8 10, 12
1" No. 16	1x2⅜	16		47	4'0" and 6'0"	8
¾" No. 16	¾x2⅜	16		57	6'6"	8
¾" No. 13	¾x2⅜	13		87	4'0" and 6'0"	8, 10, 12
¾" No. 10	¾x2⅜	13		1 19	4'0"	8
¾" No. 9	¾x2⅜	10		1 90	4'0"	8 10, 12
½" No. 18	½x1⅛	18		.70	4'0" and 6'0"	8
½" No. 16	½x1⅛	16		87	4'0" and 6'0"	8
¼" No. 18	¼x1	18		1 14	4'0"	8

Shelf-X, Flattened Expanded Metal

Except for the fact that it has the advantage of a flat surface, Shelf-X has the strength, rigidity, workability, and economy features of Red Top Expanded Metal. It is widely used for shelving purposes and many other uses requiring a rigid open mesh material. Some Shelf-X uses are: refrigerator shelves, cabinet shelves, stove grilles, ventilating grilles, drying trays, display panels. Can be had in ¼, ½, ¾, 1 and 1½-in. meshes cut from 10, 13, 16, and 18-gauge steel.

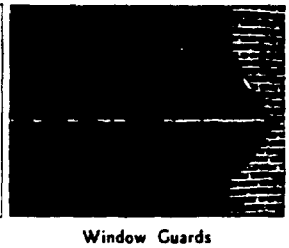
EXPANDED METAL USES



Loading Platforms



Open Partitions



Window Guards

STOCK SIZES AND WEIGHTS OF SHELF-X

Style No.	Approx. Wt. per sq. ft	Size Sheets Width	Size Sheets Length
1½" No. 16	.31	3' or 4'	8'
1½" No. 13	.65	3' or 4'	8'
1½" No. 9	1.19	3' or 4'	8'
1" No. 16	.47	3' or 4'	8'
¾" No. 16	.57	3' or 4'	8'
¾" No. 13	.87	3' or 4'	8'
¾" No. 10	1.80	3' or 4'	8'
½" No. 18	.70	3' or 4'	8'
½" No. 16	.87	3' or 4'	8'
¼" No. 18	1.14	4'	8'

*Registered Trade-Mark

BB024 1090

ASPHALT ROOFING PRODUCTS

USG ASPHALT ROOFING SHINGLES

The whole USG roofing story can be told in one word

FORTIFIED

1. BUILT LIKE A FORTRESS

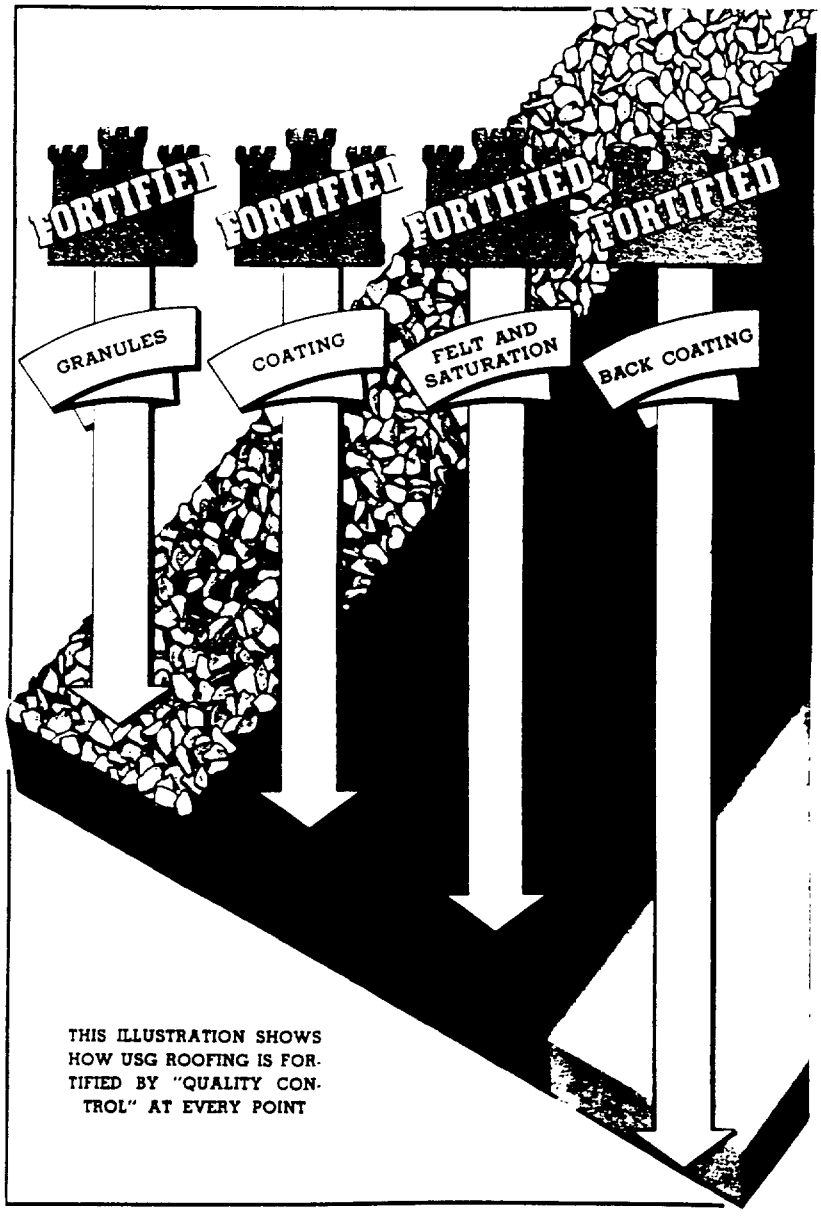
From front to back, side to side, and end to end—Granules, Coating, Felt, Saturation, and Back-Coating—all are selected fighting units put together for long survival in the continual war against wear.

2. QUALITY CONTROL AT EVERY STEP OF PRODUCTION — FORTIFIED AT EVERY CRITICAL POINT

That the phrase "USG" Always Means QUALITY" shall be a fact, men are stationed like sentries at all plants—Quality Control Men—who watch every step, weigh every ingredient, time every operation, measure every material—then prove every process.

3. A NAME KNOWN FOR 35 YEARS OF LEADERSHIP IN BUILDING MATERIALS

USG Building Products are widely known and respected wherever buildings are built or remodeled.



THIS ILLUSTRATION SHOWS HOW USG ROOFING IS FORTIFIED BY "QUALITY CONTROL" AT EVERY POINT

BB024 1091

USG ASPHALT SHINGLE TYPES

NOTE—*The six types of shingles described here all carry the Class C Label of the Underwriters' Laboratories, Inc.*

TAPERED STRIP SHINGLES

The Tapered Strip Shingle, thick at the butt end and thin at the top, has the greater portion of the protective asphalt coating at the butt end where the wear comes. The dimensions of the tabs in relation to their thickness give the shingles a rugged utility and create a heavy shadow line. The Tapered Shingle is available in a number of solid colors and a variety of attractive warm and cool blends, a range adapted to the correct color treatment of any slope-roof dwelling.

THICK BUTT SHINGLES

USG Thick Butt Shingles, like USG Tapered Shingles, have additional protective asphalt coating at the butt or exposed portion. The weight of these shingles is further distributed by using a fine mineral surfacing on the top part and standard size granules on the butt end. By this special manufacturing process, USG Thick Butt Shingles provide lasting weather protection, color and beauty of exceptional character.

SQUARE BUTT SHINGLES

In addition to the Tapered Strip Shingles and the Quad Shingles, both of which are in the square butt pattern, other three and four tab square butt shingles are produced in a variety of pleasing colors and color combinations. Due to the thoroughly conservative design, square butt strip shingles have always been popular and genuinely appealing to home owners.

HEXAGON STRIP SHINGLES

A pleasing variation in design and surfacing is available in USG Hexagon Strip Shingles. A thoroughly asphalt saturated base coated on both sides and covered with attractive colored surfacings combine to form this popular shingle. USG Hexagon Strip Shingles are produced in a full range of colors and sizes for various purposes.

THATCH SHINGLES

USG Thatch Shingles offer a pleasing variation in design from the more standard square butt and hexagonal roof patterns. Thatch Shingles have pleasing roof lines when viewed from any angle and are particularly suited to small homes. Their design is such that they offer unusual resistance to high winds. They come in two sizes—10 and 12 in. in width—and in a wide range of colors. The larger type provides full double coverage.

ARRO-LOCK* SHINGLES

A most successful lock shingle which requires only two nails per shingle yet the method of nailing secures each shingle at four points. All exposed edges are angular, eliminating the possibility of water following straight line edges over head-lap. The lock, a device, which holds each shingle securely, permits natural expansion or contraction without buckling. This shingle, particularly adapted to re-roofing, is manufactured in a number of colors and color combinations.

OTHER SHINGLE TYPES

The USG shingle line includes, in addition to the above types, Quad* Shingles, Standard and Giant Individual Shingles, Dutch Lap Individual Shingles, Tritab* Strip Shingles, Grip-Lock* Shingles, Super-Tite* Shingles, and Brick Siding Strips. Each type of shingle is available in a variety of plain colors and blends.

USG ASPHALT ROLL ROOFING

USG ADAMANT* (Mineral Surfaced Roofing)

Adamant is a high quality mineral surfaced roll roofing for use on structures where appearance is important but roofing at lower cost than shingles is desired. Its low initial material and application cost readily suit it to industrial properties. It weighs ninety pounds per roll of 108 square feet, 36 in. wide, packed complete with nails, lap cement, and direction sheet for application, and carries the Class C Underwriters' label. It is furnished in a range of colors.

USG ZEEN-X* (Corrugated Surfaced Roll Roofing)

A corrugated talc surfaced roll roofing of superior quality affording economical protection where long service is paramount. Produced in rolls 36 in. wide, containing 108 square feet. Directions for laying and sufficient nails and lap cement for proper application are contained in each roll. Each of the four weights—45, 55, 65, and 75 pounds—carries the Underwriters' Class C label.

USG IMPERIAL* MICA (Surfaced Roll Roofing)

A substantial roll roofing, mica surfaced on both sides, combining the best materials into roll roofing, moderate in cost and of proven endurance. Necessary nails, cement, and directions for laying are packed in each roll. Manufactured in 35, 45, 55, 65, and 75 pound weights, rolls 36 in. wide, containing 108 square feet each. The 55, 65, and 75 lb. weights carry the Class C label of the Underwriters' Laboratories, Inc.

USG DIXIE* and PARACO* (Talc Surfaced Roofing)

A smooth surfaced talc finished roll roofing of great durability at low cost. Produced in three weights—35, 45, and 55 lbs.—in rolls 36 in. wide containing 108 square feet. Directions for laying and sufficient nails and lap cement for proper application are contained in each roll.

OTHER MISCELLANEOUS USG ROOFING PRODUCTS

Our line contains various other types of serrated edge roll roofings, building and sheathing papers, asphalt and tar saturated felts, built-up roofing cap sheets, asphalt, pitch, plastic and liquid roof cements and coatings.

*Trade-Mark

BB024 1092

ASBESTOS CEMENT PRODUCTS

SIDING AND SHINGLES

USG ASBESTOS CEMENT SIDING



Even Dirty Oil Will Not Penetrate "Glatex" Surface



Wipes Off—Like Cleaning a China Dish



The Surface Is Restorcd to Its Original Freshness

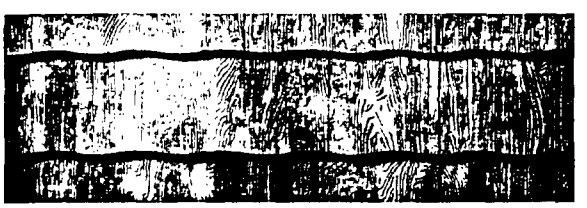
GLATEX*—A NEW REVOLUTIONARY PROCESS—Glatex is a method of manufacturing asbestos cement siding that gives the siding a finish harder and more durable than ever before produced. Glatex siding is fully cleanable, non-porous and non-absorbent.

The Glatex finish is a mineral composition that develops a close bond with the asbestos shingle base and completely seals all the pores in the shingle. After several layers have been applied, the shingle is subjected to high heat which chemically changes the composition into an insoluble, non-absorbent, non-staining, fully washable and cleanable finish of great durability similar to the finish on a fine China dish.

GLATEX QUALITIES—Not affected by soaking and freezing; waterproof; fireproof; repels dirt; never requires painting; can be cleaned with soap and water; rust streaks can be removed with oxalic acid; fresh paint or caulking compound can be removed with turpentine without staining; not affected by dust storms.

SIZES—Glatex is only available at present in the No. 600 White Wavy Butt Siding described below.

DESCRIPTION—USG Asbestos Cement Sidings offer fire protection, permanence, beauty at an unusually low cost considering their many years of service. They are made in a variety of colors and designs to provide the architect full freedom of selection and enable him to specify exterior walls that will remain attractive throughout the years. Outstanding features of USG Asbestos Cement Siding are the trueness and uniformity of colors, the variation in face textures, and the length of the shingle units—3 in. longer than any other asbestos cement shingle now available. This means 11% fewer joints, tighter, more wind resistant walls.

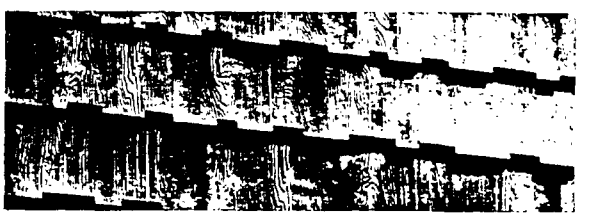


No. 600 USG Wavy Butt Siding

NO. 600 USG WAVY BUTT SIDING—Idealized Wood grain texture, uniform thickness. Colors: Bright Gray, White. Sizes: 12 x 27 x 5/32 in. Exposure: 10½ x 27 in. Overlap: 1½-in. maximum—1¼-in. minimum. Shingles per square: 51. Shingles per bundle: 17 (covers 33⅓ sq. ft.) Approximate weight per square: 186 lbs. Accessories required—included in price: 51 pieces Asphalt Joint Strips 3 x 12 in. and 1¾ in. Alloy Face Nails (Electro Tin Plated). Not included in price: ¾ lb. 1¼-in. Galvanized Nails required for concealed (top) nailing. (See cut above.) Available in white GLATEX.

NO. 600-A USG WAVY BUTT SIDING—Idealized Wood Grain Texture, uniform thickness. Color: White. Size 9½ x 27 x 5/32 in. Exposures: 8 x 27 in. Overlap: 1½-in. maximum—1¼-in. minimum. Shingles per square: 66. Shingles per bundle: 22—covers 33⅓ sq. ft. Approximate weight per square 190 lbs. Accessories furnished—included in price: 66 pieces Asphalt Joint Strips 3 x 9½ in. and 1¾ in. Alloy Face Nails (Electro Tin Plated). Not included in price: 1 lb. 1¼-in. Galvanized Nails for concealed (top) nailing.

NO. 700 USG THATCH BUTT SIDING—Idealized Wood Grain Texture, uniform thickness, deep wavy lines. Colors: Bright Gray, White. Size: 12 x 27 x 5/32 in. Exposure: 10½ in. Overlaps: 1½-in. maximum—1¼-in. minimum. Shingles per square: 51. Shingles per bundle: 17—covers 33⅓ sq. ft. Approximate weight per square: 186 lbs. Accessories required—included in price: 51 pieces Asphalt Joint Strips 3 x 12 in. and 1¾ in. Alloy Face Nails (Electro Tin Plated). Not included in price: ¾ lb. 1¼-in. Galvanized Nails required for concealed (top) nailing. (See cut below.)



No. 700 USG Thatch Butt Siding



No. 900 USG Clapboard

NO. 900 USG CLAPBOARD—Idealized Wood Grain Texture, uniform thickness. Color: White.

Size. 9 x 27 x 5/32 in. Exposure: 8 in. Overlap: 1 in. Pieces per square: 66. Pieces per bundle: 22—covers 33⅓ sq. ft.

Approximate weight per square: 190 lbs.

Accessories required—included in price: 66 pieces Asphalt Joint Strips 3 x 9 in. and 1¾ in. Alloy Face Nails (Electro Tin Plated)

Not included in price: 1 lb. 1¼-in. Galvanized Nails for concealed (top) nailing.

* Trade Mark.

BB024 1092 BB024 1093

USG ASBESTOS CEMENT ROOF SHINGLES

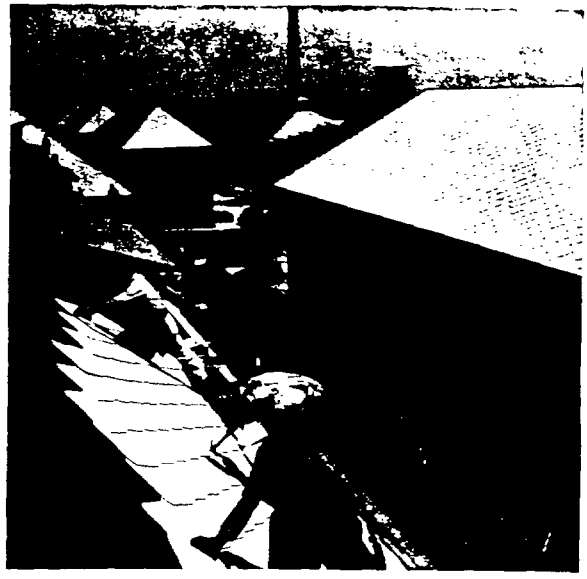
DESCRIPTION—USG Asbestos Cement Roof Shingles provide a waterproof, fireproof, beautiful roof that is low in cost considering their many years service. Made of two non-inflammable materials—asbestos fibres and Portland cement felted together and bonded under great pressure. Carry highest ratings of the Underwriters' Laboratories. Wide variety of attractive colors and shapes enables architect to specify the roof that best conforms to the structures he designs.

ADVANTAGES—USG Asbestos Cement Shingles do not rot, rust or decay; they are fireproof, colors are enduring; they give lifetime service.

NO. 300 USG DUTCH LAP SHINGLES—Class B Underwriters' Label. ¼ sidelap (also applied ⅓ sidelap). Idealized Wood Grain Texture, uniform thickness. Colors: Gray, Green, Black, Red. Size: 16 x 16 x 3/16 in. Exposure: 12 x 13 in. (or 10⅔ x 13 in.).* Headlap: 3 in. Sidelap: 4 in. (or 5⅓ in.).* Shingles per square 92 (or 104)*—covers 99⅔ sq. ft. Shingles per bundle: 23—covers 25 sq. ft. (or 22½).* Approximate weight per square: 266 lbs. (or 295* lbs.). Accessories: (not included in price). No. 300-A Dutch Lap Starters: ¾ lb. (or 1 lb.)* 1¼-in. Galvanized Nails and 92 (or 104) Copper Storm Anchors per square. No. 301 Dutch Lap Hip and Ridge Shingles.

***NOTE:** If shingles are applied with 5½-in. sidelap (⅓ lap) the figures in parentheses ( ) above apply.

NO. 100 USG HEXAGONAL METHOD SHINGLES—Class B Underwriters' Label. Smooth surface, uniform thickness. Colors: Gray, Green, Red, Black. Size: 16 x 16 x 3/16 in. Weather Exposure: 13 x 13 in. Overlap: 3 in. Shingles per square: 80. Shingles per bundle: 17. Approximate weight per square 267 lbs. Accessories Required: (Not included in price) 1st Course Starters No. 101, 2nd Course Starters No. 102, 1 lb. 1¼ in. Galvanized Nails and 86 Copper Storm Anchors per square. No. 103 USG Asbestos Cement Ridge Roll.



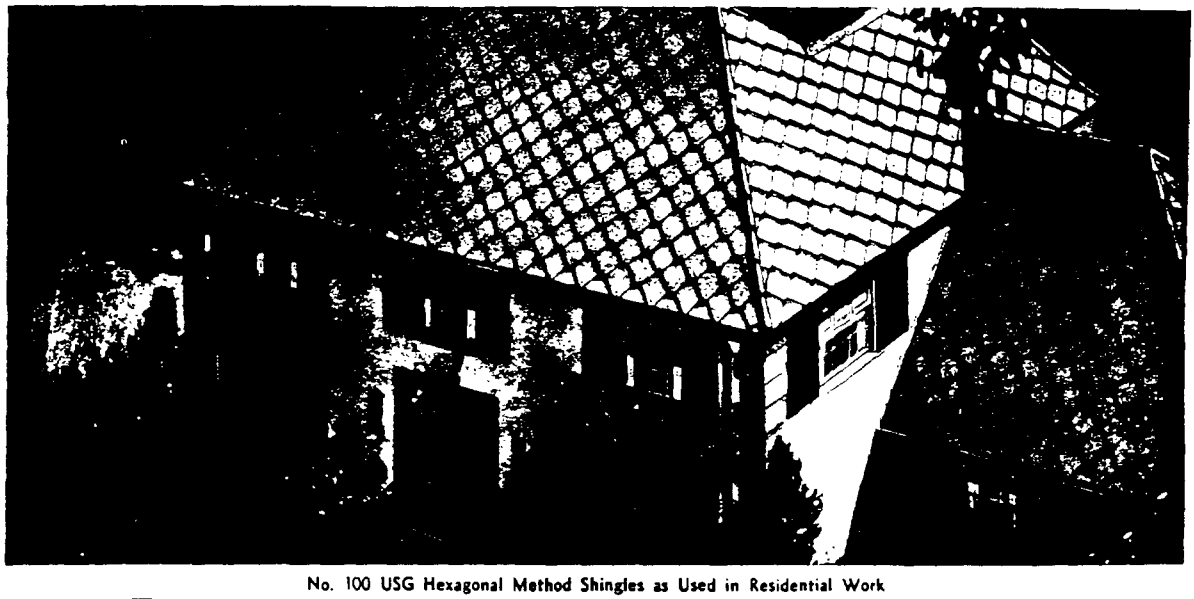
Applying No. 100 Hexagonal Shingles, Ft. Sheridan, Ill.



No. 100 USG Hexagonal Method Shingles



No. 300 USG Dutch Lap Shingles



No. 100 USG Hexagonal Method Shingles as Used in Residential Work

PAINT PRODUCTS

TEXOLITE PASTE WALL AND CEILING PAINT

A New Principle in Paint

Paint without any paint odor, without gloss, without stickiness—a white that is white—stays white. Colors unsullied by the yellowing effect of oxidizing oil. Paint that is opaque in a single coat, and dries in less than an hour; those are a few of the virtues of Texolite*, the new principle in paint.

Texolite—Texolite is an interior decorative paint made primarily for plaster surfaces, but may be applied to any solid surface new or old except calcimine. Unique in many ways, it does not seal the surface, permits walls to breathe and, hence, may be used over "green" plaster without harm to paint or plaster.

Colors—Two groups of ready-mixed colors: Ten pastel shades and white and eleven deep colors of great brilliance and clarity. The deep colors may be applied directly or mixed with white to make endless shades. All colors may be mixed with each other, as all are paint (not concentrations of pigments) without overloading the vehicle with pigment. A color card especially made for architects, showing many of the possibilities of Deep Texolite, will be mailed on request or can be had from any office or representative of the company.

With Texolite the designer has at his command all the brilliant, bold color masses of the World's Fairs or subtle tints of great delicacy. Texolite is a true decorator's medium.

New, Yet Time Tested—Made for interior use, Texolite was the choice for the exteriors of most of the buildings at the Chicago, Dallas and Cleveland Fairs. It complies with the specifications of all Federal Departments and construction agencies.

Details—Shipped as a paste, thinned with water to paste consistency, self-leveling, no brush marks, highly light reflective in the lighter shades. Low first cost and lower maintenance cost. Buildings may be redecorated with greater frequency for less expense, as one coat usually suffices.

K-Cemo Primer*—A lime-locking primer for use over porous surfaces—stops uneven suction—the ideal primer for insulation board.

Recommended for such use under Texolite. It may also be used over high gloss surfaces to prevent sagging, color migration and "brushing through" when any paint is applied over such surfaces.



*Trade-Mark

BB024 1094

BB024 1095

PAINTS FOR TEXTURING

The charm and appropriateness of the wall and ceiling treatment of any room result from a combination of color and texture.

The modern trend in texture is toward a low relief, simple in character and of random nature; or if patterned, the design has a free rather than exact treatment of the conceived design or pattern. Neither the color nor the texture is designed to attract the eye to its existence or an inspection of its detail, but like the ingredients of some famous chef's sauce, the decorative elements blend into a whole which is appropriate and which breaks up monotonous expanses of flat wall to provide a surface on which light may play in its ever changing aspects.

Borders and occasional accents in relief which pick up the feeling of the purpose of the room unobtrusively and yet accurately are easily obtained with USG Texture Paints and such simple tools as stencils, whisk brooms, corrugated paper, etc. "Modern Principles in Paint and Decoration," a USG publication for architects, goes into detail—gives many helpful hints and methods by which one can secure charming interiors. Any USG Office will supply one.

TEXTONE*, the quality texture paint, will produce any variety of textures in light or heavy relief. It does not shrink or crack, and hugs the surface closely and permanently. Textone may be integrally tinted with dry colors; colored sands may be blown into the freshly laid surface or Texolite may be applied over it in a single coat to furnish the color. Interesting glazes are produced by using water glazes with Textone sealer or by tinting Textone Glaze with colors ground in oil, wiping the glazed surface with a cloth to provide proper highlights.

Coverage—A pound of Textone will produce from one to three yards of treated wall surface, depending upon the depth of the texture.

Colors—Made in white only, but easily tinted with USG Limeproof colors.

USG TEXTURE PAINT—USG* Texture Paint is a dry, white, powdered plastic paint, very similar to Textone in working qualities and in texturing possibilities. It is priced less than Textone, and although it necessarily lacks some of the quality of the latter, particularly the long-storing feature, yet it is far superior to most plastic paints on the market.

One pound will cover about one square yard. Packed in 25 and 100-lb. packages and 300-lb. (net) barrels.

EM-BEL-LO—Em-Bel-Lo* is a dry, white powder, texture-yielding paint, economical to buy and apply. The addition of water makes it ready for application. It is particularly adaptable to the production of water-floated textures. Colors are added and the textures produced as with other plastic paints. Application is with a brush. It is not self-sizing.

One pound of Em-Bel-Lo covers from ¾ to 1 sq. yd., medium texture.

Em-Bel-Lo can be satisfactorily tinted, before application, to any desired shade through the introduction of dry limeproof color.

Made in white only. Packed in 25 and 100-lb. packages and 325-lb. barrels.

USG CEMENT PAINT

CEMENTICO*—Cementico is a cold water, weatherproof, insoluble cement paint, designed especially for use over *porous* masonry surfaces. It brings beauty, life and color to unpainted masonry walls indoors or out.

Colors—Available in ten standard colors and white. Tints may be secured by adding small quantities of USG Limeproof colors to White Cementico.

Limitations—Not designed for use over wood, plaster or non-porous or greasy surfaces.

Should not be used on concrete floors or applied to efflorescing walls until the cause of the efflorescence has been eliminated.

OTHER USG PAINT PRODUCTS

DURACAL—A well formulated, smooth working powder casein paint. Can be applied over fresh or untreated plaster. Mixes easily and spreads well. Five pounds of Duracal* will cover one coat of from 200 to 300 sq. ft. over primed or painted surfaces—over porous surfaces, slightly less. Made in white and 8 standard colors. Packed in 5 and 25-lb. packages, 100-lb. drums, and 325-lb. (net weight) barrels.

USG CALCIMINE—A good cold water type calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb. barrels.

RED TOP PATCHING PLASTER—Red Top* Patching Plaster contains no lime. It is non-shrinking, very white, and specially formulated to assure easy workability.

USG SPACKLING COMPOUND—USG Spackling Compound is indispensable to painters and unexcelled for general household utility repairs. It is excellent for spackling and as a base for Swedish putty. It adheres firmly to any firm, clean surface—even to glass and steel. Dries stone hard without shrinking or cracking, thus furnishing a perfect surface for redecorating.

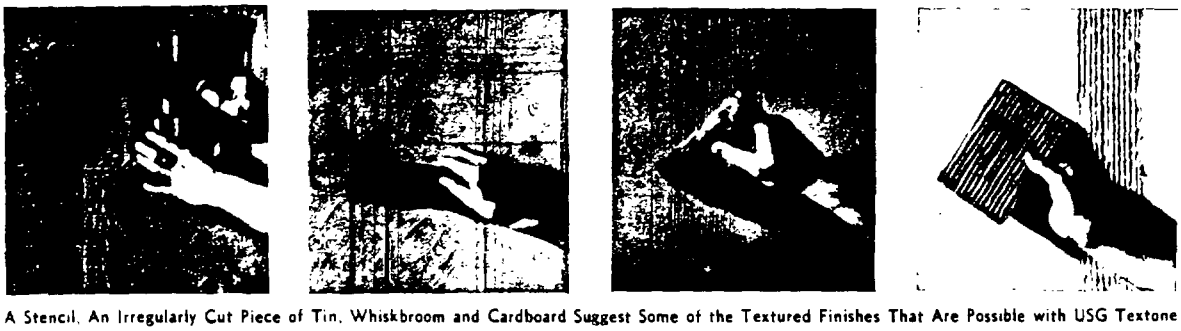
RED TOP PAINTERS' PLASTER—A general purpose painters' material. Red Top Painters' Plaster is produced from selected white gypsum rock especially treated to afford easy mixing. When set, it is unusually dense and strong.

KAL*—A high grade hot water calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb barrels.

USG INTERIOR COLD WATER PAINT—A material giving better results than ordinary whitewash but affording equal economy. It is ideal for periodic cleaning and reconditioning of factories, warehouses, farm buildings, and other structures. Made in white only. Packed in 25-lb. bags and 350-lb. barrels.

USG EXTERIOR COLD WATER PAINT—An economical reconditioning paint for general outside utility work applied over practically any type of clean, firm surface.

Forms an unusually smooth, tight film which remains much cleaner for this reason than the rough surface of the usual exterior wall coating. Made in white only. Packed in 25-lb. bags and 325-lb. barrels.



A Stencil, An Irregularly Cut Piece of Tin, Whiskbroom and Cardboard Suggest Some of the Textured Finishes That Are Possible with USG Textone

*Trade-Mark

SEC. E GYPSUM CONSTRUCTIONS

Engineering Sales Division

ROOF DECKS, FLOORS, PARTITIONS, FIREPROOFING

WHY GYPSUM? — The choice of gypsum for fireproof roof decks, floors, partitions and structural fireproofing, rests on the unique fact that gypsum not only possesses all of the desirables normally sought, but also many "plus values" not ordinarily described in connection with structural fireproofing. These advantages are inherent in gypsum and apply with equal force to all of the gypsum constructions described in this catalogue. It is in these "plus advantages," which add nothing to cost, that one finds the reason for the constantly increasing acceptance of gypsum as the ideal material for the purposes suggested in these pages.

FIREPROOF — The generally accepted definition for fireproofing goes far beyond the necessity for simple incombustibility in the fireproofing material. Proper fireproofing results from the combination of a real fireproofing material with competent engineering design. These demands must be met:

1. The load supporting members of the structure must be fully protected from the fire or any weakening influence resulting from fire which might cause collapse of the structure. The fire's heat must not be permitted to reach the supporting structure in sufficient intensity to cause expansion in the structural members which might wreck the structure.

2. The fire must be confined to the room of its origin.

3. The protection should be so designed that it will maintain its protection for the duration of any possible fire in the structure.

Gypsum constructions are again unique in their ability to supply all of the demands imposed by this concept of fireproofing. Briefly, gypsum possesses these proved properties:

1. It is impossible for temperatures greater than 212° F. to reach protected areas or framework until the gypsum has been dehydrated by the fire. The dehydration of gypsum under fire conditions proceeds slowly from the exposed face toward the protected area. The dehydrated material remains on the exposed face as a heat insulator of high order to still further retard the progress of the fire in calcining the protecting gypsum. The rate of calcination decreases as the fire progresses.

2. Since it is impossible to heat gypsum above 212° F. without calcinating it, gypsum expands through a temperature of but 142° (212° — 70°), instead of 1680° (1750° — 70°), through which other fireproofing materials must expand. The thermal expansion of gypsum fire protection, therefore, is completely negligible. It can neither wreck itself through expansion nor wreck protected materials by placing undue strains on them, and for the same reason, it cannot crack or spall like china when heated ununiformly. It stays put until practically the last vestige of the material has been calcined, a long time. Since gypsum cannot be heated over 212° F. without dehydration, it is impossible to heat anything protected by gypsum over 212° F. as long as any protection remains standing—thus protecting combustibles stored in rooms adjacent to the fire and preventing expansion in the protected framework.

3. These desirables (they supply perfect fire protection) are maintained for any expected exposure of fire intensity and duration by simply adjusting the thickness of the protection to meet the demand, according to well known and demonstrated data. This remarkable fireproofing ability, exclusive with gypsum, has been proved almost endlessly by laboratory tests and fire experiences since 1912.

LIGHTWEIGHT—Gypsum is the lightest of any of the materials used for fire protection. It requires less structural steel to support it. Building loads are reduced, resulting in savings in the costs of the supporting structure.

PLASTIC—Gypsum may be cast in place or readily and cheaply cut to fit any structural situation that the designer has to meet. Numbers of special shapes at special prices are not required.

HEAT INSULATION—Gypsum, unlike most fireproofing materials, is an excellent heat insulator. The table below makes a comparison of the thermal conductivities of the several gypsum constructions suggested in this catalogue and other materials of construction used for similar purposes.

HEAT LOST THROUGH VARIOUS CONSTRUCTIONS

(In B.t.u. per hr. per sq. ft. per deg. diff. F.)

Corrugated Sheet Iron	1.30
Cement Tile (1⅝" thick)	.68
Stone Concrete (3" thick)	.81
Pine Plank (2" thick)	.34
Pyrobar Short Span Tile (3" solid)	.40
Pyrobar Short Span Tile (3" hollow)	.39
Pyrobar Short Span Tile (4" hollow)	.33
2½" Sheetrock-Pyrofill	.36
3" Sheetrock-Pyrofill	.35
2½" Weatherwood-Pyrofill (½" board)	.26
3" Weatherwood-Pyrofill (1" board)	.19

Note: 5 ply roof covering included except on corrugated sheet iron.

Here one finds real heat insulation at no cost. Gypsum roofs are generally amply heat insulative to prevent condensation under any normal building exposure. For the same reason, they reduce the heating plant cost and save fuel.

LIGHT REFLECTION—The white under side of gypsum roof construction absorbs very little light, and effects useful savings in lighting costs in industrial buildings. When sullied by time, the color is quickly and cheaply restored by the application of USG Econo-Brite,* either brushed or sprayed on.

LOW MAINTENANCE—Gypsum neither rots, decays, nor rusts, nor does it rust or stain other materials. It provides no food or nesting material for vermin of any kind.

NAILING BASE—Special nailing strips, blocks, and materials required by some roof coverings are not required by most of the gypsum constructions described here. See later pages for details.

SPEEDY INSTALLATION—Precast constructions are ready for erection when they arrive from the mill. Poured in place constructions set in less than a half hour and may be subjected to full live loads at that time. Quicker occupancy of the structure is provided where gypsum constructions are used.

ECONOMIES—Low in first cost, the "plus values" listed above are inherent in gypsum, effect still further economies.

ENGINEERING SERVICES—All of the representatives of the Engineering Sales Division are trained engineers, able to assist architects and designers in the selection of the gypsum constructions best suited to their particular problems to produce the maximum of utility and economy.

ERECTION SERVICES—The precast tiles may be purchased for local erection by anyone or the company will contract to supply and install them. The poured-in-place constructions are sold "in place" and installed by the company's construction forces.

*Registered Trade-Mark

BB024 1096

BB024 1097

SHEETROCK-PYROFILL and WEATHERWOOD-PYROFILL ROOF CONSTRUCTIONS

These roof deck constructions vary in but one consideration: the permanent undersurface on which the deck is formed is made either of ⅜ in. Sheetrock* or Weatherwood* Insulation Board in ½ or 1 in. thickness. The variation in weights of the various constructions is shown in the table of sub-purlin sizes and slab weights below.

THE SHEETROCK PYROFILL construction provides a completely incombustible construction with a smooth, flat, highly light reflective undersurface consisting of 32" wide Sheetrock, in sheets whose length is equal to the purlin spacings, so that the end joints occur over the main purlins. Sheetrock providing both the undersurface and the form on which the reinforcing steel is laid and the plastic Pyrofill* mixture poured.

THE WEATHERWOOD-PYROFILL construction provides additional heat insulation and useful sound absorption at the expense of a slight loss in light reflectivity, and the addition of a very small volume of mildly combustible material. The acoustical absorption produced by the Weatherwood-Pyrofill construction is particularly important in auditoriums, gymnasiums, and similar buildings, where in many cases it is amply sufficient to provide correct acoustics. It is also a large factor in the reduction of the noise levels in otherwise noisy factory buildings.

The undersurface of the Weatherwood-Pyrofill construction is constructed of either ½ or 1 in. thick Weatherwood Insulating Board 32 in. wide, and likewise cut in lengths equal to the purlin spacings.

SUB-PURLINS—Steel sub-purlins are used in both of these roof constructions made of light rails or tee sections, laid at right angles to the main purlins and spaced approximately 32½ in. on centers, by clipping them to the main purlins. The structural roof is formed by pouring Pyrofill, a mixture of gypsum, stucco, water and wood fibre, in the proportion of 12½ pounds of fibre to 87½ pounds of calcined stucco, on the form provided by either the Sheetrock or Weatherwood. In this poured slab there is embedded a continuous, electrically welded, galvanized steel fabric, especially made to USG specifications with No. 12 longitudinal wires, 4 in. on center, and No. 14 transverse wires, 8 in. on center.

CURBS, END WALLS, ETC., are usually constructed of precast gypsum tile. They may be also poured in place using the Sheetrock Pyrofill or Weatherwood-Pyrofill construction, if desired.

OUTSTANDING ADVANTAGES — Designed particularly for large, uniform areas of roof, either of these constructions is completely adaptable to any variety of steel framing or truss constructions in flat or pitched designs, with or without monitors or saw teeth.

Fireproof—See page 1.

Lightweight—Standard weights for the various thicknesses and spans are shown in the table. It should be noted that generally, framework designed to carry wood roof decks can be used to carry these lightweight gypsum decks.

Maintenance—The construction provides a roof which will not rot, rust or decay, or affect the supporting steel. It consequently provides years of service without maintenance costs. It need not be painted to preserve it.

High Heat Insulation—A table comparing the heat insulation values of these constructions with other roof constructions will be found on page 1.

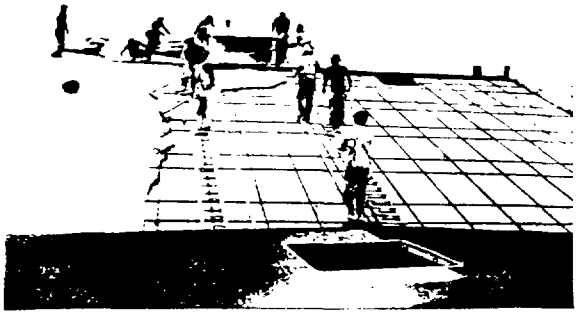
Economy—*All things considered, there is no roof construction* more economical than either of these poured-in-place Pyrofill decks for large structures, mill buildings, auditoriums, gymnasiums, etc.

SUB-PURLIN SIZES AND WEIGHTS OF SLABS

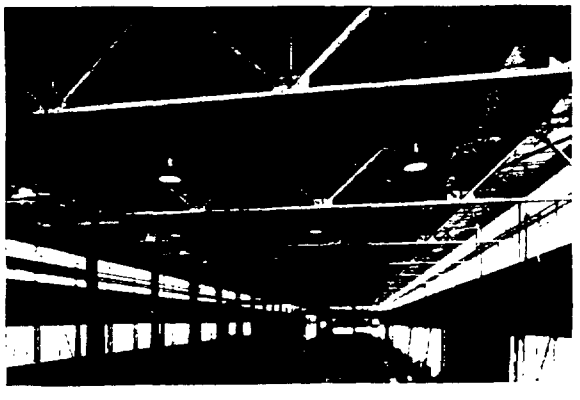
Sub-Purlins Spaced 32½" Total Load — 45 Lbs. per Sq. Ft. M = 1/10 WL

Size of Sub-Purlin (Weight per Yard)	Allowable Span		Weight of Sub-Purlins in lbs. per sq. ft. of Roof	Weight of Slab Including Sub-Purlins					
				Sheetrock Pyrofill		Weatherwood Pyrofill			
	18,000 lbs. per sq. in. Sub-Purlin Stress	*20,000 lbs. per sq. in. Sub-Purlin Stress*		Minimum Slab Thickness*	Weight in lbs. per sq. ft.	Min. Slab Thickness* ½" Bd.	Min. Slab Thickness* 1" Bd.	Wt. per sq. ft. in lbs. ½" Bd.	Wt. per sq. ft. in lbs. 1" Bd.
No. 178 U.S.G. 8-Lb. Bulb Tee	6'-6"	6'-10"	1	2½"	11.5	2½"	3"	10.0	10.5
No. 218 U.S.G. 8.3-Lb. Bulb Tee	7'-7"	8'-0"	1.02	2½"	11.5	2½"	3"	10.0	10.5
12-Lb. Rail	8'-11"	9'-3"	1.5	2½"	12.0	2½"	3"	10.5	11.0
16-Lb. Rail	11'-2"	11'-6"	2	2½"	12.5	2½"	3"	11.0	11.5
20-Lb. Rail	13'-3"	13'-8"	2.5	3"	13.0	3"	3"	13.5	12.0

*Total Slab Thickness Including Sheetrock or Weatherwood . . . Minimum Thickness of Pyrofill 2".



Pouring the Deck

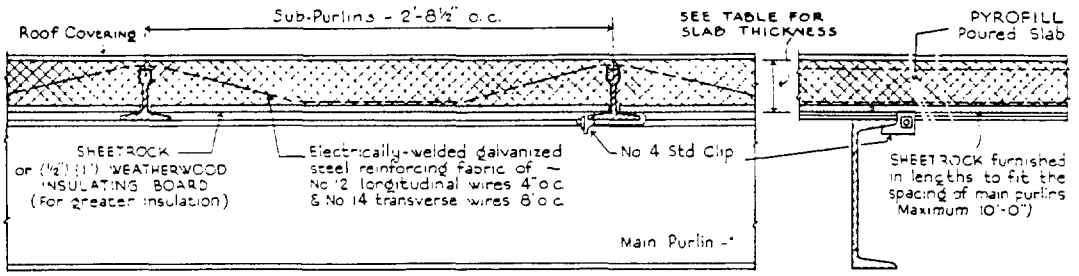


Underside of Sheetrock—Pyrofill Roof

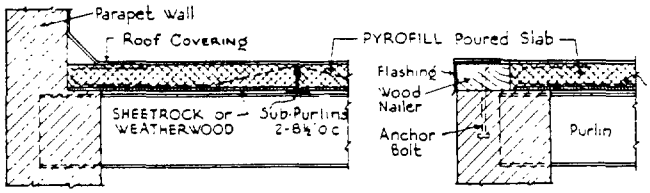
*Reg. Trade Mark.

BB024 1098

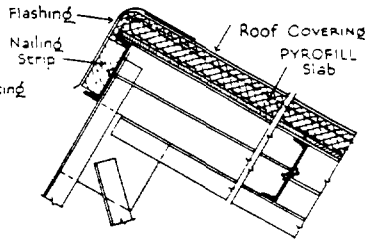
SHEETROCK-PYROFILL, WEATHERWOOD-PYROFILL DETAILS



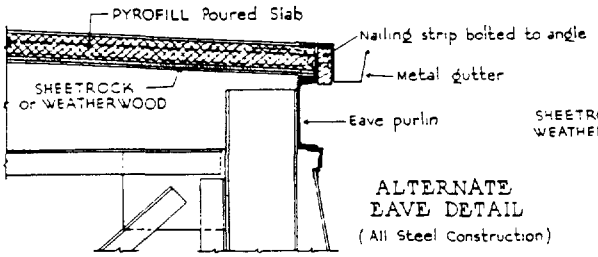
TYPICAL SHEETROCK OR WEATHERWOOD PYROFILL CONSTRUCTION



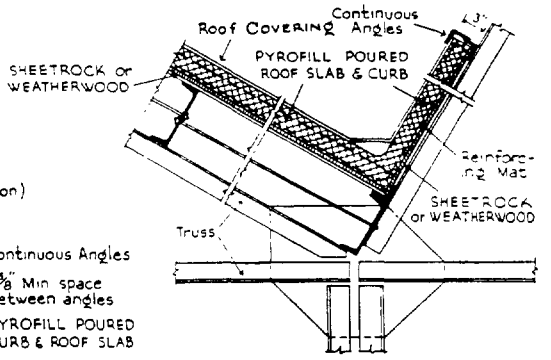
ALTERNATE DETAILS FOR ENDS OF BUILDING



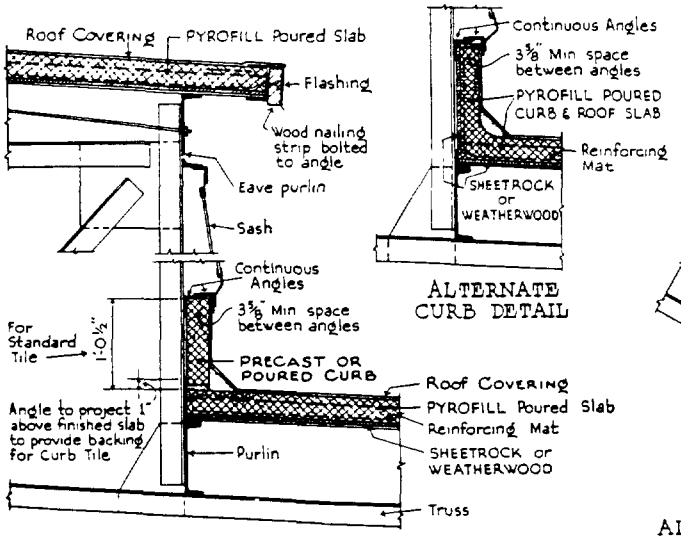
SAWTOOTH PEAK CONST'N.



ALTERNATE EAVE DETAIL
(All Steel Construction)

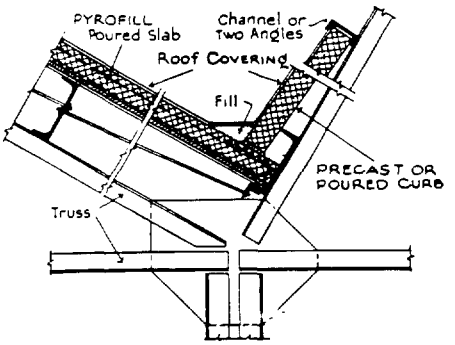


SAWTOOTH GUTTER CONST'N.



CURB & EAVE CONSTRUCTION FOR MONITOR

ALTERNATE CURB DETAIL



ALTERNATE SAWTOOTH GUTTER CONSTRUCTION

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BB024 1099

PYROBAR GYPSUM SHORT SPAN ROOF TILE

This construction is ideally suited to smaller roofs, steeply pitched roofs, and roofs which are cut up by dormers or complicated hips and valleys. Three types of tile are used, each 30 in. long and 12 in. wide, properly reinforced with steel and cast in either solid or hollow design in the 3-in. thickness and hollow alone in the 4-in. thickness. The tile are supported in the roof structure by steel sub-purlins, spaced 30¾ in. on centers over the standard purlins, the sub-purlins being clipped or welded to the main roof purlins. Because of the small units and the ease with which they can be cut and fitted to suit difficult roofing areas, this construction is ideally suited for the purposes recommended.

REROOFING—Buildings constructed with wooden decks, which have rotted out, or have been consumed by fire, or galvanized corrugated iron decks which are no longer serviceable, may be economically reroofed with this permanent fireproof construction because of its *adaptability to any roof situation.*

REINFORCEMENT—All units, except the 3 in. hollow, are reinforced with an electrically welded galvanized steel mat, so designed as to afford top and bottom reinforcing and so formed as to secure accurate location of the mat. The 3-in. hollow tile are reinforced with two ⅜ in. cold rolled channels, laterally reinforced with two No. 8 wires, mechanically secured to the channels at each end to tie them together and provide end anchorages. Special devices are used in the moulds to securely position all reinforcing.

SUB-PURLINS—Recognizing the need for a more efficient and economical sub-purlin than the standard tee section, USG Engineers have developed the USG Bulb Tee Section. These special, patented sections have greater strength and greater bearing surface for the tile than standard tees of equal section area and weight. (See table of Sub-Purlin Sizes and Weights.)

NAILING—When slate or ornamental tile roof coverings are to be nailed directly to the deck (3-in. solid tile), square cut nails, having not less than 2 in. penetration into the gypsum, should be used. When heavy roofings are to be applied on very steep slopes, they should be fastened by bolting through the slab or nailing to wood grounds, which are, in turn, secured directly to the roof deck. *Because of the great expansion of sheet metal roofing, this type* requires thorough and rigid fastening, and the metal used for such purposes should be spaced not over 8 in. on centers and secured with two nails to the deck.

ADVANTAGES—All of those given here, plus the general inherent advantages which are concomitants of all gypsum roof constructions.

SUB-PURLIN SIZES AND ALLOWABLE SPANS

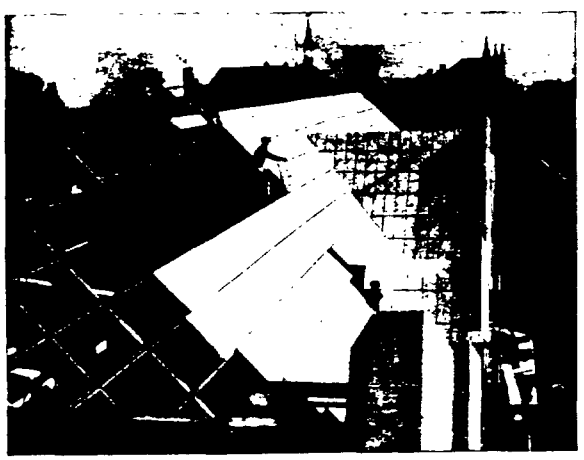
Based on 50 Lbs per Sq. Ft. Total Roof Load
Tees Spaced 2'-6¾" C. to C. M = 1/10 WL

Size of Tee	Allowable Span		Wt. of Tees Lbs. per Sq. Ft. of Roof
	18,000 lbs. Per Sq. In. Stress	20,000 lbs. Per Sq. In. Stress	
USG 2-15 16"x1⅞" 2.65 LB. BULB TEE	6'-4"	6'9"	1.04
USG 2-7 16"x2⅜" 2.7 LB. BULB TEE	7'-2"	7'7"	1.05
2½"x2½" 5.5 LBS	7'-8"	8'-1"	2.15
2½"x3" 6.1 LBS	9'-2"	9'-8"	2.4
3"x3" 6.7 LBS	9'-4"	9'-10"	2.61

Sizes and Weights of Pyrobar Gypsum Short-Span Roof Tile

3"x12"x30" Solid Tile
Wt. 17 Lbs. per Sq. Ft.
3"x12"x30". Hollow Tile
Wt. 12½ Lbs. per Sq. Ft.
4"x12"x30" Hollow Tile
Wt. 15 Lbs. per Sq. Ft.

NOTE: Add Weight of Tees to Weight of Tile to Secure Weight of Roof Deck.



Erecting Pyrobar Gypsum Short Span Roof Tile on Sloping Roof

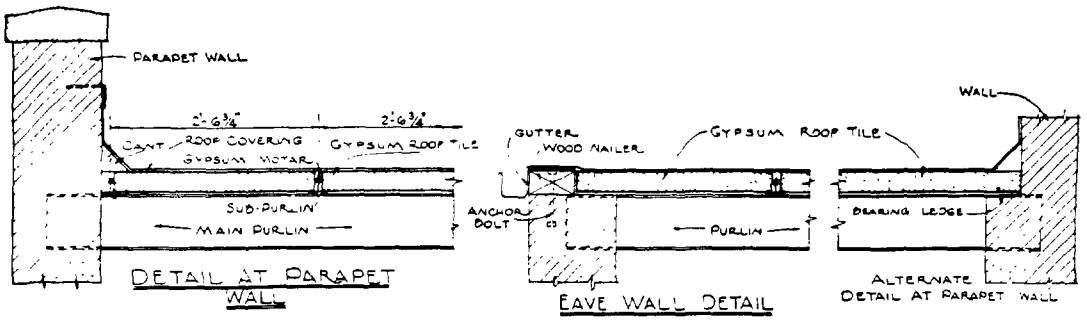


Erecting Pyrobar Gypsum Short Span Roof Tile on Flat Roof

BB024 1100

*Reg. Trade Mark

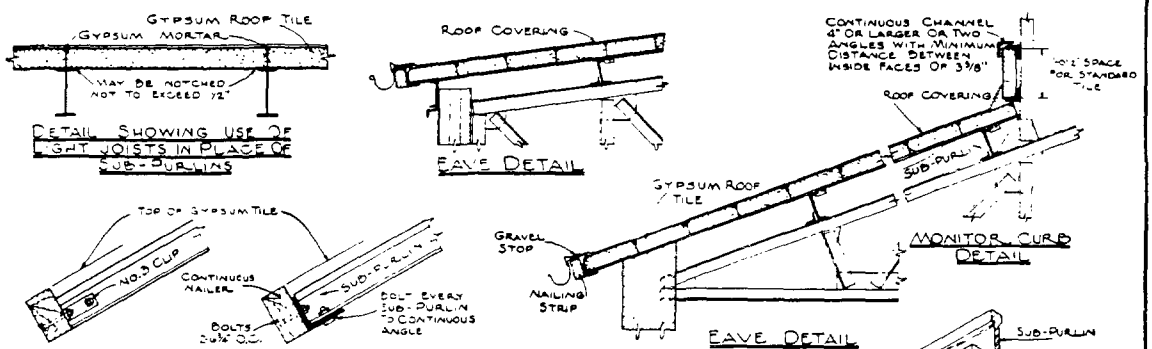
DETAILS OF PYROBAR GYPSUM SHORT SPAN ROOF TILE



DETAIL AT PARAPET WALL

EAVE WALL DETAIL

ALTERNATE DETAIL AT PARAPET WALL



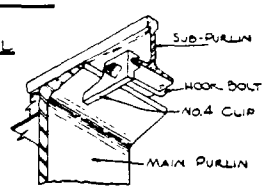
DETAIL SHOWING USE OF LIGHT JOISTS IN PLACE OF SUB-PURLINS

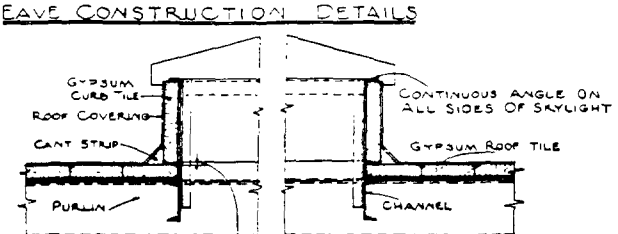
EAVE DETAIL

MONITOR CURB DETAIL

EAVE DETAIL

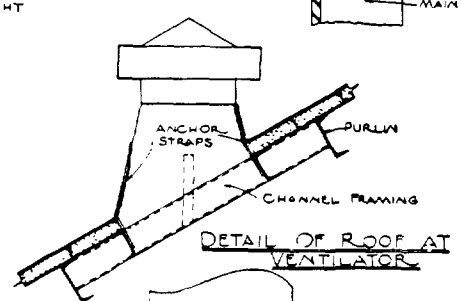
EAVE CONSTRUCTION DETAILS



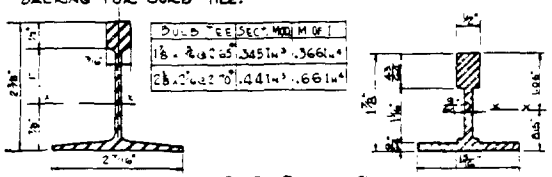


CONTINUOUS ANGLE TO PROJECT 1" ABOVE TOP OF FINISHED SLAB TO PROVIDE BACKING FOR CURB TILE.

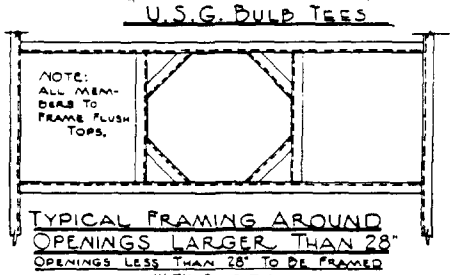
CURB DETAIL
SKYLIGHTS-VENTILATORS-ETC.



DETAIL OF ROOF AT VENTILATOR

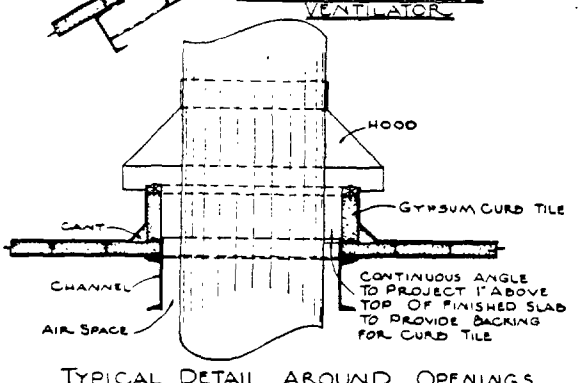


U.S.G. BULB TEES



TYPICAL FRAMING AROUND OPENINGS LARGER THAN 28"

OPENINGS LESS THAN 28" TO BE FRAMED WITH BULB TEES



TYPICAL DETAIL AROUND OPENINGS EXTENDING THROUGH ROOF

BB024 1101

TONGUE AND GROOVE GYPSUM ROOF AND FLOOR TILE

These lightweight tile are tongued and grooved on all four edges to fit together to form a continuous roof or floor deck. The tile are designed to permit cantilevering, thus the ends may overhang the supports. Such a design enables fireproof gypsum roof and floor constructions to be purchased much as lumber is purchased, the only restriction being that the supporting spans do not exceed those given in the tables. Combining all of the advantages which are inherent in gypsum, discussed on previous pages, USG Tongue and Groove Gypsum Roof and Floor Tile are economic because of low material and low erection costs.

ERECTION—The large units are laid directly on the supporting steel and anchored with galvanized clips, fastened into the sides of the tile and engaging the top flanges of the steel beams. End joints of the tile are staggered, coming where they may, either on or between the steel supports. Fractional length units should be used for starting alternate courses to break joints. Full length units can be cut where necessary without appreciable waste.

ANY ROOF COVERING—Ordinary built-up roof covering is applied according to standard practice. Where light slate or other light ornamental tile roofings are to be nailed to the deck, square cut nails, having 1½ in. penetration into the gypsum, should be used.

Where the slope is greater than 45° or when heavy roofings are to be applied, they should be fastened by bolting through the slab or nailed to wood grounds, which are, in turn, secured directly to the roof deck by nailing or bolting.

ANY TYPE OF FLOOR FINISH CAN BE USED—For a wood finish floor, the sleepers can be nailed directly to the gypsum slab and the finished flooring applied in the usual way. For linoleum, rubber tile, mastic tile and similar finishes, a leveling underlayment of Pyrotop, manufactured by the United States Gypsum Company, is placed on the Tongue and Groove Gypsum Tile to provide a proper base for the finish.

TYPES AND SIZES—Tongue and Groove Gypsum Floor Tile are made in several sizes and in two general types: one in which the steel reinforcing is completely embedded within the tile; and the other, in which preformed steel tongue and grooved edging supplements the reinforcement provided by an electrically welded galvanizing steel fabric, which is embedded in the gypsum. The conservative load recommendations of the tables result from tests conducted by nationally recognized laboratories.

2½ in. x 10 in. by 6 ft. Tongue and Groove Gypsum Roof and Floor Tile (Embedded Reinforcing)—These tile are designed for steel supports, spaced not over 30 in. on centers for floors (150 lb. live load), or over 48 in. for roofs (50 lb. live load). They are cast in steel moulds. Electrically welded galvanized steel reinforcing is completely embedded in the tile.

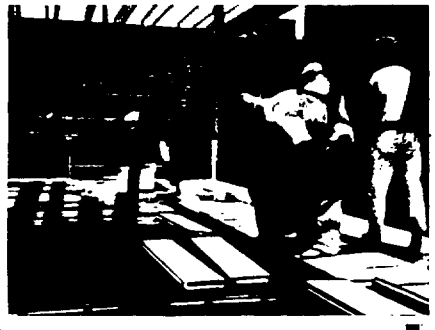
3 in. x 12 in. x 10 ft. Channel Section (Embedded Reinforcing)—These tile are reinforced with two channels, each 2 in. deep, with ¾-in. channel cross ties, held together with an electrically welded galvanized steel fabric. The steel tongues and grooves on all four edges interlock to provide continuity in the deck or floor.

USG Steel Bound Gypsum Tongue and Groove Tile—These are made in two sizes: the medium span tile—2 in. x 15 in. x 8 ft., the long span tile—2 in. x 15 in. x 10 ft. The shorter tile is designed for field supports, spaced on not greater than 4-ft. centers for roof constructions, and not greater than 3 ft. for floor constructions. The long span tile may be used on roofs with supporting steel up to 7-ft. centers and floor spans of not exceeding 5 ft. All tile are mill-moulded and have steel tongue and groove edges on all sides, as previously described.

CHANNEL SECTION—3" x 12" x 10'-0"		
Construction	**Span**	**Conservative Loads**
Floors	Up to 5'-0"	150 lbs. per sq. ft.
Roof	Up to 7'-0"	75 lbs. per sq. ft.

LONG SPAN STEEL BOUND GYPSUM TILE—2" x 15" x 10'-0"		
Construction	**Span**	**Conservative Loads**
Floors	Up to 5'-0"	150 lbs. per sq. ft.
Roofs	Up to 7'-0"	75 lbs. per sq. ft.
MEDIUM SPAN STEEL BOUND GYPSUM TILE—2" x 15" x 8'-0"		
Floors	Up to 3'-0"	150 lbs. per sq. ft.
Roofs	Up to 4'-0"	75 lbs. per sq. ft.







Above: USG 2½ in. T&G Roof and Floor Tile are quickly and easily erected

Left: USG 3 in. Channel Section T & G Roof and Floor Tile

Right: Installing USG Steel Bound Gypsum T & G Tile on airdrome, North Beach, Long Island, N. Y.

BB024 1102

PYROBAR GYPSUM PARTITION AND FURRING TILE

Well known to architects and engineers, Pyrobar Gypsum Partition and Furring Tiles were the first structural applications of gypsum to building constructions. They are used for the construction of fireproof, non-bearing interior partitions, for furring, elevator and stairway enclosures, and for fireproofing structural steel columns, and girders.

They are machine-made and moulded with extreme accuracy into units 12 in. high and 30 in. long. Furring tile are made 1½ and 2 in. thick; partition tile are made solid in 2 and 3-in. thicknesses, and 3, 4, 5 and 6 in. thick in hollow designs. All tile are scored to receive plaster, except where specially ordered, when smooth surfaced tile can be obtained. Pyrobar Gypsum Partition Tile maintain all of the advantages inherent in gypsum, as a structural material, previously described. The large, light, easy to handle units, can be erected with greater speed than other materials used for similar purposes and, hence, produce labor savings which reduce costs. The straight, true and moulded tile can likewise be constructed into plane and true walls, saving plaster tonnages. Easily cut and fitted, there is no waste with Pyrobar Gypsum Partition Tile, as all of the pieces can be built into the wall.

SIZES AND WEIGHTS OF PYROBAR PARTITION AND FURRING TILE

Size of Pyrobar Gypsum Tile, In.	Recommended heights for each size	Weight tile per sq. ft., lb.	Weight mortar per sq. ft., lb.	Weight plaster, one side, per sq. ft., lb. ½ in. grounds	Total weight plastered, one side, per sq. ft., lb.	Weight plaster two sides per sq. ft., lb.	Total weight plastered, two sides, per sq. ft., lb.	Approx. mortar requirements per 1000 sq. ft.	
								Pounds Set Fast Cement	Cubic yards sand
1½-in. Split ....1½ x 12 x 30	Furring†	4.9	1.4	3	7.9			500	0.625
2-in. Split ....2 x 12 x 30	Furring†	6.4	1.4	3	9.4			600	0.75
3-in. Solid ....2 x 12 x 30	10 feet*	10.0	1.5	3	13.0	6	16.0	600	0.75
3-in. Hollow ....3 x 12 x 30	13 feet*	10.0	2.0	3	13.0	6	16.0	800	1.00
3-in. Solid ....3 x 12 x 30	15 feet†	13.0	2.0	3	16.0	6	19.0	800	1.00
4-in. Hollow ....4 x 12 x 30	17 feet*	13.0	2.5	3	16.0	6	19.0	900	1.25
5-in. Hollow.....5 x 12 x 30	20 feet*	17.2	2.75	3	20.2	6	23.2	1000	1.25
6-in. Hollow.....6 x 12 x 30	30 feet*	19.0	3.0	3	22.0	6	25.0	1100	1.40

*Underwriters' Laboratories recommendations. †No Underwriters' recommendation.

PYROBAR BEAM AND GIRDER FIREPROOFING

Pyrobar Partition Tile used in conjunction with Pyrobar Gypsum Shoe Tile and Soffit Tile provide a complete fireproofing system, in which the architect and engineer will find all of the unique qualities of gypsum as a fireproofing material at his disposal. The full cost reduction provided by the use of gypsum fireproofing can only be obtained if the supporting steel is specifically designed to hold the lighter loads imposed by the lighter fireproofing, although the low cost of the tile and the ease with which they are erected will usually permit competitive prices when the steel has been designed for heavier material.

In this system, partitions and dividing walls are constructed of Pyrobar Gypsum Tile, the columns fireproofed with the same material. The soffits of the beams with the special tile described below, and the beam sides, are protected by Pyrobar Partition Tile of the proper thickness to provide the desired protection.

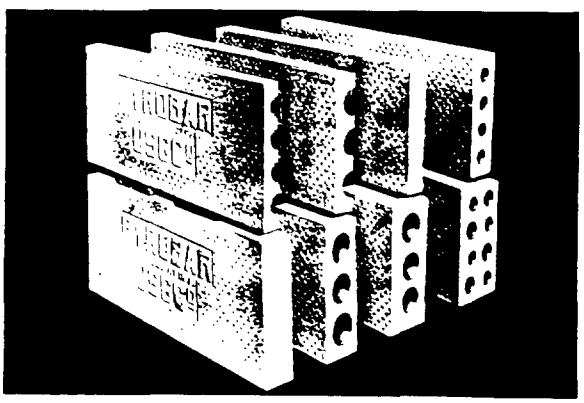
For small steel beams, Pyrobar Gypsum Shoe Tile, which are made for beams having flange widths up to 9 in., are the most economical type. Where the beam flanges are greater than 9 in., Pyrobar Gypsum Strap type Soffit Tile are used.

Pyrobar Gypsum Soffit Tile are adapted to flange widths from 3 to 17½ in. and are applied to built-up girder sections or standard rolled sections. They are particularly desirable from the standpoint of appearance where the fireproofing is not to be plastered.

All gypsum constructions are ideal bases for plaster. This is particularly advantageous in connection with gypsum fireproofing, as most of the fireproofing used in steel buildings is eventually plastered. It should likewise be remembered that the smooth, true surfaces produced by tile which are cast in a form, produce equally smooth and true walls, which save considerable tonnages of plaster.



Laying Pyrobar Partition Tile



Furring, Solid and Hollow Pyrobar Partition Tile

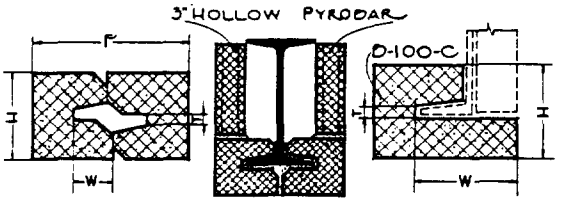
BB024 1102

BB024 1103



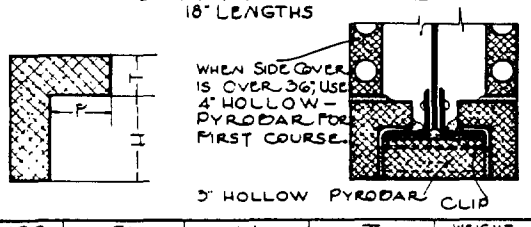
Pyrobar Beam and Girder Fireproofing Used in New Chicago Post Office—Graham, Anderson, Probst and White, Architects

· PYRODAR SHOE TILE ·
· 18" LENGTHS ·



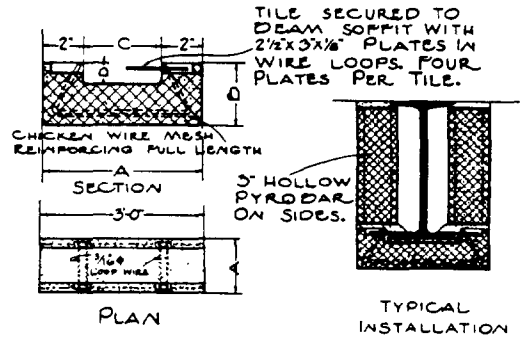
TYPE	MAX. WIDTH OF FLANGE	F	H	T	W	WEIGHT PER LIN. FT.
D-40	5"	7⅜"	4¼"	½"	2"	12.5 LBS.
D-50	6"	8⅛"	4¼"	⅝"	2½"	13 "
D-65	7½"	9¾"	4¼"	13/16"	3⅛"	15 "
D-80	9"	10½"	4¼"	15/16"	4"	16 "
D-100-C CHANNELS			4½"	½"	4⅜"	10 "

· PYRODAR ANGLE TILE ·
18" LENGTHS



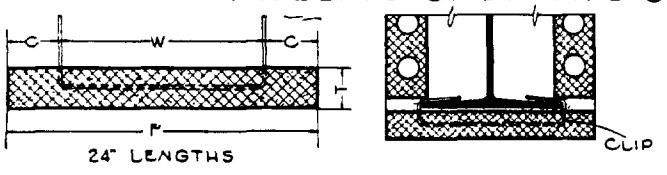
TYPE	F	H	T	WEIGHT PER LIN. FT.
L-34	3"	4"	2"	15 LBS.
L-45	4"	5"	2"	18.5 "
L-46	4"	6"	2"	20 "

· PYRODAR SOFFIT TILE ·



TYPE	A	B	C	D	WEIGHT PER LIN. FT. OF FLANGE	MAX. WIDTH OF FLANGE
D-30-S	7¼"	3"	3¼"	1"	8 LBS.	3"
D-40-S	8¼"	3¼"	4¼"	1¼"	9 "	4"
D-50-S	9¼"	3¼"	5¼"	1¼"	10 "	5"
D-60-S	10¼"	3¼"	6¼"	1¼"	11 "	6"
D-70-S	11¼"	3½"	7¼"	1½"	12 "	7"
D-80-S	12¼"	3½"	8¼"	1½"	13 "	8"
D-90-S	13¼"	3½"	9¼"	1½"	14 "	9"
D-100-S	14¼"	3⅝"	10¼"	1¾"	15 "	10"
D-115-S	15¾"	3⅝"	11⅝"	1¾"	16 "	11½"
D-130-S	17¼"	3⅝"	13¼"	1¾"	17½ "	13"
D-145-S	18¾"	4"	14¾"	2 "	19 "	14½"
D-160-S	20¼"	4"	16¼"	2 "	20½"	16"
D-175-S	21¾"	4"	17¾"	2 "	22 "	17½"

· PYRODAR STRAP TYPE SOFFIT TILE ·



TYPE	F	C	T	W	WEIGHT PER LIN. FT.
S-10	15¼"	2½"	2"	10"	13 LBS.
S-11	15¼"	2"	2"	11"	13 "
S-12	17¼"	2½"	2"	12"	14.5 "
S-13	17¼"	2"	2"	13"	14.5 "
S-14	19¼"	2½"	2"	14"	16 "
S-15	19¼"	2"	2"	15"	16 "

BB024 1104

USG STEEL ROOF DECK

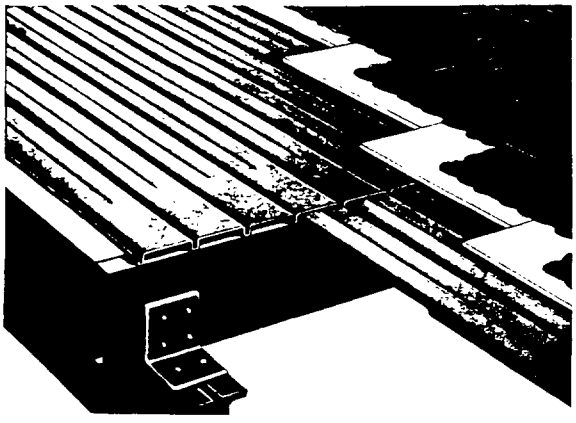
GENERAL—

Deck Plates—USG deck plates are rolled from copper-bearing steel. Mill painted in gray. Other materials on special order. USG Deck Plates are 18 in. wide with 1½ in. deep reinforcing ribs, 6 in. on centers. Stiffening beads are formed midway between the ribs. Decks plates are interlocking and end-lapping type, clipped together when erected, forming an integral surface for the application of insulation and roofing materials.

Clips—Two standard types. One for fastening the deck plates to the purlins and the other for locking the plates together between the purlins.

INSULATION—The accompanying table gives the heat transmission expressed in B.t.u. per hour per sq. ft. per degree difference in temperature. Five-ply roofing is included.

Deck without insulation	.35 B.t.u.'s
Deck with ½-in. insulation	.39 B.t.u.'s
Deck with 1-in. insulation	.25 B.t.u.'s
Deck with 1½-in. insulation	.18 B.t.u.'s



Above: Details of USG Steel Roof Deck. At Right: Dimensional Cross-Section of USG Steel Roof Deck

ADAPTABILITY—USG Steel Roof Decks are adaptable for all steel frame structures, fitting any purlin spacing.

ENGINEERING DATA—The allowable safe loads given in the table below are based on actual tests on bare plates. Application of insulation gives additional rigidity to the deck.

ALLOWABLE SAFE LIVE LOADS—POUNDS PER SQ. FT.

U.S.S. Ga.	Clear Span									
	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"
22	83	66	53	44	37					
20			81	67	56	48	41			
18					71	60	52	45	39	35

Factor of safety for 22 and 20 Gauge—4
Factor of safety for 18 Gauge—3.5.

Weight of 20 gauge deck is 2.4 lbs. per sq. ft., 18 gauge weighs 3.2 lbs. Total dead load, including insulation and roofing material, is approximately 5 lbs. per sq. ft.

ADVANTAGES—

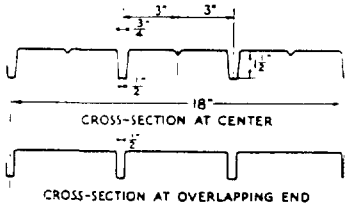
Long Life—The use of copper-bearing steel and insulation assures long life and low maintenance.

Economy—Cost is low for an incombustible roof deck.

(1) Structural Steel Savings result from light weight of roof unit.

(2) Fuel Costs are reduced through the use of insulation.

(3) Erection is rapid, due to simplicity of design and method of clipping. Saddles are made from deck plates and are easily placed. These features speed completion of the building and effect economies in construction.



CROSS-SECTION AT CENTER

CROSS-SECTION AT OVERLAPPING END

Results—Clean, sanitary and pleasing interior. Heat insulation value depends on the thickness and efficiency of the roof insulation board used.

Master Specifications

(A) GENERAL PROVISIONS

(1) WORK INCLUDED—List roof areas and the live loads on each; specify type of roof deck, **(1) Sheetrock-Pyrofill, (2) Weatherwood-Pyrofill, (3) Pyrobar-Gypsum Short Span Roof Tile, (4) Tongue and Groove Gypsum Roof Deck.**

(2) All gypsum products shall be as manufactured by the United States Gypsum Company.

(3) GYPSUM MORTAR shall be one part unfibered gypsum cement plaster and not over two parts clean, sharp sand by weight. Do not use Portland Cement or lime.

(4) END WALLS of skylights (monitors, sawteeth) curbs around openings under skylights, etc., shall be **(a)** constructed of 3-in. Pyrobar Gypsum Curb Tile, properly reinforced if load bearing, or **(b)** poured in place of Sheetrock-Pyrofill or Weatherwood-Pyrofill construction.

(5) DRAINAGE FILLS—All saddles, cants, crickets, and other drainage fills shall be poured in place on the roof deck of Pyrofill, to which clean water has been added to produce proper pouring consistency. **(See Section 7d in Sheetrock and Weatherwood-Pyrofill Specifications below.)**

(6) WATERPROOF ROOF COVERINGS

NOTE—*In roofing division, provide that waterproof roof coverings must be applied completely to gypsum roof decks within twenty days after deck is completed.*

(7) NAILING

NOTE—*Roof coverings of slate, tile, metal, etc., requiring nailing to roof should be provided for in accordance with the recommendations under "Nailing" on Pages 4 and 6 of this section.*

(B) SHEETROCK PYROFILL AND WEATHERWOOD PYROFILL

(8) MATERIALS

(8a) Sub-Purlins shall be size and type shown on plans.

(8b) Sheetrock or Weatherwood Forms shall be mill made 32 in. wide and of exact lengths to suit purlin spacings in lengths not to exceed 10 ft.

NOTE—*Specify thickness ½ or 1 in. of Weatherwood.*

(8c) Reinforcement—Steel reinforcement shall be galvanized electrically-welded steel fabric made to USG specifications, with No. 12 main longitudinal wires 4 in. on centers and No. 14 transverse wires 8 in. on centers, having an effective sectional area of not less than .026 square inches per foot width of slab.

(8d) Pyrofill—Pyrofill shall be as made by the United States Gypsum Company and consist of calcined gypsum with 12½ lb. of clean soft wood fiber to every 87½ lb. of calcined gypsum, properly mixed and bagged at the mill. Water alone shall be added on the job.

(9) ERECTION

(9a) General—All Sheetrock-Pyrofill and Weatherwood-Pyrofill Roof Constructions, including all sub-purlins, curbs, end walls, saddles, drainage fills, etc., shall be completely erected by the Engineering Sales Division of the United States Gypsum Company. Roof construction shall be **(specify)** inches thick, including the thickness of the Sheetrock or Weatherwood. Reinforcement shall be continuous throughout the slab. All roof surfaces shall be screeded smooth and true ready to receive the finished waterproof roof covering.

(10) PAINTING

NOTE—*If the underside of the slab is to be painted or otherwise decorated, such work should not be done until the waterproof roof covering has been applied and the slab is thoroughly dry.*

(C) PYROBAR GYPSUM SHORT SPAN ROOF TILE

(8) MATERIALS

(a) Short Span Tile—Where so designated, the roof slab shall be constructed of Pyrobar Short Span Roof Tile **(specify 3 x 12 x 30 in. Solid or Hollow or 4 x 12 x 30 in. Hollow)** accurately laid without mortar, upon the supporting steel with full bearing and with tile units laid tight. All joints on top surface shall be filled with gypsum mortar and the roof left smooth and true, ready for the application of the waterproof roof covering.

(8b) Sub-Purlins—All sub-purlins shall be of special United States Gypsum Company Bulb Tees, with a shop coat of light gray paint.

(9) ERECTION

(9a) By the United States Gypsum Company — All Pyrobar Precast Roof Tile Construction shall be completely erected by the Engineering Sales Division of the United States Gypsum Company or one of its authorized erectors.

(D) TONGUE AND GROOVE GYPSUM ROOF AND FLOOR TILE

(8) MATERIALS—The **(roof) (and) (floors)** shall consist of USG **(2½ in. x 10 in x 6 ft.) (3 in. x 12 in. x 10 ft. Channel Section) (Long Span 2 in. x 15 in. x 10 ft. Steel Bound) (Medium Span 2 in. x 15 in. x 8 ft. Steel Bound)** Tongue and Groove Gypsum Tile as manufactured by the United States Gypsum Company.

(9) ERECTION—All tile shall be set on supporting steel with close joints and with end joints staggered in adjacent rows starting alternate rows with fractional length tile. Each tile shall be anchored to the supporting steel at every point of support with clips alternating on opposite sides of the beam flanges. The tile shall be cut to fit around all openings and wherever required to fit the steel frame.

NOTE—*In the steel specifications, provide for proper framing to support the tile around all openings wider than 10 in., and that the tops of joists, purlins, etc., shall be set in one plane.*

(E) PYROBAR GYPSUM PARTITION AND FURRING TILE

(1) MATERIALS—All interior non-bearing partitions, wall furring and column covering shall be built of Pyrobar Gypsum Partition Tile of the thickness indicated on the plans.

(2) ERECTION

(2a) All partitions, furring and column covering shall be started on the fireproof floor and shall be set plumb, straight and true with vertical joints broken. Corners shall be built log cabin fashion, the tile interlocking. All tile shall be laid with flush joints, to a line, with horizontal beds uniformly level on each course. All joints, chinks and crevices between the tile and other work shall be filled with mortar well slushed in.

(2b) All partitions coming in contact with existing walls shall be anchored by driving spikes into the wall in the joints of each course.

(2c) Buck Anchors—Door bucks made of 2-in. lumber, of the same width as the thickness of the partition, shall be anchored to the partition by driving 10d cut nails into the buck at the joints of each course or secured by clips, wall ties, etc., as approved by the architect.

(3) Furring—Furring Tile shall be laid against the wall and securely anchored to it every square yard with 10d cut nails, metal ties, anchor straps or other approved fasteners left in place by the exterior masonry contractor.

(4) Lintels—Openings not greater than 22 in. wide shall be spanned with a single tile. Openings over 22 in. wide but not more than 4 ft., shall be spanned by tile laid in the form of a jack arch. Openings over 4 ft. but not more than 6 ft. shall be spanned by reinforced gypsum lintels. Openings over 6 ft. shall be spanned by steel lintels of approved design. All lintels must have a minimum 4-in. bearing at each end on the tile structure beneath them.

BB024 1106

SEC. F · SOUND CONTROL SERVICE

Engineering Sales Division

RESEARCH, DEVELOPMENT AND SERVICE

SCOPE—A complete service for architects covering all phases of the control of sound in buildings. Responsible engineering assistance of a high order—sound absorbents in a wide variety of absorption characteristics, appearance and price—sound insulation devices and systems to prevent objectionable transmission of unwanted sounds through walls, floors and ceilings—all installed under complete supervision by USG or its licensed applicators.

RESEARCH AND DEVELOPMENT—All USG sound control materials and systems are the result of directed research at the Building Materials Research Laboratories of the United States Gypsum Company. This Laboratory occupies an entire building in Chicago, with 20,000 sq. ft. of floor space especially equipped for research and testing. The research work is carried out under the direction of trained physicists, chemists, and architectural engineers—a personnel of some fifty individuals.

This Laboratory is one of the few owned and maintained by a manufacturer of acoustical products. It serves both in development of products and maintenance of the excellence physically and acoustically of the production of our acoustical materials plants.

ENGINEERING ASSISTANCE—The United States Gypsum Company maintains an experienced corps of acoustical engineers completely equipped to assist architects on any problems involving acoustical correction or sound insulation. They render this service without obligation in advance of building construction or will gladly advise corrective methods for existing buildings in which sound difficulties are experienced.

ACOUSTICAL MATERIALS ASSOCIATION—The absorption figures used in these pages are quoted from the Official Bulletin of the Association, copies of which may be obtained from any representative of the Engineering Sales Division.

ACOUSTONE

The Incombustible Acoustical Mineral Tile

ACOUSTONE is the culmination of a desire to combine high sound absorption with the maximum in decoration and ease of maintenance. For over ten years, it has been rendering such service in the better buildings of the United States and Canada. Unlike many sound absorbents, Acoustone announces its presence through its acoustical merits, not by any oddities in appearance. It may be harmoniously and unobtrusively included in the planned decorative scheme for any room or by reason of its wide decorative adaptability, it may be used to create the decorative note.

INCOMBUSTIBLE—Since it is made from specially processed mineral filaments, Acoustone is incombustible.

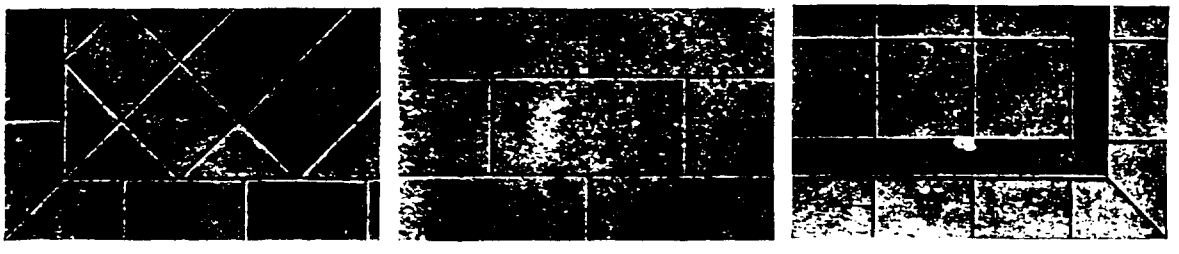
TEXTURE—A deeply recessed Travertine. No two tile are exactly alike in texture, since the texture is a natural concomitant of the manufacturing process and is not secured by moulding or stamping.

LIGHT REFLECTION—The true matte surface of Acoustone is highly light-reflective, particularly in the lighter shades.

COLOR—Integrally tinted throughout its substance, not dyed or painted, Acoustone is manufactured in white, ivory and cream. Other colors of richness and depth to match any decorative scheme are made to special order.

SIZES—Tiles are regularly made 12 in. x 12 in., 6 in. x 12 in. and 9 in. x 18 in., in $\frac{9}{16}$ in., $\frac{11}{16}$ in., $\frac{13}{16}$ in. or $\frac{15}{16}$ in. thicknesses.

Special sizes of Acoustone are made to order. Consult the United States Gypsum Company before specifying specials.



Typical Acoustone Patterns. Acoustone May Be Obtained on Order, Integrally Colored to Special Shades

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SANITARY—Acoustone provides complete sanitation. Inorganic, it contains nothing to support life, supplies no nesting material. Readily cleaned and kept in an aseptic condition. The ideal hospital sound absorbent, Acoustone is equally desirable for any structure.

MAINTENANCE AND COSTS — Acoustone is quickly and effectively cleaned with a simple vacuum cleaner. The soiled surface is removed by the cleaning operation, restoring the original appearance in all of its beauty of texture and color. Acoustone does not cost twice as much as sound absorbents which must be painted to keep them fresh but if it did, the first cost plus upkeep, for Acoustone, would still be less. Acoustone may be painted if desired without impairing its absorption.

JOINTS—Tile may be had with a ⅛-in. bevel or with square shoulders. The tile are so accurately formed and may be so exactly fitted and cut that ceilings are possible in which the joints between tiles are scarcely discernible. (See right hand illustration below.)

PATTERNS—Using either standard or special sizes and colors, Acoustone may be installed on appropriate surfaces in patterns of great beauty.

ABSORPTION—The figures are quoted from the Official Bulletin of the Acoustical Materials Association.

Pitch	C2	C3	C4	C5	C6	Noise Red. Coef.
Frequency	128	256	512	1024	2048	
ACOUSTONE "D"						
½-in. Thick	.06	.16	.61	.90	.82	.60
¾-in. Thick	.08	.22	.73	.91	.81	.65
1½-in. Thick	.15	.26	.79	.92	.85	.70
1⅝-in. Thick	.20	.40	.84	.88	.85	.75
ACOUSTONE "F"*						
½-in. Thick	.11	.12	.44	.89	.90	.60
¾-in. Thick	.14	.17	.65	.93	.87	.65
1½-in. Thick	.14	.26	.81	.88	.85	.70
1⅝-in. Thick	.16	.31	.87	.92	.83	.75

*Acoustone "F" has a more open texture than Acoustone "D."

ACOUSTONE—SPECIFICATIONS

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Acoustone. If more than one thickness of Tile is used, specify the thickness for the various areas.*

(2) BASE

NOTE—*Describe base.*

(a) On new work, a good level brown coat of plaster offers the best base for Acoustone.

(b) Acoustone may be applied direct to any clean level surface strong enough to support it.

(3) ACOUSTICAL MATERIAL

(3a) Acoustical treatment material shall be [¾-*in.*] [*1-in.*] thick Acoustone of colors selected by the architect.

(3b) Joints between Tiles shall be [*a V formed by accurately beveling the tile edges*] [*as detailed*] [*specify*].

(3c) Tiles on walls and fields of ceilings shall be of size, shape, disposition and color as shown on the various details and approved shop drawings.

(4) APPLICATION OF ACOUSTONE

(4a) Acoustone shall be completely erected by the UNITED STATES GYPSUM COMPANY or one of its authorized erectors of sizes, colors and pattern shown on the drawings and details.

(4b) Acoustone shall be laid close, accurately cemented in position in full conformance with the manufacturer's specifications.

SHORT FORM

The contractor shall allow the sum of $.....to cover the cost of acoustical treatment, using Acoustone to be furnished and erected by the United States Gypsum Company or one of its authorized erectors as directed and approved by the architect.



Acoustone Ceiling in Office of Banker's Trust Co., New York



Acoustone with Flush Joints, Stouffers Restaurant, New York

BB024 1108

QUIETONE

The Low Cost Acoustical Tile

DESCRIPTION—Specially made by simultaneous felting of selected wood fibers to produce a structure in which the sound absorbing pores run continuously and tortuously from face to back. It must not be confused with factory run insulation board felted in stages to produce a disconnected porosity of small acoustical utility. The porosity of Quietone is uniform and the surface openings to the sound absorbing structure are fine and inconspicuous. Its attractive surface is free from disconcerting oddities and patterned puncturing.

HIGH ABSORPTION—Because of the unusually uniform high absorption from normal voice frequencies up through the higher pitched noise frequencies, Quietone is particulary useful for quieting noisy rooms.

TABLE OF ABSORPTION—From the official bulletin of the Acoustical Materials Manufacturers Association.

Quietone Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Reduction Coefficient
1-in	30	.52	73	.82	75	.70

Absorption Coefficients are based on cemented to plaster mountings

COLORS AND TEXTURES—Quietone is manufactured in two textures: Natural ivory colored smooth sanded surface; and a natural mottled light bluff colored "brushed" surface, completely free from pattern. Quietone may be obtained on special order with the surface fibers deeply tinted at the mill in light pastel shades of rose, cream, buff or green, all of generally high light reflection ability.

CLEANING AND MAINTENANCE—Quietone may be spray painted with Lithopone or Titanox paints reduced with mineral spirits. It is best cleaned with a vacuum cleaner which removes the soiled surface. The mill tinting is sufficiently deep to withstand several cleanings before retinting is necessary.

SIZE—Quietone is made in tile-like units, 12 in. x 12 in. x 1 in. with a $\frac{3}{16}$-in. bevel on the exposed edge. Other sizes may be had on special order at a slight increase in cost.

COST—Inexpensive installation, low material cost and high sound absorption meet in Quietone to produce an unusually low cost per unit of absorption. Quietone is recommended where economy is a necessity and where a high degree of fire resistance is not required.

QUIETONE—SPECIFICATIONS

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List here all walls and ceilings to be covered with Quietone. If more than one texture or color of material is to be used, list each separately for the various areas.*



Geo. Washington High School, Alexandria, Va.

(2) BASE

NOTE—*Describe base.*

(a) *On new work, a good level brown coat of plaster offers the best base for Quietone.*

(b) *Quietone may be applied direct to any clean level surface strong enough to support it.*

(3) ACOUSTICAL MATERIAL

(3a) Acoustical material shall be Quietone in [*a natural color*] [*mill tinted in standard shades*] [*cream*] [*green*] [*rose*] [*buff*] [*blue*] and [*sanded*] [*brushed*] surface.

(3b) Tile shall in general be 1 in. thick by 12 in. x 12 in. with special sizes as shown on the various details.

(3c) Joints between tile shall be a $\frac{1}{8}$-in. "V" formed by accurate beveling.

(4) APPLICATION OF QUIETONE

NOTE—*Quietone may be applied in a diagonal or a straight pattern with a border effect if desired. Other patterns may be worked out but they will require special tile sizes*

(4a) Quietone shall be completely erected by the United States Gypsum Company or by one of its authorized erectors.

(4b) The tile shall be cemented or cemented and nailed in position, care being taken to align tile and maintain an even surface in full conformance with the manufacturer's specifications.

PERFATONE

Perforated Metal Acoustical Tile

DESCRIPTION—Perfatone is a perforated metal tile concealing highly absorbent pads of mineral wool. The edges of the tile are beveled and returned vertically to be held firmly in place by special tee runners. The durable tile are enameled to comply with rigid specifications and to give a finish pleasing in color and exceptionally high in light reflection.

The mineral wool pads are furnished completely wrapped either in a flame-proof membrane or a flame-proof membrane covered with flame-proof muslin. Either type of pad eliminates the so-called breathing action and avoids the accumulation of dirt on the surface which would result in an undesirable condition from the standpoint of sanitation.

COLOR AND FINISH—Perfatone is finished in baked enamel. It is made in two standard colors, ivory and white. Both have high light reflection.

SIZES—Made in units 12 in. x 24 in. with a center groove which gives the effect of 12 in. x 12-in. units.

ADVANTAGES—

Fireproof—The metal tile and the mineral wool pads are entirely incombustible. The pad wrapping is all flame-proofed and fire resistive.

High Efficiency—The table at right, above, shows the extremely high absorption of Perfatone.

Washable—The enameled metal surface of Perfatone may be washed many times before it becomes necessary to repaint it. Washing in no way affects the absorption efficiency of the tile or its appearance.

Paintable—Perfatone can be repainted many times without affecting the absorption efficiency of the construction. The perforations form but 14% of the total tile surface, and although small enough to blend into the neutral color of the tile, they are still large enough to maintain full absorption efficiency unaffected by many paintings.

ABSORPTION—In addition to being the highest type of acoustical treatment from a construction standpoint, Perfatone is also one of the best from the standpoint of absorption efficiency. Its absorption coefficients present a fairly flat curve at the significant pitches, meaning more than average uniformity through the most important sound frequencies. Cofficients below are by the Official Laboratories of the Acoustical Materials Association.

Perfatone Type	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Red. Coef.
Paper Wrap Pad (Type B Pad)	19	61	.98	.99	.82	85
Paper Wrapped Muslin Cov. Pad (Type C Pad)	.24	65	.93	.98	.79	85

Mounting: Metal supports applied to 1x2-in. wood furring

PERFABOARD AND PERFABESTOS

When sound absorbent materials must be exposed to possible abrasion and wear on the walls in small rooms, perforated hardboard or perforated asbestos board may be used as successful wear resisting materials for the protection of pads of absorbent material placed under them in similar fashion to the metal protection given such pads by Perfatone. Data on these special products is available from any Engineering Sales Division representative.

PERFATONE—SPECIFICATIONS

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Perfatone.*

(2) BASE

(2a) Where suspended ceiling construction is used, the necessary channel grillage shall be furnished and placed by the acoustical contractor.

(2b) Where Perfatone construction is to be held against concrete joist construction, wire ties shall be furnished in place by others on not more than 4-ft. centers along all joist bottoms. These ties shall consist of two No. 10 gauge galvanized wire projecting 6 in. below joist bottom. The ties must be carefully lined up in lines at right angles to the joists.

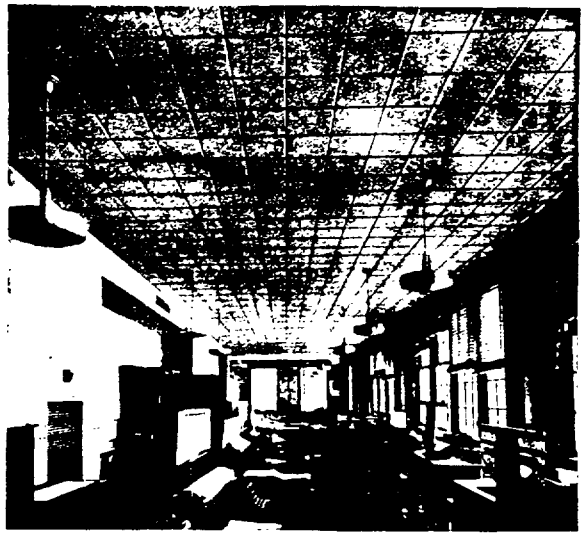
(3) ACOUSTICAL TREATMENT MATERIAL

Acoustical treatment material shall be Perfatone held firmly in place by special tee runners. The perforated metal tile shall conceal a mineral wool absorbent pad held slightly away from the perforated metal surface by means of a pad support. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proof membrane. (Or the absorbent pad shall be completely wrapped in flame-proof muslin and the top sealed during erection with flame-proof membrane.)

The perforated metal tile shall have a prime and finish coat of baked enamel on the back, and on the face a prime coat, an intermediate coat, and a finish coat of baked enamel

(4) APPLICATION OF PERFATONE

(4a) Suspended Ceiling Construction—The acoustical contractor shall fasten the special tee runners to the under-surface



Office of A. C. Nielsen Co., Evanston, Ill.

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of the carrier channels, on 24-in. centers to hold the perforated metal tile. Perforated metal tile, pad supports, and absorbent pad shall be carefully assembled and pressed into position on the special tee runner. All edges shall be kept in alignment and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by [*the acoustical contractor*] [*others*] at the junction of the perforated tile ceiling with the walls and columns. Care shall be taken in cutting and fitting the tile around all openings.

(4b) Plastered Ceiling Construction—

NOTE—*Same as in (4a) except that the special tee runners shall be attached to the present ceiling by means of suitable clips or wire and brought to a level surface*

SABINITE ACOUSTICAL PLASTER

Fireproof—Lowest Cost

SABINITE ACOUSTICAL PLASTER combines all of the desirable qualities of a standard plaster finish with effective, permanent, sound absorption. By the simple substitution during construction of proper areas of Sabinite for the usual plaster finish, full acoustical correction can be secured at much lower costs than those entailed by the application of sound absorbents over the plaster after a building has been completed.

COMPOSITION—Sabinite acoustical plaster is composed of a mixture of lightweight aggregate, special ingredients and either gypsum plaster or Portland cement so proportioned that a porous sound absorbent structure is produced when the material is applied to brown coat plaster with the ordinary tools of the plasterer.

APPEARANCE—Sabinite acoustical plaster is regularly manufactured in white and four standard pastel shades—Ecru, Ivory, Cream and Buff. It presents an interesting surface texture somewhat like a heavy sand float finish. It is finished with a cork float or trowel.

VARIETIES—Three varieties are made — regular Sabinite for use over gypsum plaster base coats, Casting Sabinite, and Sabinite No. 38 for application over Portland cement base coats or Oriental Exterior Stucco base coats. Sabinite No. 38 is designed for use in damp locations, such as swimming pools, where a plaster of very high humidity resistance is needed.

ABSORPTION—The tiny tortuous passages which proceed from the surface of Sabinite form a veritable labyrinth in which sound forces are converted into heat through friction and impact. Sabinite is usually applied in two ¼-in. coats but a useful increase in the absorption may be obtained by increasing the total thickness from ½ in. to ¾ in. by applying the Sabinite in three ¼-in. coats.

The coefficients of sound absorption in the table below are from the bulletin of the Acoustical Materials Association.

Sabinite Type	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Red. Coef
A	½ in.	.34	.30	.31	61	69	50
A	¾ in.	.36	.37	.55	.67	.67	.55
38	½ in.	.25	.26	.32	60	.76	50

COLOR—Both regular Sabinite and No. 38 are furnished in white or any of the four standard tints—Ecru, Ivory, Cream or Buff.

Sabinite may be tinted or painted after application without loss of acoustical efficiency under special direction.

TIME TESTED—Sabinite acoustical plaster was one of the first fireproof acoustical materials. It has been serving architects for over fifteen years, increasing in popularity each year. There has, likewise, been constant improvement in absorption and application plasticity.

SANITARY—Containing no vegetable or animal matter, Sabinite is permanently sanitary and vermin-proof.

APPLICATION AND SUPERVISION — Water alone is added to Sabinite to make it ready for application by the plastering contractor. Its installation is supervised by an experienced representative of the manufacturer.

SABINITE—SPECIFICATIONS

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sabinite Acoustical Plaster. If Sabinite A, No. 38, and casting Sabinite are used, list and locate separately. If different colors of integrally tinted Sabinite are used, specify the colors for the various areas.*

(2) GROUNDS

On walls, in addition to the usual grounds set for the scratch and brown coat plaster base, set additional [½-*in.*] [¾-*in*] thick grounds to assure proper thickness of the Sabinite and form nailing for wood trim, etc. All corner beads shall be set to conform to the increased plaster thickness.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) *Acoustical Treatment material shall be (Sabinite A) (Sabinite 38)* [*and*] [*Casting Sabinite*] Acoustical Plaster as manufactured by the United States Gypsum Company.

(3b) Sabinite shall be integrally tinted by the manufacturer at the mill.

NOTE—*Integrally tinted Sabinite should be a shade lighter than the same color would be in paint because the texture of Sabinite casts a slight darkening shadow.*

(4) SCRATCH AND BROWN COAT BASE

(4a) Sabinite for General Use—All surfaces to receive Sabinite A shall be given scratch and brown coats of gypsum plaster containing no more than two parts of sand (by wt.) to one part of plaster.

(4b) Sabinite No. 38—Hydraulic Sabinite shall be applied over Oriental Exterior Stucco base coat.

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NOTE—*Oriental Exterior Stucco Base Coat is a prepared material requiring no sand or other addition except water. It is applied in two coats in place of the regular scratch and brown coats. Use where humidity is severe.*

(4c) The scratch coat shall be thoroughly broomed before the second or brown coat is applied. The second or brown coat shall be deeply raked after straightening.

(5) APPLICATION OF SABINITE

(5a) The application of Sabinite shall only be made under the supervision of the United States Gypsum Company

The plastering contractor shall arrange with the nearest sales office of the United States Gypsum Company for the servicing of Sabinite and shall not commence its application until so directed by the manufacturer's service representative.

Sabinite shall be applied in [*two*] [*three*] coats each ¼ in. thick over a thoroughly dry base coat. The second [*and third*] coat[*s*] shall not be applied until the previous coat has set. The instructions of the service representative for floating and troweling each coat shall be observed throughout regardless of his presence.

(5b) Casting Sabinite—A fairly dry mix is used and pressed in a mold to a thickness of about ½ in. and backed with molding plaster and fiber—the procedure is the same as for ordinary cast plaster work. Cast Sabinite shall be attached in the same manner as ordinary cast plaster work.

(6) PAINTING SABINITE

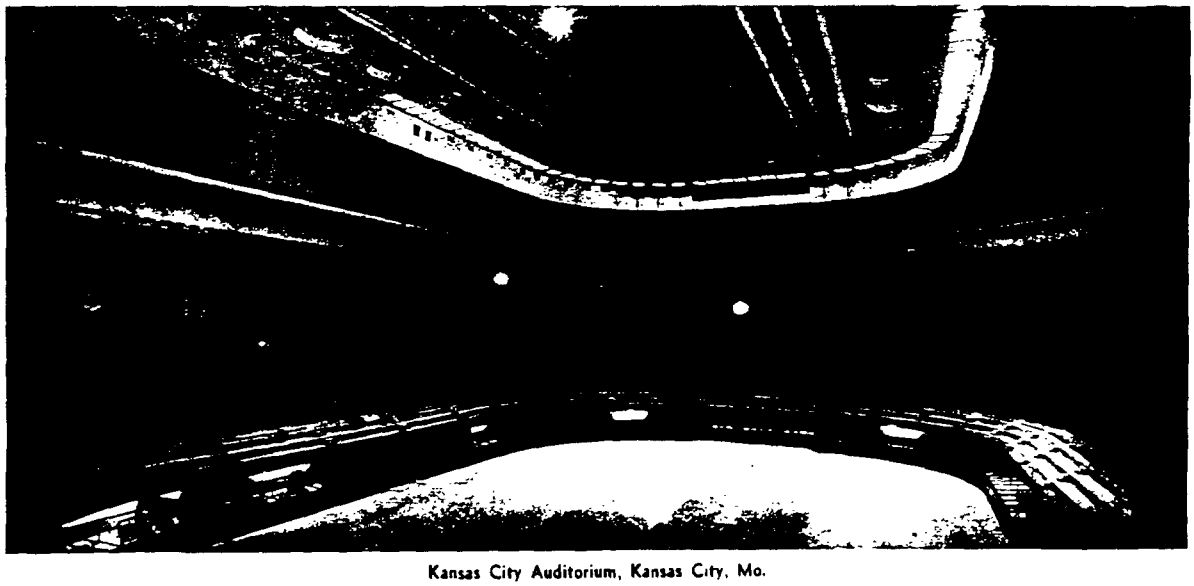
Spray Painting—Sabinite may be spray painted. Depending on the conditions and the effects desired the United States Gypsum Company will make definite recommendations as to the paint or spraying lacquer to be used, the type of spraying equipment best adapted to the conditions and application specifications.

SOUND INSULATION

Protection against unwanted sound (noise) when the noise originates within the room, where quiet is desired, is best obtained by the liberal use of tested sound absorbents (see Acoustone, Quietone, Perfatile, and Sabinite on previous pages), but when the sound is created without the room and enters it through the structure, sound absorbents are of little value.

To freely quote a well known acoustical authority, the problem of sound insulation is much more the province of experienced engineering than the application of any sound insulating device, construction or material. Without competent engineering advice, sound insulation constructions, however carefully installed, rarely solve sound insulation problems, yet without such devices the sound engineer is helpless. The ability of massive masonry to bar sound and vibration through sheer inertia is well known, but present day economics generally forbid its use. Such special constructions as the USG System of Sound Insulation for partitions, floors and ceilings and the Trem-bar Machinery Base come to the engineer's rescue and make it perfectly possible to secure a high degree of sound insulation which is very effective.

Because of the necessity for full consideration of all of the avenues through which sound can enter a room or structure, the United States Gypsum Company recommends that its acoustical engineering staff be consulted with regard to the proper use of USG Acoustical Products.



Kansas City Auditorium, Kansas City, Mo.

GENTRY, VOSKAMP & NEVILLE, Architects. Sabinite Ceiling assures excellent bearing condition

BB024 1112

THE RED BOOK

UNITED STATES GYPSUM COMPANY
300 West Adams Street
Chicago, Illinois

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Samson Plaster Board Company
Sales Agents for United States Gypsum Company
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