

PLAINTIFF'S EXHIBIT

USG-1731

RED BOOK

Describing
the products
manufactured
by the
United States
Gypsum Co.

BB024 0060

BB024 0061

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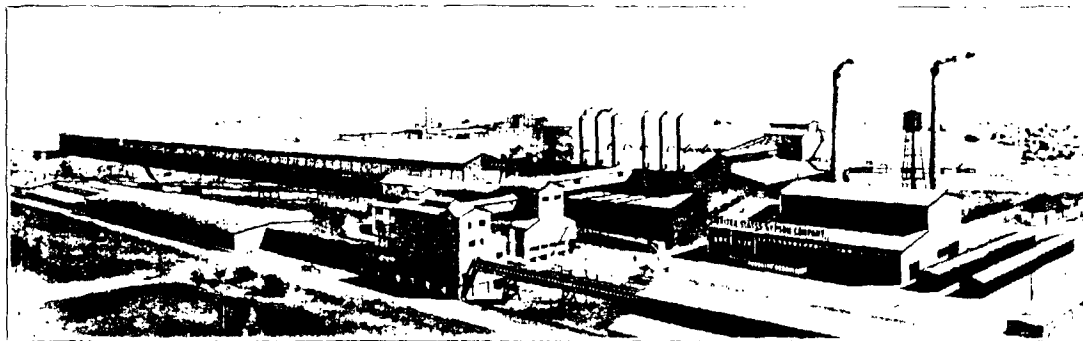
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PATENT DEPARTMENT

U. S. Gypsum Co.

Type of United States Gypsum Company Modern Mills

Largest, Most Perfectly Equipped Gypsum Plants in the World



OAKFIELD, N. Y., PLANT OF UNITED STATES GYPSUM COMPANY
Mills at All Principal Gypsum Deposits in the United States

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The Red Book

For the reference of
Architects
Contractors
Plasterers and
Dealers

1923 Edition
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United States Gypsum Company

General Offices
205 W. Monroe St., Chicago

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UNITED STATES GYPSUM COMPANY

*World's Largest Producers
of Gypsum Products*

GENERAL OFFICES

205 W. Monroe St., Chicago, Ill.

SALES OFFICES

New York, N. Y., Buffalo, N. Y., Boston,
Mass., Washington, D. C., Baltimore, Md.,
Philadelphia, Pa., Pittsburgh, Pa., Cleve-
land, Ohio, Cincinnati, Ohio, Detroit,
Mich., Milwaukee, Wis., Minneapolis,
Minn., St. Louis, Mo., Kansas City,
Mo., Omaha, Neb., Denver, Colo., Los
Angeles, Cal.

MINES AND MILLS

Oakfield, N. Y., Plasterco, Va., Cleveland,
Ohio, Gypsum, Ohio, Genoa, Ohio, Detroit,
Mich., Alabaster, Mich., Grand Rapids,
Mich., Milwaukee, Wis., Fort Dodge, Iowa,
Elue Rapids, Kan., Southard, Okla., Eldo-
rado, Okla., Piedmont, S. D., Loveland,
Colo., Denver, Colo., Arden, Nev.,
Amboy, Cal.

RB-1

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SUBJECT	INDEX TO CONTENTS	PAGE
Adamant Plaster.....		14
Adamant Plaster Board.....		38
Adamant Prepared Finishes.....		21
Advantages of Gypsum Plasters.....		7
Agricultural Gypsum.....		26
Aridize Plasters.....		23
Dental Plasters.....		25
Finishing Plasters (Prepared Gypsum).....		20
Fire-Proofing Specialties.....		53
Gauging Plasters (For use with lime putty).....		17
How to Avoid Plaster Troubles.....		28-31
HYDRATED LIME.....		
Finishing Lime.....		18
Masons' Hydrate.....		19
JESTER-SACKETT SYSTEMS.....		
Hollow Partitions.....		59
Solid Partitions.....		58
Suspended Ceilings.....		59
Keene's Cement.....		22
Moulding Plasters.....		24
Orthopedic Plaster.....		25
Plaster Boards (Sackett and Adamant).....		38-44
Plaster Boards instead of Wood Sheathing.....		51
PLASTERS, GYPSUM WALL.....		
Cement Plasters.....		10
Prepared (Sanded) Plasters.....		13
Syanize Plasters.....		8
Bondcrete Plaster (for use with concrete).....		16
Wood Fibre Plasters.....		11
Pottery Plaster.....		25
Pyrobar Beam and Column Protection.....		55
Pyrobar Floor Tile.....		62
Pyrobar Insulating Tile.....		71
Pyrobar Partition Tile.....		54
Pyrobar Roof Tile.....		64-66
Pyrofill Monolithic Floors and Roofs.....		68
Sackett Plaster Board.....		38
Sackett Reinforced System.....		43
Sackett Soffit Ceilings.....		61
Sackett Sound Deadening for Floors.....		42
Sheetrock.....		45-50
Sheetrock Finisher.....		49
SPECIFICATIONS.....		
Finishing and Gauging Plasters.....		36-37
Jester-Sackett Systems.....		60
Plaster Boards.....		40
Pyrobar Beam and Column Protection.....		57
Pyrobar Floor Tile.....		63
Pyrobar Partition Tile.....		56
Pyrobar Roof Tile.....		67
Pyrofill Monolithic Floors and Roofs.....		69
Wall Plasters.....		32-35
WALL MEASUREMENT TABLES.....		72-82

FOREWORD

A THOROUGH knowledge of the physical and chemical properties, proper uses, and correct application of any building material is essential for securing the best results. Very frequently a good material is condemned because the lack of this knowledge has produced mediocre results.

This Red Book has been prepared to enable you to obtain the maximum results from the use of gypsum products. The information given has been carefully compiled and condensed from data gathered through years of exhaustive study and research. It is given to you in a handy form to occupy a small space in your pocket or on your desk.

The United States Gypsum Company has a complete line of gypsum products embracing wall plasters for scratch, brown, and finish coats for use on every kind of plastering base; industrial plasters; agricultural or land plasters; roof, floor, and partition tile; plasterboards; and wall boards. (See index on preceding page.) If you have need for any gypsum product not listed or described in this book, write us.

United States Gypsum Company materials are made as scientifically and perfectly as is possible after more than twenty years of determination to produce the best gypsum materials in the world. If this booklet conveys to you an accurate knowledge of the use and possibilities of these materials and enables you to obtain better results, it will have fulfilled its purpose.

UNITED STATES GYPSUM COMPANY

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SUPERIOR PRODUCTS



A Corner in one of our Mines

THE superiority of our products is based upon pure raw materials, perfected processes of manufacture and one control from mining to shipping.

Our gypsum mines are conceded to be the purest deposits of gypsum rock in the world. The illustration shows a small room in one of these mines.

The United States Gypsum Company is a pioneer in the gypsum industry in America. For more than twenty years, this 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 perfected to meet fully these requirements.

Your Guarantee

Products bearing the trademarks 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 measure of perfection means rejection.

This rigid maintenance of quality has been recognized by the trade to such a degree that the United States Gypsum Company has become the largest producer of gypsum products in the world.

What Hard Wall Plasters Are

HARD wall plasters are made by driving off the water of crystallization from gypsum rock. This basic product forms a plastic mass on the addition of water, unites with the same amount of water driven off during calcination, is applied to the wall, and crystallizes, reverting to its rock state.

Gypsum wall plasters have practically supplanted lime for plastering purposes because lime requires several months to harden and years to attain its full strength. Unless lime is properly hydrated and applied, it never develops the strength necessary for durability. During this period of hardening, lime plaster is giving off water in exchange for carbon gases absorbed from the air. Until it is entirely hardened the building is damp and unsanitary.

Conditions of this kind are impossible with gypsum wall plaster. It sets up uniformly hard and homogeneous within two or three hours after application. Inside of thirty-six hours the walls are dry and there is no further dampness or sweating as with lime mortars. The building is immediately habitable from a hygienic standpoint.

These are the particular features, although there are a host of other advantages resulting from them, which make our gypsum plasters so different from and so much better than the old fashioned lime and sand plasters.

United States Gypsum Company plasters cover the interior walls of the building with a closely knit crystallized body—rock gypsum—that resists fire and is many times harder and stronger than a lime wall.

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Advantages of Gypsum Wall Plaster



GYPSUM wall plaster adheres equally well to wood or metal lath, Sackett Plaster Board, Pyrobar Tile, clay tile, brick or other plastering surfaces.

It sets in two or three hours, permitting the carpenters to follow the plasterers without loss of time. Being made of pure gypsum it is a valuable fire resistant and does not expand and wreck itself loose from the surface as lime plaster does when subjected to fire. It will last as long as the building.

Its exceptional adhesiveness adds strength, and greatly increases the durability of the walls.

It will not crack of itself, shrink or stain.

Rats or vermin cannot penetrate it owing to its density and extraordinary hardness.

Its hard surface, durable and dense body afford an admirable foundation for the finish coat and wall decorations. Gypsum wall plaster will withstand the wear and tear of occupancy.

It resists leakage from water pipes or imperfect roofs.

Its use increases the rigidity of the building, reinforcing outside strength with inside strength.

It costs no more than three-coat lime work, and is vastly better in every way.

Its use saves weeks in the time necessary to plaster a building.

It is plastic, works smoothly, and can be applied by any competent mechanic.

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SYANIZE PLASTER



UNITED States Gypsum Company plasters have long been famous for their richness and easy spreading qualities. They excel in hardness and density of wall. The patented process of manufacturing Syanize Plaster has added the one important quality of retaining sand carrying capacity.

Syanize Plaster is the result of years of research and experimental work by the United States Gypsum Company's laboratories to develop a plaster that would remain fresh indefinitely.

Syanize Plaster is not a mixture; it is made of pure gypsum rock. Its unique qualities are the result of a new and revolutionary process of treating gypsum, which is controlled by the United States Gypsum Company.

Syanize Plaster possesses the following distinctive advantages:

Carries the regulation quantity of sand even when stored for a year.

Easy to apply—spreads easily and quickly—works cool.

Easy to mix—will not stick to box or tools.

Economical—reduces the amount of droppings.

Pleases the workman because of its remarkable richness and "slip."

Makes hard, dense walls that will not stain any decoration.

Syanize Plaster remains fresh through the season. Instead of losing materially in sand carrying capacity

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each month while in storage and working "short," it retains its rich, easy spreading qualities, and continues to carry full measure of sand even when stored for a year.

Because of the new process, Syanize Plaster can be brought to a rich mix quicker than other plasters, thus pleasing the mortar mixer. It is the easiest to apply of all plasters. It works cool and free from the trowel—is not sticky—and plasterers say that with it they can do better work and more profitable work.

Syanize Plaster has remarkable richness and "slip." It has a good body and spreads far. It eliminates waste, as there are very little droppings behind the lath, no matter what form of lath is used.

The walls are rock-hard, the keys having unusual firmness and strength. The plaster is equally advantageous when troweled smooth, when floated, or when mixed with lime-putty for a finish coat. Although necessitating no change in the plasterer's present methods of work, Syanize Plaster enables every plasterer to do more work in a day with less labor.

Standardized and manufactured under scientific supervision, Syanize Plaster has the same uniformity which characterizes all United States Gypsum Company products. Syanize Plaster, in actual use in large and small markets, has far surpassed all claims made for it. The United States Gypsum Company stands back of Syanize Plaster.

You can now have Syanize Gypsum Cement Plaster, Syanize Wood Fibre Plaster or Syanize Prepared Plaster. Syanize Plaster is the greatest achievement in the history of plaster manufacture. Make sure that your next job is done with Syanize Plaster.

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WOOD FIBRE PLASTERS



THESE plasters require the addition of water only to fit them for use. The sand is replaced by finely shredded wood fibre, uniformly distributed.

Brands

Alabaster	Imperial
Baker	Ivory
Big Four	*O. K.
Buckhorn	*Pyramid
*Eldorado	Syanize
Flint	Zenith
Granite	



Advantages

Wood fibre plasters avoid the handling of sand, the dangers of poor sand and oversanding, and consequent bad results.

Composed of pure gypsum and shredded wood fibre, they are of greater bulk, lighter, and make a wall about one-half the weight of sanded mortar.

Through the elimination of sand, the wall is made practically of pure gypsum, wood fibre serving as a reinforcement, making walls of great toughness and strength. These walls can be sawed into like wood and are especially adaptable to alterations.

Wood fibre plaster is superior to sanded plaster in fire resisting, insulating and sound deadening qualities.

*Gypsite plasters—popularly known as "dark plasters." The distinguishing features of gypsite are its long-keeping and easy-spreading qualities. Gypsite plasters are extensively used in the south and southwestern states, as they meet perfectly the climatic and building conditions of these sections.

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Wood Fibre Plasters—Cont.

It makes walls of greater density and durability.

Its flexible nature renders it more capable of withstanding vibrations and other strains imposed upon the building.

It is especially desirable for winter use.

Its very smooth and fatty nature give it easy spreading and excellent working qualities.

Because of these advantages, as well as the labor and time-saving feature which makes them nearly as economical in cost as cement plasters, our wood fibre plasters are rapidly gaining in popularity. In many markets they are used almost exclusively.

COVERING CAPACITY—(Refer to page 15.) Basis: Average quantity of above material required per 100 square yards of surface, mixed and applied according to standard specifications (see page 34).

Plastering Surface	Wood Lath	Metal Lath	Sackett P. Board	Brick and Clay Tile	Pyrobar Tile
No. 100-lb. sacks required	14 to 17 (Unsanded)	22 to 27 (Unsanded)	13 to 16 (Unsanded)	18 to 20 (Equal parts sand to be added.)	14 to 16 (Equal parts sand to be added.)

PACKAGE—Shipped in full weight 100-lb. cloth sacks or 80-lb. paper bags.

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PREPARED PLASTERS

(Sanded)



THESE plasters need only the addition of water to fit them for application. The ingredients; cement plaster, sand, etc., are machine mixed and automatically distributed with absolute uniformity.

Brands

*Adamant Ivory
Big Four Imperial Syanize

Advantages

With prepared plasters, there can be no "guesswork" mortar, no streaks of sand or spots of unevenness in setting up causing differences in the tensile strength of the wall. There is no danger of poor sand—nothing but sharp, clean, silica sand, properly graded, screened, and thoroughly dried. The proportions are exact too.



These are splendid cold weather plasters, solving the difficulties of plastering in winter. There is no worry about sand and no troubles arising from the use of frosty sand. They may be readily and quickly mixed inside the building—saving time and labor.

COVERING CAPACITY—(Refer to page 15.) Basis: Average quantity of above named material required per 100 sq. yards of surface, mixed and applied according to standard specifications (see page 35).

Plastering Surface	Wood Lath	Metal Lath	Sackett P. Board	Brick and Clay Tile	Pyrobar Tile
No. 100-lb. sacks required	22 to 24	45 to 50	20 to 22	35 to 40	25 to 28

PACKAGE—Shipped in full weight 100-lb. cloth sacks or 80-lb. paper bags.

*See following page.

A WORD ABOUT COVERING CAPACITY

THE covering capacity of United States Gypsum Company Cement, Wood Fibre, and Prepared (Sanded) Plaster is as great for each type of material as it is possible to attain.

Covering capacity necessarily depends upon conditions under which the plaster is applied, upon the mechanic, thickness of the grounds, kind and trueness of the plastering surface, spacing of lath, quality of sand, etc.

The covering capacity given in this Red Book in connection with each type of material, and for the various plastering surfaces, is based upon average conditions, and may be accordingly accepted as a safe basis for figuring the quantity of each class of material required according to our specifications as given on pages 32 to 35.

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BONDCRETE FOR CONCRETE

THIS plaster is specially prepared to meet the peculiar requirements of concrete which are materially different from those of any other plastering surface.

Bondcrete Plaster is so compounded that it counteracts the bond breaking effect of the surplus water expelled from concrete during crystallization and drying out. It adheres strongly to the concrete because of its cementitious qualities and because it maintains a practically unchanging volume during the process of setting and hardening.

Because of the thickness and density of a concrete wall, it requires many months for the wall to become thoroughly dry. During this drying out process, the moisture is expelled to the surface, and occasionally brings with it an efflorescence in the form of salts, frost-like in appearance. This efflorescence is deposited on the surface of the concrete, and destroys the bond between the concrete and the plaster. While no plaster could withstand a severe condition of this kind, Bondcrete Plaster has proved that it is the most reliable plaster available for concrete surfaces.

Bondcrete Plaster is dense, durable and fire resisting. It works well under the tools, and needs only water to fit it for use. Its adaptability for concrete surfaces has gained the favor of the Architect, Contractor and Builder.

Bondcrete should be finished with a light skim coat, using any of the gypsum finishes described on pages 20 and 21.

COVERING CAPACITY—14 to 16, 100-lb. sacks per 100 square yards, average conditions, mixed and applied according to standard specifications (see page 35).

PACKAGE—Shipped in 100-lb. cloth sacks or 80-lb. paper bags.

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GAUGING PLASTERS

Used with Lime Putty



THESE plasters are made of raw materials carefully selected from gypsum deposits unusually well suited for the manufacture of calcined plasters for this particular purpose. 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. These finishes are to be gauged with lime putty in the usual manner.



Brands

(SLOW SETTING)

Star (Pure White)
Challenge (Pure White)
Quality
Pearl (Oakfield Mill only)
Michigan "A"
Matchless (Loveland Mill only)

(QUICK SETTING)

Champion (Pure White)
Big Four
N. Y. C. Mills
O. K. (Loveland Mills only)



PACKAGE — Shipped in 100-lb. cloth sacks, 100-lb. paper-lined cloth sacks, 80-lb. paper bags and barrels of 250 lbs. gross—235 lbs. net weight.

NOTE:—United States Gypsum Company Ivory Hydrated Lime described on page 18 is recommended for use with these plasters. It is of the same high standard of quality as all of the gypsum products of this company.

See Specifications and Directions for Applying, Page 36

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IVORY HYDRATED LIME



THERE are today few users of lime who do not know the economy and convenience of using hydrated lime instead of lump lime. Besides saving all the time and trouble of slaking lime on the job, it is in every respect a more satisfactory and dependable material.

Ivory Hydrated Lime is specially prepared for finishing purposes. It possesses a rich plasticity that makes it spread easy and far. Due to the peculiar chemical composition of the Ohio dolomite from which it is made, Ivory Hydrate has a high water carrying capacity and "works fat." This "butter-like" spreading quality saves time and labor.



Characteristics

- A pure dolomite (magnesium) product.
- Uniformly burned and thoroughly hydrated.
- Uniform snowy whiteness.
- Freedom from foreign matter.
- Smooth, easy-working under the trowel.
- Exceptional covering capacity.
- Freedom from pops and pits.

Advantages

Ivory Hydrate keeps well in storage, stocks much better than ordinary lump lime and does not air slake. Its long keeping properties are an advantage to both the contractor and the dealer, allowing them to purchase in larger quantities with the assurance of having good material at all times. It stores safely. There would be no fire hazard if the material should come in contact with water during storage. You will find that Ivory Hydrate most satisfactorily meets all lime requirements.

COVERING CAPACITY depends upon the conditions under which material is applied, upon the mechanic and the trueness of the base coat. The average covering capacity of Ivory Hydrated Lime when applied as a lime putty finish is about four 50-lb. bags per 100 sq yds. It will spread as far, if not farther, than any other hydrated lime.

PACKAGE—Shipped in 50-lb. paper bags.

See Specifications for use with Gauging Plasters on Page 36

U. S. G. MASONS' HYDRATE

U. S. G. Masons' Hydrate is advantageous for the dealer to stock because it is not a fire hazard, and, properly warehoused, it will keep almost indefinitely without loss due to air slaking.

Builders prefer U. S. G. Masons' Hydrate because of its convenience, increased satisfaction and economy as compared to lump lime.

Being already slaked, it saves all the time and labor of screening and slaking lime on the job.

Slaked at the mill under ideal conditions, it obviates mistakes at the mortar box.

Uses of U. S. G. Masons' Hydrate

U. S. G. Masons' Hydrate may be used for almost any purpose for which lump lime was formerly used—and for each it gives better, quicker, and more economical results.

It has scores of agricultural, chemical and industrial uses. Its four most important construction uses are: In Portland Cement Mortars to add plasticity; in Concrete Mixtures to increase the flowability, lessen the danger of the sand and stone separating from the cement when pouring, and increase the density and water-tightness of the concrete; in Stucco it improves the working qualities, increases the water-tightness, and, by holding moisture during the hardening period, it reduces shrinkage and lessens the danger of check cracking; in Sand-Lime Brick Manufacture it serves as a bonding, whitening and strengthening agent.

Directions for Mixing

For Mortar or Stone or Brick Masonry, use one sack (50 lbs.) of U. S. G. Masons' Hydrate to every 100 lbs. of Portland Cement. This proportion is equal to about 43 lbs. of U. S. G. Masons' Hydrate to a 94-lb. sack of Portland Cement.

For adding waterproofing qualities to concrete, the following quantities of U. S. G. Masons' Hydrate are recommended for each 94-lb. bag of cement:

- 1:1½:3 mix, 7 lbs. Masons' Hydrate
- 1:2 :4 mix, 10 lbs. Masons' Hydrate
- 1:2½:5 mix, 12 lbs. Masons' Hydrate
- 1:3 :6 mix, 15 lbs. Masons' Hydrate

PACKAGE—Shipped in convenient 50-lb. paper bags.



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PREPARED FINISHES

Used Without Lime Putty



THESE finishes require only the addition of water to make them ready for use. They entirely eliminate the troubles common to lime finishes. Made from pure gypsum they form a perfect and natural bond with any gypsum plaster base coat.

Brands

TROWEL FINISHES	SAND FLOAT
Universal No. 1. Imperial	FINISHES
Universal No. 3. Ivory	Silico
Badger.	Imperial



Universal No. 3 is pure white, all others are grayish-white in color.

Advantages

These finishes, being ready to use when water is added, save time and labor. No slaking or other preparation is necessary. They assure a uniform mix of correct proportions. No mistakes at the mortar box. They set up hard within a few hours, possess great density and are hard and durable. They entirely eliminate "pops," "pits," and "map cracks." Decorations of any kind may be immediately applied as soon as the finish dries out with no danger of injury to the most delicate tints.

COVERING CAPACITY—5 to 6 100-lb. sacks of trowel finish and 7 to 8 100-lb. sacks of sand float finish will cover 100 sq. yards, average conditions.

PACKAGE—Shipped in full weight 100-lb. cloth sacks or 80-lb. paper bags.

See Specifications on Page 36

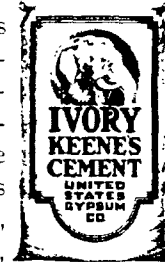
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IVORY KEENE'S CEMENT



IVORY Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is pure white in color and takes a very high polish. Ivory Keene's Cement is manufactured from pure, specially selected gypsum mined at Southard, Oklahoma. Owing to this fact, to our improved methods of manufacture, to the greater fineness to which the material is ground and to our rigid mill inspection, Ivory Keene's Cement excels in smooth, uniform working qualities and in tensile strength.



Ivory Keene's Cement is also regarded by many manufacturers as the best on the market for scagliola work. Its extreme fine grind, purity and hardness make it especially suitable for this purpose and it can be polished to perfectly imitate marble.

Advantages

Ivory Keene's Cement should be used for every class of public or private building where interior walls or cast decorations possessing the dignity and permanence of marble are desired. Keene's Cement resists fire. Its hard surface can be polished to the smoothness of glass. It is impenetrable to rodents and vermin, and does not afford lodgement for disease germs. It is easily cleansed. It contains no alkali to stain delicate wall tints or saponify the oil in paint, hence it is a safe base for fine decorations. It may be retempered and used unless it becomes dry.

COVERING CAPACITY—5-100-lb. sacks per 100 square yards when used neat. 4-100-lb. sacks per 100 square yards when mixed 4 to 1 with hydrated lime.

PACKAGE—Shipped in 100-lb. cloth or paper-lined cloth sacks.

See Specifications on Page 37



Aridize PLASTER



ARIDIZE Plasters are produced by a manufacturing process, patented by the United States Gypsum Company, which artificially ages the gypsum plaster, making it equal to plaster one year old when produced.

These plasters include Pottery Plaster, Dental Plaster, Moulding Plaster and Gauging Plaster.

Heretofore, plasters have been aged by storing in warehouses but the results could not be uniform because of variation in temperature and humidity conditions. The production of Aridize Plasters, however, depends in no way on the atmospheric conditions. For an artificial atmosphere is produced at a temperature and humidity that will give a uniform aging and a plaster that is always uniform.

Pre-aging lowers the water carrying capacity of the plaster and hence Aridize Plasters set into denser, stronger and more durable moulds.

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

Aridize Plasters are ground much finer than other similar products. This assures a more thorough solution and a finer surface to the finished work and an absence of pin dots. The fine satin-like surface means longer lived moulds.

In addition to these qualities, Aridize Plasters are cooler working and slower setting. But very little heat is generated in setting, so that gelatin moulds are not damaged. The slow setting gives time for proper blending and working out of trapped air bubbles and working the plaster into angles or corners of moulds.

Aridize Plasters are always uniform in water carrying capacity and working qualities. Every shipment is the same. They always produce the same dense, strong durable moulds with a smooth satin-like surface free from pin dots.

Aridize Plasters are produced from selected gypsum rock and are unequalled for whiteness and purity.

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Aridize MOULDING PLASTERS

THE requirements for moulding plaster are distinctly different from any other class of plaster. Gypsum deposits suitable for making this material are exceedingly rare. Our moulding plasters are made from selected gypsum rock ideal for the purpose which, together with our special process of manufacture, accounts for the smooth working and uniform setting qualities which have made these materials so popular.



Brands

U. S. G. Moulding No. 1 Ivory Moulding
U. S. G. Moulding No. 2 New York City Mills
 Golden Seal Moulding

Moulding No. 1 and No. 2 and Golden Seal are pure, white and extremely fine-grained—the highest quality moulding plasters obtainable.

Advantages

These plasters have all the advantages outlined on page 23 for Aridize Plasters. They are smooth and easy working, uniform in strength and time of set, qualities that are most sought for ornamental moulding work.

PACKAGE—Shipped in 100-lb. cloth sacks, 100-lb. paper lined cloth sacks, 80-lb. paper sacks and 250-lb. (235-lb. net) barrels.

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**BEN FRANKLIN
AGRICULTURAL GYPSUM**



(Land Plaster)

SOIL fertility depends upon the presence in the soil of ten chemical elements. Six of these elements are abundantly supplied by rain or are present in sufficient quantities in the soil itself. The four remaining elements the farmer must put back artificially in order to maintain maximum fertility. These four are sulphur, calcium, nitrogen and phosphorus.

Ben Franklin Agricultural Gypsum supplies sulphur in the immediately available sulphate form. It supplies calcium. And it supplies nitrogen in the only way that is economical for general farming.

Ben Franklin Agricultural Gypsum is made by grinding gypsum rock extremely fine. Gypsum should not be confused with lime, for it is a true crop food. Its action is neutral—it neither sweetens nor sours soils. Its principal uses are as follows:

1. It is used as a crop food for legumes—alfalfa, clover, beans, peas, vetch, peanuts—and other crops of high sulphur requirements, for the purpose of supplying sulphate sulphur; also calcium.

By enormously increasing the size of legumes, their root systems and the size and number of their nitrogen-fixing organs, Ben Franklin Agricultural Gypsum adds greatly to the store of nitrogen in the soil.

2. It is used as a preserver of nitrogen in barn-yard manure, every dollar's worth saving two dollars in nitrogen.

3. It is used in combination with ground rock phosphate as a complete, economical substitute for acid phosphate.

4. It is used on all crops, particularly on truck gardens to increase the absorption of potassium (potash), phosphorus and other soil elements.

5. It is used to better the condition of soils, acting as a specific for black alkali, and loosening heavy clay soils. It is also extensively used as a carrier for Paris green and other insecticides.

PACKAGE—Shipped in 200-lb. non-returnable cloth sacks, 100-lb. returnable cloth sacks and 80-lb. paper bags.

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PLASTER PACKAGE



80-lb Paper Bag

EVERY package of United States Gypsum Company Plaster bears our trademark as shown in the illustration. Each sack is tagged according to brand, with directions for mixing on the back of the tag, and, with certain exceptions, also on the paper bags.

Paper Bags

Dealers and users of plaster prefer the paper package because it is light in weight; easily handled and stored; gives better protection from dampness, etc.; avoids the expense and labor incident in preparing empty cloth bags to be returned; and is a cleaner package.

Where plaster is ordered in paper bags, the dealer and contractor do not have an investment tied up without interest while bags are being returned for credit; do not have to lose the value of sacks stolen from the job or damaged.

In view of these advantages, the paper bag is the most satisfactory plaster package both from an economical as well as practical angle.

Cloth Sacks

When plaster is ordered in jute sacks, these are sold with the plaster and repurchased when returned, freight prepaid, to the mill from which plaster shipment was made, according to our customary terms.

When returning empty cloth plaster sacks, for repurchase, they should be bundled in lots of 50, each bundle securely tied with three wires or 3-16 inch rope, one wire at each end and a wire in the middle.

A linen tag should be attached to each bundle, plainly showing shipper's name and address. This method is required by the transportation companies. If this is not done the shipment takes a higher freight rate. Bills of lading covering shipment must be mailed direct to our General Offices at Chicago and sacks shipped to mill from which they were received.



100-lb. cloth or Jute Sack

HOW TO AVOID PLASTER TROUBLES

THESE directions apply to all Gypsum Cement Plasters, Wood Fibre Plasters, and Finishes. Their observance is just as important in securing first-class results and in making the mechanics' work easy as are the specifications themselves. Read them.

Our modern processes of manufacture and rigid inspection methods insure materials that are perfect in working and setting qualities. Because every batch of United States Gypsum Company Plaster is tested at our mills by experts, we know that our material will work properly in any climate, if properly handled. But certain local conditions affect gypsum plasters—if you let them. Following are eight simple, common-sense rules which will enable you to avoid trouble and get best possible results from your plaster.

Rule 1.—Keep Moisture Away from the Plaster Before Mixing—Moisture causes plaster to partially set. Therefore, plaster should be stored in a dry place, and circulation of air through the warehouse should be prevented. Do not pile plaster out-of-doors or on the bare ground or next to green walls. Do not allow plaster to stand dry-mixed with sand.

Rule 2.—Have Lath Conditions Right—Lath should be of good grade and should be properly spaced and nailed. Look out for dry lath. Wood lath are bound to swell when wet and if they are not swelled before plastering, they are likely to swell and buckle afterwards. Therefore, wet the lath. It is better to do it the day before and again about one hour before plastering. It is specially important to wet wood lath over doors and windows, where the walls dry out very rapidly. **Note:**—The best way to avoid lath troubles is to use Sackett Plaster Board. You do not have to soak Sackett and it makes a solid dense wall that can never buckle. Brick walls have great suction; sprinkle them well before plastering.

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Rule 3.—Use Only Clean Water—Do not use stagnant water; water from wells or hydrants is best. Water from the barrel in which you wash your tools should never be used.

Rule 4.—Look to Your Sand—Use only clean, sharp sand, free from dirt, quicksand and frost.

Rule 5.—Keep Set-up Plaster Out of the Mix—Set plaster causes quick-set. Clean the mortar box and tools after each gauging. Do not wash tools in the gauging water. Do not mix one gauging with another. Do not retemper plaster after it has commenced to set. Throw it away—it is time and money saved.

Rule 6.—Mix Material as Needed—Apply mortar immediately after mixing and do not mix more material than can be handled in about one hour.

Rule 7.—Keep Green Walls from Freezing for 24 Hours—After this length of time cold will not injure them. Be sure that frost is out of the base coat before applying the finish.

Rule 8.—Keep Plastered Walls from Drying Out Until Set—Although this is the last rule, it is the most important, because dry-outs are the most frequent of all plaster troubles during the hot summer months. They appear as soft, chalky spots on the wall. Dry-outs can be cured—but it is very much easier, and cheaper to prevent them.

How to Prevent Dry-Outs

Screen the Openings—Before applying plaster in warm weather, all openings should be screened with cloth or by other means to prevent blasts of hot air from drying up the water in the plaster. *United States Gypsum Company's Plaster will always set—if it is kept from drying out before it sets.*

Caution—After the plaster has set, open windows and doors and allow free circulation of air to dry out moisture expelled from the plaster. In damp or rainy seasons provide artificial or other means of drying out the rooms after plaster has set. This is important.

Wet Down the Lath—Remember that wood lath become very thirsty in hot, dry weather and require a lot of water. If this thirst

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is not quenched beforehand, the lath will drink up the water that belongs to the Gypsum, and soft, chalky spots or "dry-outs" will result. So wet the lath thoroughly—*all over—every spot*. Do this the night before plastering if convenient, or at least four hours before plastering. Then sprinkle them again about one hour before plaster is applied.

Beware of Too Thin Coats—If plaster is applied too thin the dry lath will quickly absorb the water from the small body of mortar and "dry-outs" may occur. *Moral: Wet down the lath and use the proper coat of plaster.*

How to Remedy Dry-Outs

Do not be alarmed if plaster does not set up on schedule time. Should it show signs of drying out before setting, spray the walls thoroughly with clean water from a spray pump or garden hose with spray nozzle. When there are only a few dry-out spots the water may be whipped in repeatedly from a plasterers' brush. Do not become discouraged. Remember, gypsum plaster is sure to set eventually if kept wet. Keep on spraying and the walls will set up sound and hard.

Emergency Treatment for "Dry-Outs"—Pure Water is the best treatment for "dry-outs," but when quick action is absolutely necessary, it may be had by applying a solution of six ounces of pulverized commercial sulphate of zinc and twelve quarts of water with spray pump or plasterers' brush to the dried-out portions of the wall.

Remedies for Quick-Set and Slow-Set

United States Gypsum Company Plaster is not shipped unless it measures up to a fixed standard of quality. Quick-set or slow-set is invariably due to local causes and not to any fault in the plaster itself. When plaster sets too fast or too slow, look to your sand and water. If you are unable to remove the cause of your trouble, the following remedies may be employed. Do not confuse dried out mortar with "quick-set" mortar. Dried out mortar crumbles between the fingers, while "quick set" mortar feels hard and firm.

How to Delay Setting Time

United States Gypsum Company Retarder—When time permits, wire to our nearest mill or sales office for Retarder. Use

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1¼ to 1½ ounces of retarder to each 100-lb. sack to start, and increase or decrease the amount in future batches as may be found necessary. Simply scatter retarder uniformly over plaster in the box and dry-mix thoroughly before putting in the water.

Pulverized Glue May Be Used—Make a solution of 2 pounds of glue to 40 gallons (four-fifths of a barrel) of water and use a 12-quart pail full of this solution in the gauging water to each 100-lb. sack of plaster.

How to Hasten Setting Time

United States Gypsum Company Accelerator—Scatter uniformly over the top layer of plaster in the box, the required proportion of Accelerator. Use about 4 or 5 ounces per 100 pounds of plaster to start, and increase or decrease the amount in later batches as may be found necessary. Dry-mix the accelerator thoroughly before adding the water.

Set-up Plaster Will Hasten Set—If the material is too slow in setting, thoroughly scrape the sides and bottom of the mortar box or pulverize some mortar and mix it with the batch. Ordinarily, the above mentioned remedies will suffice, but if they do not, wire to our nearest mill or sales office for "U. S. G. Accelerator." When time does not permit, zinc sulphate or alum may be used.

Alum—Make a solution of 2 pounds of alum to 40 gallons of water (four-fifths of a barrel full) and use a 12-quart pail full of this solution in the gauging water to each 100-lb. sack of plaster.

Tell Us Your Troubles

When you run across a snag and can't figure it out, don't hesitate to write us. We are interested in your success. Don't forget that United States Gypsum Company top-notch quality plastering materials are the kind you can always depend upon and are a good foundation for you to build on.

SPECIFICATIONS

(1) General Directions

The following general directions apply to all brands of cement, wood fibre and prepared plasters:

(2) Use a clean tight mixing box, about $3\frac{1}{2}$ by 7 ft., raised about 4 in. at one end. Mix with a hoe; the manufacturer disclaims all responsibility if mixing is done by machine.

(3) Use only clean water free from alkali and impurities; keep tools clean. Never rinse tools in gauging water.

(4) Do not mix more material than can be applied in about 1 hour.

(5) Do not mix one gauging with another; and never retemper plaster after it has commenced to set. Clean the mixing box after each gauging.

(6) Keep plaster from freezing for 24 hours after application.

(7) In hot, dry weather, close all openings while plastering to prevent drying out of the material before it has set. Should this happen, however, and the work show soft, white spots, it can be remedied by sprinkling with clean water with a spray pump or brush until the material sets up and hardens.

(8) After plastering has set, open the windows and permit the wall to dry out as quickly as possible.

(9) Keep plaster in a dry place; never store it on the bare ground.

Specifications for Gypsum Cement Plasters

(1) General Requirements

(2) *Grounds*—To be not less than $\frac{3}{4}$ -in. for $\frac{1}{4}$ -in. Sackett or Adamant Plaster Board, wood, wire or expanded metal lath; $\frac{5}{8}$ -in. for $\frac{3}{8}$ -in. Sackett or Adamant Plaster Board; $\frac{1}{2}$ -in. for Pyrobar Tile; $\frac{5}{8}$ -in. for brick or clay tile.

(3) *Lathing*—Preferably $\frac{1}{4}$ -in. or $\frac{3}{8}$ -in. Sackett or Adamant Plaster Board, applied according to manufacturer's specifications. If wood lath, it should be a good grade—free from knots, sap or bark. White pine, cypress or spruce lath are best. Must be well nailed. Not less than four 3d common nails to each 4-ft. lath, driven well home. Double nailing should be resorted to on very particular jobs, especially if lath are not up to standard in quality and condition.

Break joints every fifth lath, and do not permit ends of lath to butt or overlap; at least $\frac{1}{4}$ -in. space between ends is best.

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(4) *Mortar*—To be any brand of UNITED STATES GYPSUM COMPANY's Cement Plaster, see page 10, and to be mixed and applied according to directions of the manufacturer.

(5) Directions for Mixing

(6) First put in a layer of sand, then one of plaster in raised end of box. Hoe dry from one end of the box to the other, then back again, working sand and plaster thoroughly together to a uniform color. Put water in the other end of the box: hoe plaster into the water, mixing thoroughly. Mix thin at first, then add sufficient dry plaster and sand in right proportions to bring it to the proper consistency for application.

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

(8) Use only dry, clean, sharp sand, free from loam and dirt. Screen through a 6-mesh screen. Avoid quicksand.

(9) *For Sackett Plaster Board, Wood, Wire and Expanded Metal Lath*—Mix 2 parts by weight of clean, sharp, dry sand with 1 part of plaster.

(10) *For Brick, Pyrobar Tile, Clay Tile and Second or Browning Coat*—Mix 3 parts by weight of clean, sharp, dry sand with 1 part of plaster.

(11) Directions for Applying

(12) *On Sackett Plaster Board*—Do not wet board. Plastering to be 3-coat work, scratch coat to be allowed to set before brown coat is applied. *Plaster is to be 1/2 in. thick.* Straighten all angles and base ready to receive finish.

(13) *On Wood Lath*—Soak lath thoroughly the day before and again an hour or so before applying the plaster. Lay plaster on lightly, but with sufficient pressure to obtain a good key, and fill up grounds. Darby lightly, and use water sparingly.

(14) *On Wire or Expanded Metal Lath*—Apply a scratch coat, lightly covering the lath and filling meshes. After the scratch coat has set firm and hard, but before it is dry, apply the second coat, bringing it to a straight and even surface with rod and darby, ready to receive the finishing coat. Darby lightly and use water sparingly.

(15) *On Brick, Pyrobar Tile, or Clay Tile Walls*—Soak brick or clay tile walls thoroughly—and if necessary sprinkle Pyrobar lightly—to reduce the suction. Apply sufficient material to fill out grounds. Bring to a straight and even surface with rod and darby, ready to receive the finishing coat. Darby lightly and use water sparingly.

Specifications for Gypsum Wood Fibre Plasters

See General Directions, No. 1, page 32.

(16) General Requirements

(17) *Grounds and Lathing*—Same as specified for cement plasters, 2 and 3, page 32.

(18) *Mortar*—To be any brand of the UNITED STATES GYPSUM COMPANY's Wood Fibre Plaster, see page 11, to be mixed and applied according to directions of the manufacturer.

(19) Only water is to be added to this material to fit it for application, and under no circumstances will the contractor be allowed to mix in sand or other solid material.

(20) Directions for Mixing

(21) Place the plaster in upper end of box and water in lower end. Hoe the plaster into the water and allow it to soak from 10 to 20 minutes. Then mix to correct consistency.

(22) Directions for Applying

(23) *For Sackett Plaster Board*—Do not wet board. Plastering to be 3-coat work, scratch coat to be allowed to set before brown coat is applied. *Plaster is to be 1/2-inch thick.* Straighten all angles and base. Leave base coat rough to receive finish.

(24) *Wood Lath*—Soak lath thoroughly the day before and again an hour or so before plastering. Apply first a thin coat of mortar, following up at once before it sets with sufficient material to fill out the grounds. When the wood fibre is to be troweled down smooth for a finish, it should be used neat. When a float or troweled finish coat is desired, the surface of base coat must be broomed—left rough—to receive the finish. Broom before the plaster begins to set.

(25) *For Wire and Metal Lath*—Apply the mortar a little stiff. Scratch a thin coat on the lath. After this coat is set hard, apply a second coat mixed same as for brick (see No. 26) straightening up the walls. The second coat should be left rough or broomed to receive the finish.

Note—The company also manufactures wood fibre plaster under a formula allowing the use of an equal amount of sand by weight, but recommends the use of the neat material for application to wood lath and plaster board as the addition of sand destroys the flexibility and toughness and adds weight.

(26) *For Pyrobar Tile, Brick or Clay Tile*—Mix equal parts by weight of plaster and clean sharp sand. Apply plaster in usual manner. Material must be specially retarded for use with sand.

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Specifications for Prepared (Sanded) Plasters

See General Directions, No. 1, page 31.

(27) General Requirements

(28) *Grounds and Lathing*—Same as specified for cement plasters, Nos. 2 and 3, page 32.

(29) *Mortar*—To be any brand of the UNITED STATES GYPSUM COMPANY'S Prepared Wall Plaster, see pages 13 and 14, to be mixed and applied according to directions of the manufacturer.

(30) Directions for Mixing and Applying

(31) Nothing is to be added to this material but water, and under no circumstances will the contractor be allowed to mix in sand or other solid material.

(32) Put plaster in one end and water in the other end of box-Hoe plaster into water, mixing thoroughly. Mix thin at first then add a sufficient amount of dry material, and work to proper consistency for application.

Apply same as specified for cement plaster, Nos. 11, 12, 13, 14 and 15, page 53.

Specifications for Adamant Plaster

Same as for prepared (sanded) plasters, see above.

Specifications for Bondcrete Plaster

General Requirements

Caution—Use rough form boards. Avoid dressed or oiled boards. The concrete surface must be dry and free from dust, oils and efflorescence before base coat plaster is applied. If oil or grease is on the concrete surfaces, burn off with a torch. If there is any efflorescence, remove the frost with a wire brush, then wash with a diluted solution (1 to 5) of muriatic acid. Wash off acid with clean water.

Mortar—To be Bondcrete Plaster, see page 16, manufactured by the UNITED STATES GYPSUM COMPANY, water only to be added, and to be mixed and applied according to directions of manufacturer.

Grounds—To be of sufficient thickness to bring to a true and even surface.

Directions for Mixing and Applying

Same as for unsanded wood fibre plaster, Nos. 20 and 22 on preceding page.

Finish—Bondcrete Plaster must be finished with a skim coat of trowel or sand float finish. See pages 36 and 37.

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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; and 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 smooth surface, applying water with a damp brush. Do not drench with water, as it will kill the face of the material.

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

Caution—Never apply a finish coat on a base coat which contains frost, and keep finish from freezing for 24 hours after it is applied.

Specifications for Prepared Sand Float Finishes

General Requirements

Sand Float Finish—To be Adamant INX White Sand Float Finish or Adamant IN, Imperial or Silico Gray Sand Float Finish (see pages 20 and 21) and to be mixed and applied according to directions of manufacturer.

These finishes require nothing but water to be added to fit them for application, and under no circumstances will the contractor be allowed to mix in sand or other solid material.

Directions for Mixing

Same as for prepared trowel finishes, see page 35, but do not mix so thin.

Directions for Applying

To obtain best results, float finish should be applied after base coat has set firm and hard, but while still green and within 12 hours after base coat is applied.

Lay on with trowel and then use cork, carpet or felt float (cork float is best), working material to a true and even surface, free from float marks and cat faces.

Use as little water as possible while floating, so as to avoid killing the surface. Use damp brush only.

Do not attempt to float after the material begins to or has set.

Caution—Same as for trowel finishes, above.

Specifications for Ivory Keene's Cement

For a smooth, hard finish, add water only, mix thoroughly, bring to working consistency, and apply. In applying, follow directions for Prepared Trowel Finishes on page 36. A smooth, highly polished surface may be produced by rubbing the walls with a cloth after the cement is dry.

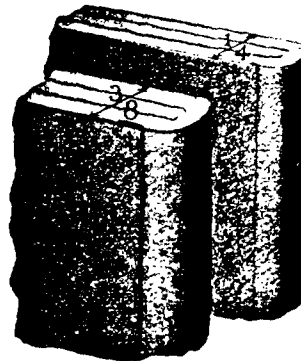
In cases where extra plasticity is desired, 1 pail of lime putty may be added to each 100-lb. bag of Ivory Keene's Cement.

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U.S. SACKETT AND ADAMANT U.S.
O PLASTER BOARDS O

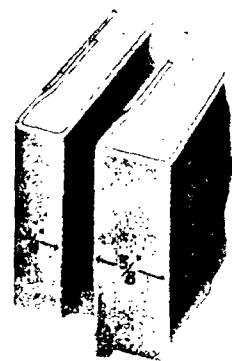
THESE boards are the modern lathing materials used instead of wood or metal lath. They are not only desirable but essential for fire protection, fuel economy, sound deadening and permanence of plastered walls and ceilings. The two types of plaster board manufactured by the United States Gypsum Company are illustrated below.

Sackett



Cross-sectional views of $\frac{1}{2}$ -inch and $\frac{3}{8}$ -inch Sackett Plaster Board. Note alternate layer construction—the only Plaster Board made this way.

Adamant



Cross-sectional views of $\frac{1}{2}$ -inch and $\frac{3}{8}$ -inch Adamant Plaster Board. Note patented nailing edges.

Description

Sackett Plaster Board is composed of three layers of pure gypsum and four layers of fibrous felt, placed alternately, making a tough, fireproof sheet, to which gypsum plaster bonds perfectly forming a solid gypsum wall.

Adamant Plaster Board is a solid, fireproof sheet of gypsum between two layers of tough paper. The uniform suction of this covering affords a perfect bond with gypsum plaster.

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Sackett Plaster Board has a number of advantages not found in paper covered boards. The felt provides a better plaster bond than paper. The four alternate layers of felt increase its flexibility and nailing strength. The inside layers control suction when plaster is applied and make it a better heat, cold and sound insulator. Can be cut without breaking bond between gypsum and felt.

Advantages of These Boards

No expansion or contraction. Will not swell, warp or buckle when plaster is applied, hence will not shrink when plaster dries out.

Keep the moisture from wet plaster away from wood work.

Do not require wetting before plastering.

Prevent waste of plaster pushed between and back of wood and metal laths.

Can be applied in about one-half the time required for wood or metal lath.

Make a cooler house in summer and a warmer one in winter because gypsum is one of the best known non-conductors of heat and cold. This insulation assures economy in fuel.

Fireproof, will not burn or readily transmit heat, thus fireproofing the wood construction and confining the fire to the room in which it originates.

Sound proof. Gypsum is recognized as a poor conductor of sound. Tests show that plaster board and plaster walls are far more effective in resisting sound than wood lath and plaster.

Permanent. Will not decay, rust, shrink or warp. Nothing to injure or discolor the plaster.

Cost less for the completed wall than metal lath and plaster and but little more than wood lath and plaster.

Sizes and Weights of Sackett and Adamant

Thickness	Dimensions	Weight per sq. ft.	Weight per board
$\frac{1}{4}$ "	32"x36"	1 $\frac{1}{2}$ lbs.	12 lbs.
$\frac{3}{8}$ "	32"x36"	2 lbs.	16 lbs.
* $\frac{1}{2}$ "	32"x36"	2 $\frac{1}{2}$ lbs.	20 lbs.

*Special thickness made to meet the requirements of certain building laws.

Specifications for Plaster Board

General Requirements

Lath—Shall be $\frac{3}{8}$ -in. Sackett (or Adamant) Plaster Board made by the UNITED STATES GYPSUM COMPANY. Size of sheets, 32 by 36 inches.

Grounds—Shall be $\frac{7}{8}$ -in. $\frac{1}{2}$ -in. Sackett (or Adamant), $\frac{1}{2}$ -in. plaster.

Note to Architect: $\frac{1}{4}$ -in. Sackett (or Adamant) may be specified, and grounds should in that case be $\frac{3}{4}$ -in. Best results on ceilings requiring leveling are obtained by furring with $\frac{7}{8}$ by 2-in. furring strips set on 8- or 12-inch centers.

Nails—Sackett (or Adamant) lathing shall be applied with 3d common nails.

Directions for Application

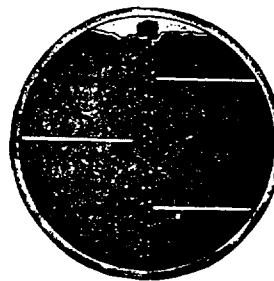
Lay all Sackett (or Adamant) sheets in parallel courses following the direction of studding, furring or joists. Start each alternate course with half sheet (32 by 18 in.), so as to break joints at right angles to studding on walls (horizontally) and at right angles to joists or furring on ceilings. The last sheet of Sackett (or Adamant) in each course shall be cut to exactly fit space. Cut boards with a common saw, or score with the point of a hatchet and break over a straightedge.

Break joints between walls and ceilings so that a vertical joint on the wall will not meet a ceiling joint. Perpendicular joints on opposite sides of partitions must not be on same stud; that is, the stud that comes at center of Sackett (or Adamant) on one side of partition must be at edge of Sackett (or Adamant) on opposite side.

Space Sackett (or Adamant) sheets $\frac{1}{4}$ in. apart at all horizontal or other joints which do not come on studs. Joints coming on studs or joists may be butted tight or come as will, but joints must not exceed $\frac{1}{4}$ in.

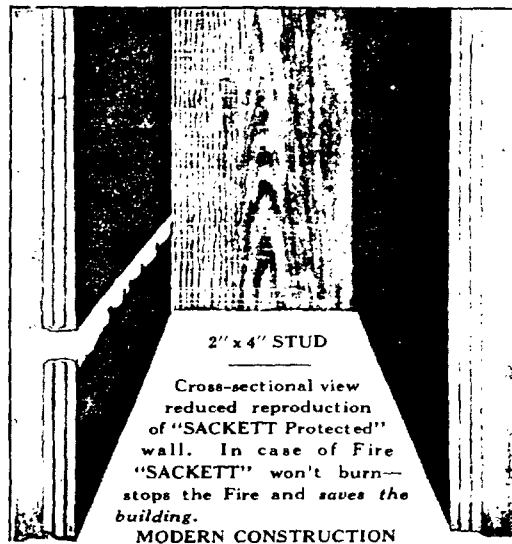
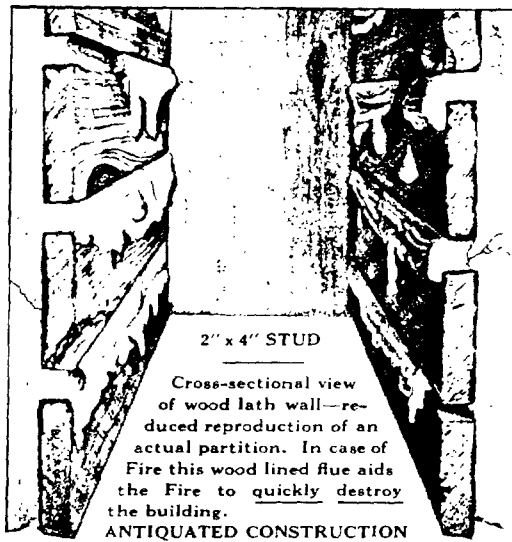
Do not wet boards before plastering.

PLASTERING—See "Plaster Specifications" Nos. 12, 23 or 30, on pages 33, 34 and 35.



SHOWING METHOD OF SPACING AND BREAKING JOINTS

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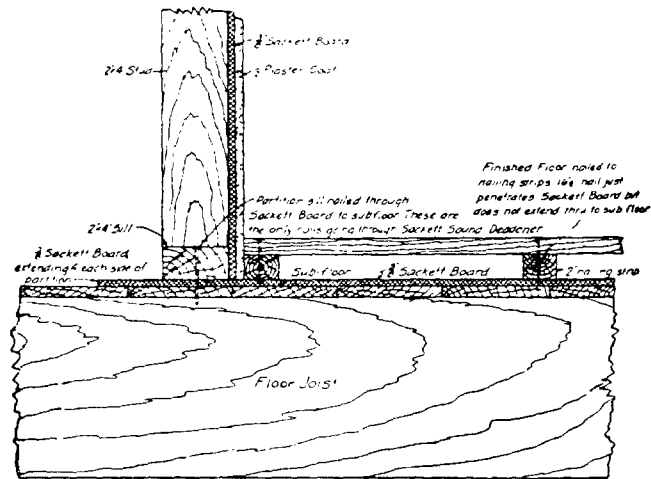


Specifications for Sound Deadening Floors with Sackett Plaster Board

Place a strip of Sackett Plaster Board 6 inches wide on the sub-floor flush against brick wall. Nail so the furring strip and plaster will cover the nails. Apply furring strips so the end of the strips rest on the Sackett.

Place strip of Sackett 12 inches wide on the sub-floor extending 4 inches on each side of the 2x4 sill, which is laid on center of it ready to receive the partition studs. Nail only through 2x4's, do not nail the outer edges of the Sackett to the sub-floor. After the studding is set, apply Sackett according to our standard specifications, ready for plastering. Sackett for partitions should rest on the 12-inch strip of Sackett below the 2x4 stud. The plaster on the Sackett for partitions should not be less than $\frac{1}{2}$ -inch in thickness.

After the plastering is complete the sub-floor must be thoroughly cleaned. Then lay $\frac{3}{8}$ -inch Sackett over entire sub-floor. *Do not nail.* sheets must be matched up tight to the Sackett strips under partition sills and under furring. Place $1\frac{1}{2}$ x2-inch nailing strips, spaced 16-inch centers, *not nailed*, on top of the Sackett layer on sub-floor. Nail finished floor to the nailing strips. Use nails not longer than 7d, as they must only be long enough to go through the finished floor and nailing strips. Otherwise every nail that penetrates the sub-floor acts as a sound conductor.



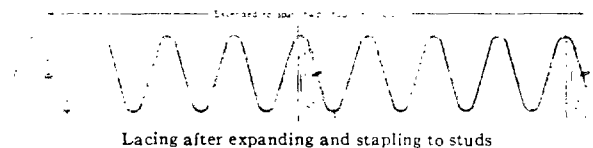
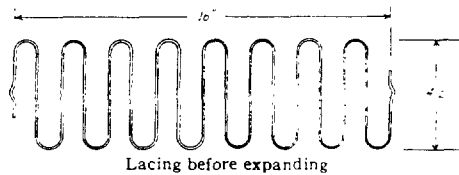
Section of Floor at Partition

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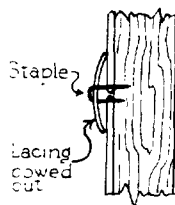
SACKETT (REINFORCED) SYSTEM of Plastered Walls and Ceilings

THE Sackett Reinforced System is a method of construction in which the joints of Sackett are reinforced with a special wire fabric. This "laced joint" feature was evolved after several years of investigation by UNITED STATES GYPSUM COMPANY engineers.

The joints instead of being broken at right angles to the supports are broken on the support. This results in the supported joints being as strong as any other point in the wall and throws all the weakness in the wall on the continuous cross joints. These cross joints are then reinforced by tested galvanized wire lacing as illustrated below and the walls and ceilings then plastered in the usual manner.



Advantages



This system assures a perfect plastering base, with joint so reinforced that the entire wall or ceiling is of uniform strength.

Satisfactory grounds are automatically established by the wire lacing, which is slightly bowed as shown in the illustration.

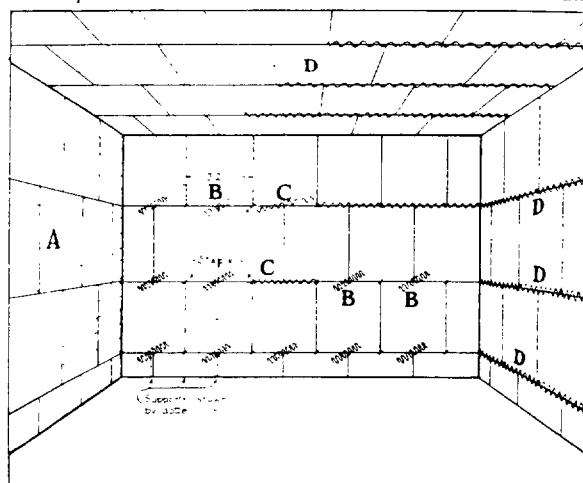
The plasterer must put on at least $\frac{3}{8}$ -inch of plaster throughout in order to conceal the wire.

By the use of this system it is not necessary to leave spaces for keys, all joints being butted; it is also unnecessary to break joints on opposite sides of partitions.

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The system possesses all of the advantages obtained by using Sackett Plaster Board, fireproof, sound-proof, non-staining and non-cracking.

The Sackett Board is nailed trade-mark side to walls or ceilings with continuous joints crossing the studs or joists. The broken joints are nailed to the supports with 3-penny common flat-head nails (preferably coated) placed not more than six inches apart. Whenever possible full-sized boards should be used for walls and



Directions for Erection

ceilings. Small pieces and cuttings can be used on small surfaces such as closets, under stairways, etc. (See A.)

Staple the center of the wire lacing to every other support, placing it slightly on a slant, with bowed sides out so that each end of loop rests lightly on the board. (See B.)

After lacing is in place, drive staples in remaining supports. Now stretch lacing out, slipping the ends through these staples, and drive the staples home. (See C.)

Sackett Reinforced System requires no special tools for its erection and can be put up speedily by any skilled mechanic.

Lacings and staples, together with full directions on method of application, are packed in boxes, each containing 63 pieces of lacing and 150 $\frac{1}{8}$ -inch or 1-inch staples, which quantity will care for 500 square feet of board.

(For specifications for plastering see Nos. 12, 23, or 30, on pages 33, 34 and 35.)

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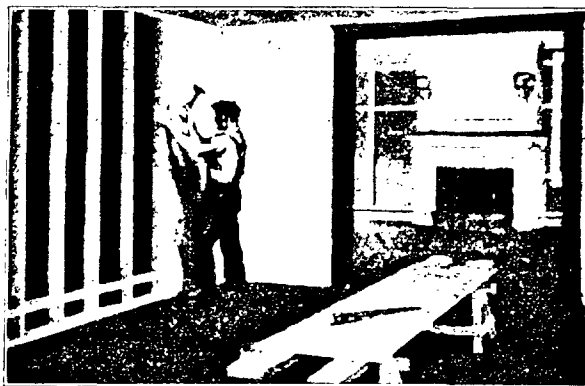


SHEETROCK

Reg. U. S. Pat. Off.

The Fireproof Wallboard

APPROVED BY UNDERWRITERS' LABORATORIES, INC.

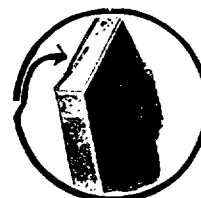


Sheetrock is nailed directly to studding. Any good carpenter can apply it.

SHEETROCK is a fireproof wallboard. It won't burn, warp, shrink, buckle or sag. It resists heat and cold. It is a good sound-proofing medium. Its use results in a strong, rigid permanent wall.

Sheetrock is made from pure gypsum. It is moulded while in a plastic condition between two sheets of tough protective covering. When the board is finished the gypsum returns to its rock state—strong and lasting, tough and durable, and slightly flexible. It comes in a thickness of $\frac{3}{8}$ ", in lengths of 6, 7, 8, 9 and 10 feet, and in widths of 32" and 48", so that it fits studding or joists set on regulation 16-inch centers and is readily adaptable to any ceiling height.

The long edges of Sheetrock are reinforced and protected by the same material with which the board is sheathed. These edges are square and clean-cut as shown in the accompanying illustration.



U. S. G. Patented. Reinforced Edges Provide Extra Nailing Strength and Insure Tight, Flush Joints.

Where Sheetrock Is Used

Because Sheetrock possesses so many high-grade practical features, it has a correspondingly wide field of usefulness. The following is a partial list of Sheetrock uses:

For walls and ceilings in new buildings of all types, for building new rooms in old buildings; for lining garages and attics; for enclosing furnace and store-rooms; for fireproofing over heating plants; for factory dry rooms; for exhibition booths; for phonograph rooms; and for all wall and ceiling purposes in new and remodeling work.



A dainty breakfast room, showing Sheetrock wall papered. Sheetrock is the only wallboard that can be satisfactorily wall papered. Joints and nailheads are treated with Sheetrock Finisher.

Advantages

Sheetrock walls will not warp, shrink or crack because it is not affected by climatic changes as are pulp wallboards. Sheetrock takes all wall decorations, including wallpaper.

Made of rock, Sheetrock cannot burn. One match will almost instantly ignite any pulp wallboard. Test both.

The Underwriters' Laboratories, Inc., have tested Sheetrock for strength and fire-resistance, and have included it on their list of Inspected Mechanical Appliances. The Underwriters' label is on each sheet.

By confining flames to one room until they can be extinguished, Sheetrock may save your building and valuables from destruction.

The sheets fit closely and evenly. The tough paper covering of Sheetrock is folded squarely over the longer edges forming a

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patented feature which insures an extra strong nailing-edge and tight, flush joints.

Sheetrock walls are permanently tight and are excellent insulators of heat and cold. They mean a cooler, more comfortable building in summer, and a warmer, cheaper-to-heat building in winter. Sheetrock saves coal.

Sheetrock because of its peculiar composition, its greater thickness and its permanently tight joints, is a nonconductor of sound—enhances the privacy and comfort of every room.

Sheetrock is almost twice as thick as ordinary wallboard, yet it is sufficiently light in weight for easy, rapid handling. The larger tough sheets can be sawed and nailed just like wooden boards.



Sheetrock-ed walls paneled. Sheetrock can be paneled to better advantage than other wallboards because it does not warp, shrink or bulge.

Directions for Applying

PILING SHEETROCK—Pile flat on floor in center of room, trademark side up, except the first board. Protect the edges. Doors and windows should be in place before board is delivered on job.

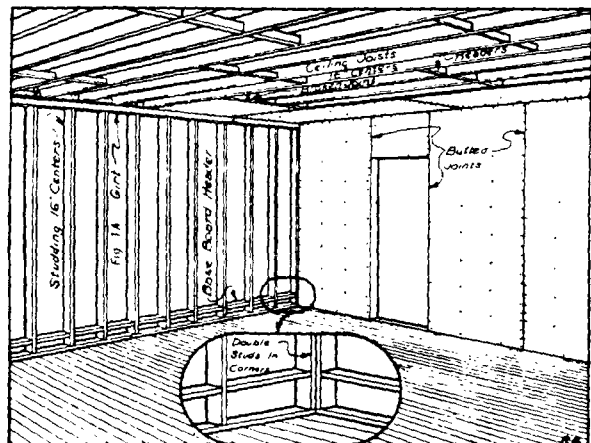
FRAMEWORK—Space studs and joists 16 inches on centers. Be sure they are straight and level. Place headers so that all sides and ends will be supported.

SAWING—Place this side down and use a sharp hand-saw. Support board close to sawing edge. Slightly bevel, with coarse sandpaper, the edge of top paper on all cut ends which are to be butted.

NAILS AND NAILING—Use 3-penny fine countersunk-head or flat-head nails (1½ inches long), cement coated. To attach Sheetrock over old plaster, use 6-penny cement-coated box nails. Drive nails

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"home" and straight in, heads slightly below surface; do not use a nail set. On intermediate supports space nails 6 inches apart on ceilings, 9 inches apart on walls. At all sides and ends, space nails 3 inches apart, and $\frac{3}{4}$ inches from edge. Butt boards tightly together, folded edges against folded edges, sawed edges against sawed edges. First, drive a few nails at the edge nearest adjacent board last applied; nail the first intermediate stud or joist; nail the second intermediate stud or joist; finally nail sides and ends.



Method of erecting frame for Sheetrock
Note the absence of extra headers

CEILINGS—Erect ceilings first. Apply Sheetrock parallel with joists. Tack a strip of wood along the top of studs $\frac{1}{2}$ inch from ceiling joist. Then raise Sheetrock, rest one end on the strip, and place a "T" (made of 2 x 2's) under the board about one-third the distance from other end, to hold Sheetrock in place while nailing. Break all cross joints.

WALLS—Apply Sheetrock full length up and down. Edges must fit tightly against ceiling boards, as well as against adjoining boards. When necessary, scribe boards and saw to fit. Fill spaces above and below windows last, using cut pieces.

TREATING JOINTS—Caution: *Do not use Plaster of Paris, Wall Plaster or Putty.* Use only Sheetrock Finisher to conceal joints and nail heads. See directions for application on page 49.

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SHEETROCK FINISHER



Sheetrock Finisher Carton

SHEETROCK FINISHER is a specially prepared material, far superior to so-called "joint fillers," and with none of the disadvantages of the old type of plaster filler. When mixed with water, Sheetrock Finisher forms a putty cement, which is easily, quickly and economically applied with a painter's scraping knife. It is used to conceal joints, spot nail heads, and repair surface abrasions caused in handling.

Directions for Mixing and Applying

All trim must be applied before starting to finish joints. All nails must be driven with heads slightly below the surface. If any boards are bruised or corners broken in erecting, cut away or sandpaper all loose paper so that Sheetrock Finisher will have a firm base. Mix Sheetrock Finisher in a small shallow pan, similar to a single-loaf bread pan. Use a semi-elastic bladed scraping knife, 3 inches wide, to apply Finisher. Mix only sufficient Finisher to last 15 or 20 minutes. It is important that the container and mixing tools be absolutely clean and free from hardened Finisher. If Sheetrock Finisher hardens before it is used, do not mix it with additional water, but throw the material away, clean the container, and mix a new batch.

The first time over the joints hold the blade of the scraping knife parallel with the joint and "butter" the Finisher into the joints, at the same time covering the nail heads on each side of the joints. Work enough Finisher into the joints to bring to a smooth, flush surface. Then, holding the sharp edge of the knife at right angles to the joint, smooth out evenly. After the first application of Finisher has set, use a slightly thinner mixture to obtain the final finish. Spot all intermediate nail heads with Finisher. When Finisher has dried over the joints, remove any roughness by the use of No. 1½ sandpaper. Sheetrock Finisher must be allowed to dry thoroughly before applying decorations.

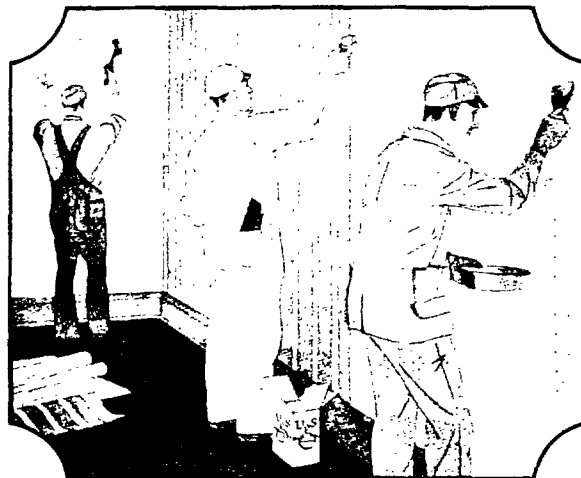
Supplied in 5-lb. packages. One package should finish joints and cover nail heads for 500 square feet of Sheetrock.



Scraper knife used to apply Sheetrock Finisher. We can furnish these knives.

Directions for Decorating Sheetrock

Sheetrock can be painted, calcimined or wall-papered. Except when walls are to be paneled, always treat joints and nail heads with Sheetrock Finisher (see page 49) and permit it to dry thoroughly before applying the decoration.



Sheetrock takes all decorations, including wall paper.

WALL PAPER. Before wall-papering use a varnish size. It makes possible the easy removal of the paper before redecorating, and insures better results than if no size or if glue size be used.

PAINTING. See that the surface of Sheetrock is absolutely clean, dry, and free from dust. Use a priming coat of color size, made by mixing equal parts of varnish size and paint of the desired color. Apply uniformly and carefully. Stipple over joints to remove smoothness. Allow the priming coat to dry at least twenty-four hours before applying the first coat of paint. A stipple finish is recommended.

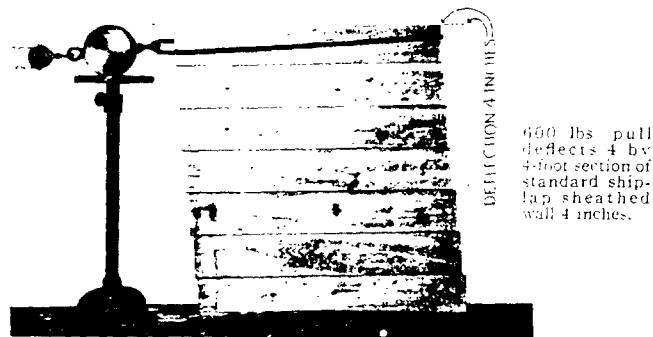
CALCIMINE. Before calcimining apply a varnish size, which will permit the calcimine to be easily washed off before redecorating.

NOTE—A large illustrated sheet containing complete instructions for applying and decorating Sheetrock will be sent on request. Dealers should have a supply of these sheets and send one with every delivery of Sheetrock.

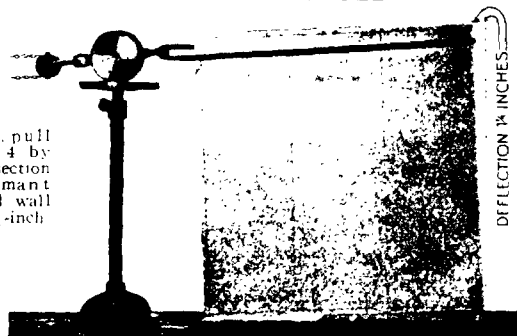
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Plaster Boards Instead of Wood Sheathing

THE primary purpose of Adamant Plaster Board is to take the place of wood or metal lath. Sheetrock, the fireproof wallboard, takes the place of both lath and plaster. Because these boards render double the usual fire protection and insulation to a house, and possess great strength and rigidity, they are also extensively used in place of wood sheathing.



900 lbs. pull
deflects 4 by
4-foot section
of Adamant
sheathed wall
only 1 1/4 inch



To determine the strength of plaster boards when used in place of wood sheathing, the following test was conducted by Professor G. F. Gebhart of the Armour Institute of Technology, Chicago, Illinois.

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On a frame (see illustration on page 51) 4 by 4 feet square, made of 2-inch by 4-inch studs spaced 16 inches on centers, nailed securely top and bottom to a 2-inch by 4-inch strip, the shiplap sheathed test board withstood 600 pounds horizontal pull, with a deflection of 4 inches out of plumb, before it failed. The same kind of frame (see illustration on page 51), sheathed with Adamant Sheathing Board withstood a pull of 900 pounds and was only $1\frac{1}{4}$ inches out of line when the studs pulled away from the lower sill, which was securely clamped down before the test was made.

These results prove conclusively that wood framing sheathed with Plaster Board instead of the usual shiplap, produces a stronger building that is more resistive to wind stresses, settling and lumber shrinkage, all of which warp and twist a building from its original shape. The use of Plaster Board Sheathing, therefore, offers far greater protection than wood sheathing from plaster cracks, split floors, distorted trim, and door and window troubles.

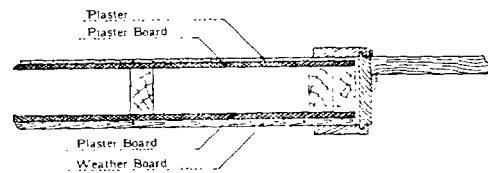


FIGURE 1—Using weatherboard directly over plaster board.

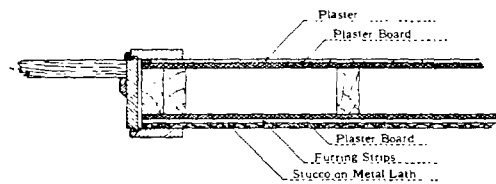


FIGURE 2—Stucco and metal lath applied over plaster board.
Furring strips used

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 FIREPROOFING SPECIALTIES

IN addition to a complete line of wall plasters and finishing plasters, the United States Gypsum Company produces the following fireproofing specialties for use in all classes of fireproof buildings:

PYROBAR PARTITION TILE
PYROBAR BEAM AND COLUMN COVERING
JESTER-SACKETT SOLID PARTITIONS
JESTER-SACKETT HOLLOW PARTITIONS
JESTER-SACKETT SUSPENDED CEILINGS
PYROBAR FLOOR TILE
PYROBAR SHORT SPAN ROOF TILE
PYROBAR LONG SPAN ROOF TILE
PYROFILL MONOLITHIC FLOORS AND ROOFS
PYROBAR ROOF INSULATING TILE
SACKETT SOFFITT CEILINGS

Engineering Service

EXPERT engineering service will be rendered by us in the selection of the type of construction best suited to the purpose of each building. Designs, detailed plans and specifications will be drawn up without cost. We also furnish estimates and bids. Our Fireproofing Department contracts for the erection of all our specialties which are described on the following pages.

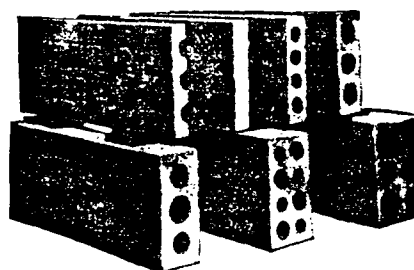
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PYROBAR PARTITION TILE



Approved by the National Board of Fire Underwriters



TYPES OF PYROBAR PARTITION AND FURRING TILE

Pyrobar Partition Tile consist of 96 per cent gypsum and 4 per cent fibre. They are machine moulded, insuring accurate proportions and even distribution of gypsum, fibre and water; the result being a tile of uniform size, weight, strength and density. The tile are 30 inches long, 12 inches high and from $1\frac{1}{2}$ to 6 inches thick.

Pyrobar Partition Tile are used in all types and classes of fire-proof buildings as follows:

Non-bearing corridor walls; partitions; wall furring, false columns and pilasters; construction fire division walls; elevator, stairway and dumb-waiter enclosures; light wells, pipe chases, heat and vent ducts; column, beam, girder and other steel protection; partitions and corridor walls in merchandise storage warehouses.

Advantages

Pyrobar tile will not contract or expand, spall or disintegrate under actual fire conditions.

Pyrobar tile prevent sound transmission and are non-conductors of heat and cold.

Pyrobar tile are light in weight, easily erected and substantially reduce the dead load.

Pyrobar will not stain through the plaster and ruin the decorations.

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Sizes and Weights of Pyrobar Partition Tile

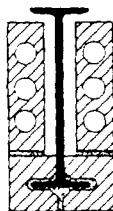
Size of Pyrobar Tile	For Ceiling Heights up to	Weight Tile per sq. ft. Lbs.	Size of Pyrobar Tile	For Ceiling Heights up to	Weight Tile per sq. ft. Lbs.
1½ in. Split (1½"x12"x30")	Furring	4.9	4-in. Hollow (4"x12"x30")	17 feet	13.0
2-in. Split (2"x12"x30")	Furring	6.4	5-in. Hollow (5"x12"x30")	25 feet	15.6
2-in. Solid (2"x12"x30")	10 feet	9.4	6-in. Hollow (6"x12"x30")	30 feet	16.6
3-in. Hollow (3"x12"x30")	13 feet	9.9			
3-in. Solid (3"x12"x30")	15 feet	13.0			

(For complete data and details write for Special Bulletin.)

Pyrobar Beam and Column Protection

In the intense heat of a fire, Pyrobar slowly calcines on the side exposed to the fire. The calcined portion does not spall off or disintegrate as in other "fireproof" materials, but adheres to the tile and forms additional protection, reducing the rate of calcination as the fire progresses. The temperature of the side opposite to the fire rarely exceeds 188 degrees Fahrenheit and cannot exceed 212 degrees Fahrenheit.

In addition to being the ideal material for steel protection, Pyrobar Tile, made in large units are more quickly installed with less labor, more easily cut and fitted to columns, beams, and girders and consequently cost less in place than other materials less efficient in protection.



Pyrobar beam protection

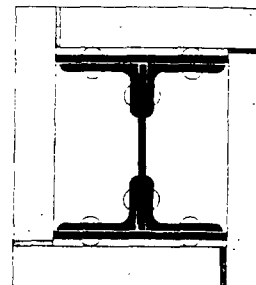
The prime object of "fireproofing" structural steel is not so much to prevent the destruction of the steel by fire as to prevent its loss of strength when subjected to high temperatures.

The Pyrobar system of beam and girder protection consists of shoes which fit closely over the lower flanges of the beams as illustrated. These are of such dimensions as will provide 2 inches of covering at all parts of the flange. Sides of beams are protected by Hollow Pyrobar Tile as shown.

Pyrobar Column Protection

Using solid Pyrobar tile with a minimum thickness of 2 inches, this system of column covering will withstand the effect of 1900 degrees Fahr. continuous heat for a duration of 2 hours without raising the temperature of the steel column over a maximum of 212 degrees Fahr.

Full details and specifications covering the use of Pyrobar Tile for all types of beam and column protection will be furnished on request.



Pyrobar Column Protection

Specifications for Pyrobar Partition and Furring Tile

PARTITIONS.—Unless otherwise specified or shown, all partitions shall be built of UNITED STATES GYPSUM COMPANY'S Pyrobar Tile, of thickness indicated on plans. All partitions shall be started on the fireproof floor, and the tile shall be set plumb, straight and true, and shall be wedged at ceiling and slushed with mortar. The corners of all partitions shall be built log cabin fashion, the tile alternating back and forth.

FURRING.—All outside walls where shown on plans, shall be furred with Pyrobar Tile of thickness and type indicated on plans, laid up against the wall. Where solid or hollow furring tile are used, these shall be securely spiked to the wall every square yard with 10d steel cut nails.

SHAFTS, OPENINGS AND DUCTS.—All pipe chases, dumbwaiter shafts, heating and vent ducts, etc., where shown on plans, shall be constructed with 2-in. solid Pyrobar Tile, unless otherwise specified.

MORTAR AND LAYING.—All Pyrobar Tile shall be laid up in mortar composed of any brand of the UNITED STATES GYPSUM COMPANY'S unfibred gypsum cement plaster (retarded for 4-hour set) 1 part plaster to 3 parts, by weight, of clean, sharp, dry sand, thoroughly mixed. (Important: Do not use Portland cement or lime mortar.) No mortar shall be re-tempered. 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. All partitions coming in contact with existing walls shall be anchored by driving spikes into the walls in the joints of each course. The wood door

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bucks shall be anchored to Pyrobar Tile by driving 10d cut nails into every course of tile.

LINTELS.—Unless otherwise specified or shown, the Pyrobar Tile over all openings shall be erected by laying in the form of jack arches. Skewbacks shall be cut in all tile over jambs; intermediate tile shall be leveled and a key tile set in the center.

WOOD FRAMES.—The carpenter contractor shall set and secure the rough bucks for openings ahead of the contractor for this work so as to cause no delay. These bucks shall be left plumb and true by the carpenter and shall be made of 2-in. lumber of the same width as the thickness of the partitions, and there shall be $\frac{1}{2}$ by 2 $\frac{3}{4}$ -in. grounds nailed to the bucks, forming a rabbet to receive the Pyrobar Tile.

Chair rail, picture mould and plastering grounds shall be nailed directly to Pyrobar by reverse, staggered nailing.

ATTACHING TRIM, GROUNDS, ETC.—Baseboards, shall be fastened by nailing a 1 by 12-in. wood nailing block, of the width of the tile to one end of each Pyrobar Tile in base course before laying up tile, these nailing blocks to be furnished and nailed to tile by carpenter contractor, but to be set by this contractor.

For the purpose of attaching heavy toilet fixtures, etc., 2-in. nailing blocks of the width of the tile shall be spiked to the tile and laid up in the wall.

Blackboards shall be securely fastened by attaching to a $\frac{3}{8}$ -in. wood nailing block, the width of the tile, which block shall be spiked to Pyrobar laid in place.

PLASTERING.—See specifications for plastering Pyrobar Gypsum Tile, Nos. 15, 26 or 30, pages 32, 33 and 34.

Specifications for Pyrobar Beam and Column Covering

COLUMN COVERING.—All exposed interior columns shall be covered with Pyrobar Tile, of thickness indicated on plans. These tile shall be laid in log cabin fashion and the vertical joints shall be broken.

GIRDER AND TRUSS COVERING.—All girders, beams and trusses not specified to be covered with brick or concrete shall be covered with Pyrobar Beam Covering Tile in accordance with the standards of the UNITED STATES GYPSUM COMPANY.

MORTAR AND LAYING.—See specifications for mortar and laying Pyrobar Gypsum Tile on opposite page.

PLASTERING.—See specifications for plastering Pyrobar Tile, Nos. 15, 26 or 30, pages 32, 33 and 34.

UNITED STATES GYPSUM COMPANY • CHICAGO

JESTER-SACKETT SYSTEM OF PARTITIONS AND SUSPENDED CEILINGS



JESTER-SACKETT Solid Partition in Course of Construction
Clipping U. S. G. Plaster Board to Channel Studs by means of Steel Clips.

THE Jester-Sackett System of non-bearing partitions and suspended ceilings provides high-class fireproof construction at low ultimate cost. It employs the use of $\frac{3}{8}$ -inch or $\frac{1}{4}$ -inch U. S. G. Plaster Board, fastened to light steel channels by means of metal clips. It is adapted to any type of building.

Advantages

The U. S. G. Plaster Board, unlike any other type of lathing material, is an effective barrier against fire even when unplastered. The construction when plastered is entirely incombustible, and has such low heat conductivity that the temperature of the side opposite the fire is held well below the ignition point.

Jester-Sackett partitions provide sound resistance equal to that of any form of incombustible lath and stud partitions.

Jester-Sackett Construction possesses strength and rigidity superior to that of any type of open lath and channel stud construction.

It provides a smooth, rigid and absolutely true plastering surface, to which the plaster adheres perfectly. All waste and excess plaster required with open, flexible lathing material is eliminated.

The simplicity of the construction makes for speedy erection. No special tools are required, and standard sizes of board and channels are used.

Jester-Sackett Solid Partitions

In the construction of solid partitions $\frac{3}{4}$ -inch standard hot or cold-rolled channel studs, spaced 24 $\frac{3}{4}$ inches on centers, are fastened securely to the floor and ceiling, to which the rigid sheets of 24-inch x 23-inch plaster board, $\frac{1}{4}$ or $\frac{3}{8}$ inch thick, are locked by means of steel clips.

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Quantities of Material Required per Square Yard of Solid Partition

Board		Studs		Clips		Weight per Sq. Ft. of Partition	
Size	Square Feet	Size	Lineal Feet	Type	No. Req'd	Without Plaster	Finished to $\frac{3}{8}$ " Grounds
$\frac{3}{4}$ " or 1" x 24" x 32"	9	$\frac{3}{4}$ "	5 $\frac{1}{2}$	No. 1	6	2 $\frac{1}{2}$ lbs.	13 lbs.
				No. 2	6		

Jester-Sackett Hollow Partitions

All sizes of Jester-Sackett Hollow Partitions require *one size of channel studs only*— $\frac{3}{4}$ -inch cold or hot rolled, spaced 16 inches on centers, to which $\frac{3}{8}$ -inch plaster board, 18-inch by 32-inch is fastened by means of patented clips.

For a partition of 3 inches finished thickness, the $\frac{3}{4}$ -inch studs are placed in a single straight line, 16 inches on centers, fastened securely to the floor and ceiling. For 4-inch, 5-inch, and 6-inch finished thicknesses, the same size studs and spacing are used, but the channels are staggered. The clips maintain the alignment of the board and proper thickness of the partition, and also provide the necessary side stiffness.

Quantities of Material Required per Square Yard of Hollow Partition

Finished Thickness $\frac{3}{8}$ " Grounds	Hollow Space Between Boards	Board		Studs		Clips		Wt. per Sq. Ft. of Partition	
		Size	Sq. Ft.	Size	Lin. Ft.	Type	No. Req'd	Without Plaster	Finished
3"	1"	$\frac{3}{8}$ " x 18" x 32"	18	$\frac{3}{4}$ "	7 $\frac{1}{2}$	No. 6	10	4 $\frac{1}{4}$ lbs.	11 $\frac{3}{4}$ lbs.
4"	2"	$\frac{3}{8}$ " x 18" x 32"	18	$\frac{3}{4}$ "	7 $\frac{1}{2}$	No. 8	10	4 $\frac{1}{4}$ lbs.	11 $\frac{3}{4}$ lbs.
5"	3"	$\frac{3}{8}$ " x 18" x 32"	18	$\frac{3}{4}$ "	7 $\frac{1}{2}$	No. 9	10	4 $\frac{1}{4}$ lbs.	12 lbs.
6"	4"	$\frac{3}{8}$ " x 18" x 32"	18	$\frac{3}{4}$ "	7 $\frac{1}{2}$	No. 10	10	4 $\frac{1}{4}$ lbs.	12 lbs.

Jester-Sackett Suspended Ceilings

The Jester-Sackett suspended ceiling is similar in construction to the hollow partition set in horizontal position, except that the upper layer of plaster board is omitted. The framework consists of $\frac{3}{4}$ -inch hot or cold-rolled channels, 16 inches on centers, wired to 1 $\frac{1}{2}$ -inch channel runners, 4 feet on centers, which in turn are supported by hangers every 4 feet. $\frac{3}{8}$ -inch by 18-inch by 32-inch plaster board is then clipped to the $\frac{3}{4}$ -inch channels by "No. 6" clips.

A strong, rigid, uniform ceiling is provided, which will not sag, or waste plaster. Two-coat plaster work only is required.

Quantities of Materials Required per Square Yard of Suspended Ceiling

Board	Channels		Clips		Weight per Sq. Ft. of Ceiling	
	Size	Lineal Feet	Type	No. Required	Without Plaster	Finished to $\frac{3}{8}$ " Grounds
9 square feet	$\frac{3}{4}$ "	7				
$\frac{3}{8}$ " x 18" x 32"	1 $\frac{1}{2}$ "	2 $\frac{1}{2}$	No. 6	9	2 $\frac{1}{2}$ lbs.	6 $\frac{1}{4}$ lbs.

Specifications for Jester-Sackett Solid Partitions

All partitions shown on plans, except as otherwise noted, are to be of 2-inch solid Jester-Sackett construction, consisting of U. S. G. Co.'s Plaster Board clipped to $\frac{3}{4}$ -inch cold or hot-rolled channel iron studs. The flanges of the studs shall not exceed $\frac{3}{8}$ inch. Channel studs shall be spaced 24 $\frac{3}{4}$ -inch centers and fastened in a suitable manner to floors and ceilings.

Plaster Board, $\frac{1}{4}$ -inch or $\frac{3}{8}$ -inch thick, 24-inch by 32-inch in size, shall be placed between the channels and clipped to same with Jester clips, spaced 9-inch centers, starting 4 $\frac{1}{2}$ inches from floor or ceiling.

Carpenter contractors are to attach, by wiring to the steel studs, $\frac{5}{8}$ -inch grounds for plastering, picture moulds, base boards and chair rails, where required, and are to set all bucks. Bucks shall be made from 2-inch by 2-inch pine, and properly braced and set.

Specifications for Jester-Sackett Hollow Partitions

Jester-Sackett (specify thickness) Hollow Partitions are to be constructed with $\frac{3}{4}$ -inch channels, spaced 16 inches on centers, and securely fastened to floors and ceilings. On each side of the channels place United States Gypsum Co.'s Plaster Board, 18-inch by 32-inch in size and $\frac{3}{8}$ -inch thick, and clip to each channel with Jester $\frac{3}{4}$ -inch clips, breaking all perpendicular joints between floor and ceiling. Partition requires $\frac{3}{8}$ inch of Gypsum Plaster on a side. Finished partition to be (specify thickness) thick.

Carpenter contractor is to place grounds for plastering, picture mould, base and chair rail where required, and is to set all bucks. Bucks are to be made from 2-inch pine, of width of finished wall, and properly braced and set. (Note: For best results bucks should extend to ceiling.)

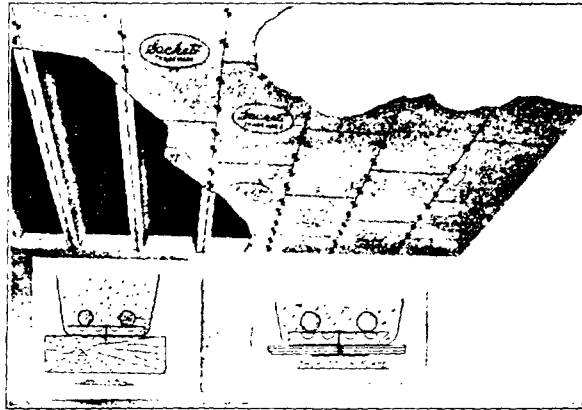
Specifications for Jester-Sackett Suspended Ceilings

All ceilings, where indicated to be suspended, shall be formed of Plaster Board with Jester Ceiling Clips. Plaster Board to be $\frac{3}{8}$ -inch thick, 18-inch by 32-inch in size, attached by means of Jester Clips to $\frac{3}{4}$ -inch hot or cold-rolled channels spaced 16 inches on centers. These $\frac{3}{4}$ -inch channels to be attached by means of No. 16 tie wire to 1 $\frac{1}{2}$ -inch channels spaced 4 feet apart, which latter are to be suspended from the construction above by $\frac{1}{4}$ -inch round rods or two No. 14 galvanized wires, not to exceed 4 feet on centers, bent around them and wired securely.

Hangers are to be provided and set in concrete by the mason contractor.

UNITED STATES GYPSUM COMPANY · CHICAGO

SACKETT SOFFIT CEILINGS



THE Sackett Soffit System possesses decided advantages over open lath for flat ceilings under reinforced concrete joist floors employing permanent or removable wood or metal forms.

By means of an easily installed steel clip embedded in the concrete, U. S. G. Plaster Board is quickly and securely fastened to the underside of the concrete joists to form the ceiling. These clips also act as a chair or spacer for the reinforcing steel.

Specifications for Sackett Soffit Ceilings

(To be placed in reinforced concrete specifications)

This contractor will install special combination reinforcing steel chairs and Sackett Ceiling Clips, 9 in. on centers, in all joists; same to be furnished by plastering contractor. Clips shall be placed in tees of beams and along walls, as well as in joists, so as to provide lines of support not more than 24 in. apart for all areas requiring plaster board.

(To be placed in plastering specifications)

This contractor shall supply required special Sackett Ceiling Clips. He shall install Sackett Plaster Board on all ceilings, unless otherwise specified; and shall then plaster same to a full $\frac{1}{2}$ -in.

PLASTERING—See specifications for plastering on Sackett Plaster Board, Nos. 12, 23 or 30, pages 33 to 35.

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PYROBAR FLOOR TILE



PYROBAR Floor Tile are made of "Structolite," a dense specially prepared gypsum. The tile are cast in steel moulds, uniform in size, 19" wide and 18" long, 6", 8", 10" or 12" deep. All tile are cast with one end piece integral, thus providing a seal at the end of every row of tile. Joist facers are made in standard widths of 5" and are 1" thick and 12" long. Special widths of facers will be made where the design calls for joists of greater width.

SIZES AND WEIGHTS

Size of Tile	Weight per lineal foot
19" x 18" x 6"	26 pounds
19" x 18" x 8"	29 pounds
19" x 18" x 10"	35 pounds
19" x 18" x 12"	41 pounds

Joist facers 5' x 12' x 1"—2 pounds.

Advantages

Pyrobar Floor Tile are rapidly and economically installed because they are light in weight and easily handled. No nailing is required to hold the tile in place on the forms.

Spans up to thirty feet are permissible with this system in buildings where floor loads are light because the light weight of the tile materially reduces the dead load carried by joists and girders. The reduced dead load assures a saving in reinforcing steel and concrete required for columns and footings.

Formwork is reduced to a minimum, as the large units are placed 24 inches on centers. A uniform plastering base without the use of suspended or soffit ceilings is obtained by using joist facers between the voids. This gives a smooth plastering surface of gypsum ready for the application of plaster. This means a saving in labor and material and additional sound proofing qualities.

(For details and complete data write for Bulletin on Floor Tile)

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Specifications for Pyrobar Floor Tile

The floors and roof shall consist of the Pyrobar Floor Tile System of reinforced concrete construction, as shown on the accompanying plans, and all material and workmanship shall be in strict accordance with these plans and specifications.

The tile for the floor and roof construction shall be Pyrobar Floor Tile, manufactured by the UNITED STATES GYPSUM COMPANY.

The tile shall be of the sizes indicated on the drawings.

The floor tile shall be accurately spaced to secure the exact joist widths shown. Pyrobar joist facers, if required, shall be laid directly on the forms between the rows of tile. Care must be taken to see that the exact length of joist, as determined by the width of beam tee, is maintained.

In case the length is in odd feet and inches, the floor tile shall be sawed to fit. After all floor tile have been placed, wet tile and forms thoroughly before the concrete is poured.

For Plastering

Caution—Do not use Portland cement or lime mortar for plastering.)

Plaster—To be UNITED STATES GYPSUM COMPANY Cement Plaster or Wood Fibre Plaster or Prepared (Sanded) Plaster mixed and applied according to manufacturers' directions. (See pages 32-35.)

Note—Architects should specify which kind is desired.)

Grounds—All grounds shall be one-half inch.

Base Coat-Cement Plaster—Use any brand of UNITED STATES GYPSUM COMPANY Unfibred Cement Plaster, which shall be mixed (not machine mixed), with clean, sharp sand, one (1) part plaster to three (3) parts sand by weight.

Base Coat-Wood Fibre—Use any brand of UNITED STATES GYPSUM COMPANY Wood Fibre Plaster mixed one (1) part plaster to one (1) part clean, sharp sand by weight.

Applying—All base coats shall be applied in one coat well filled out to grounds, darbied to a straight line and even surface ready to receive the finish coat. When Wood Fibre Plaster is used, the surface of the base coat is to be left rough or broomed before it is set so as to serve as a bond for the finish.

Finish—Use any brand of UNITED STATES GYPSUM COMPANY Trowel or Sand Float Finishes (Prepared Finishes are recommended), mixed and applied according to directions on pages 36 and 37.

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PYROBAR ROOF TILE



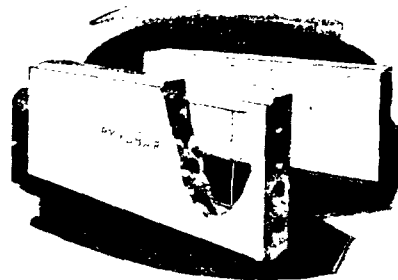
PYROBAR Roof Tile are made of "Structolite," a specially prepared gypsum, and are reinforced to carry the full roof load. The tile are factory moulded, insuring uniformity in size and weight.

Pyrobar Roof Tile are made in three types: 30-inch type, (solid and hollow); Long Span Hollow type, (with or without Lap Joint); Long Span Channel type, (with or without Lap Joint). These types meet all the requirements of fireproof roof design.

Advantages of All Types

Pyrobar Roof Tile are low in first cost. The maintenance cost is nothing as they are fireproof and permanent and are not affected by deteriorating action of sulphur fumes. Because of their light weight they effect a saving in supporting steel. The units are easily and quickly placed in any weather. Pyrobar Roof Tile are superior insulators of heat, preventing condensation and stopping heat losses, permitting large savings in first cost and maintenance cost of heating equipment. They make the building warmer in winter and cooler in summer.

These tile are suited to any type of roof and any kind of roof covering can be applied over them. They can be easily sawed to fit any irregular roof surfaces.



30-inch type Pyrobar Roof Tile

UNITED STATES GYPSUM COMPANY · CHICAGO

30-Inch Type Pyrobar Roof Tile

(See Illustration on Opposite Page)

These tile are made in two types, "Solid" and "Hollow." Both have face dimensions of 12 inches by 30 inches. The solid tile are 3 inches thick; the hollow tile are $3\frac{1}{2}$ inches thick. The tile are laid on tee iron purlins and the spaces between tile and the flange of the tee filled with gypsum grout, forming a homogeneous roof deck with even surface.

(For details and complete data write for special bulletin)

SIZES AND WEIGHTS

12" x 30" x 3"—15 pounds per square foot.

12" x 30" x $3\frac{1}{2}$ "—15 pounds per square foot.

12" x 30" x 3" (extra dense)—17 pounds per square foot.

Long Span Hollow Type Pyrobar Roof Tile



These tile have been developed to meet the demand for a roof deck presenting a uniformly flat ceiling surface and possessing maximum insulation. They are made in 18-inch widths, 5 and 6-inch thicknesses, and in various lengths up to 8 feet to fit various spacing of purlins.

Special Advantages

These tile can be laid directly on the steel purlins providing 5 to 6 inches insulation at the point where condensation is most likely to occur.

The finished roof presents a flat unbroken ceiling surface, white in color and giving the maximum light reflection.

Depth in Inches	5	6
Wt., lbs. per sq. ft.	20	25

(For details and complete data write for special bulletin)

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Long Span Channel Type Pyrobar Roof Tile



These tile are made in 18-inch widths, 5 and 6 inches thick and 4 to 8 feet long. They are laid directly on the steel or wood frame and the joints filled with gypsum grout, forming a monolithic roof deck.

(For details and complete data write for Special Bulletin)

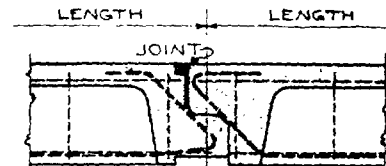
Sizes and Weights

Depth in Inches	5	6
Wt., lbs. per sq. ft.	17.0	19.0

Lap Joint Pyrobar Roof Tile



Hollow Type



Channel Type

Both the Long Span Hollow Type and Long Span Channel Type of Pyrobar Roof Tile can be furnished with Lap Joint as illustrated. The Lap Joint is designed to provide full bearing for each end of tile where channel purlins having a flange less than 2½ inches are used.

(For details and complete data write for bulletin on lap joint roof tile)

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**Specifications for Pyrobar Roof Tile
Thirty-Inch Type**

Roofs—All roofs as shown on plans, unless otherwise noted, shall be constructed of (3 by 12 by 30-inch solid) or (3½ by 12 by 30-inch hollow) Pyrobar Roof Tile, as manufactured and erected by the UNITED STATES GYPSUM COMPANY. The tile shall be laid tightly on Tee irons without mortar, all joints on top surface of roof to be pointed with gypsum mortar, composed of one part unfibred gypsum cement plaster and two parts clean, sharp sand.

Where slate or ornamental tile is to be nailed to the roof deck, use Solid Pyrobar Extra Dense Nailing Roof Tile

Curbs—Curbs under monitor and sawtooth sash, also the end walls of monitors and sawteeth, shall be constructed of 3-inch solid Pyrobar set in gypsum cement mortar—joints to be well bedded and struck.

Nails—Flat-headed nails shall be used to fasten roof covering and shall have at least 1½ inch penetration into tile

Long Span Channel or Hollow Type

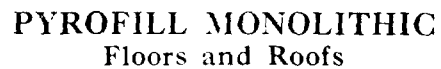
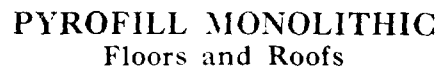
Roofs—All roofs as shown on plans, unless otherwise noted, shall be constructed of Pyrobar Long Span Roof Tile, as manufactured and erected by the UNITED STATES GYPSUM COMPANY. The tile shall be placed directly on the roof supports without mortar and with sides tight together. All joints on top surface of roof to be pointed with gypsum mortar composed of one part unfibred gypsum cement plaster and two parts of clean sharp sand.

Where slate or ornamental tile is to be nailed to the roof deck, use Pyrobar Long Span Roof Tile with 2-inch thick nailing deck.

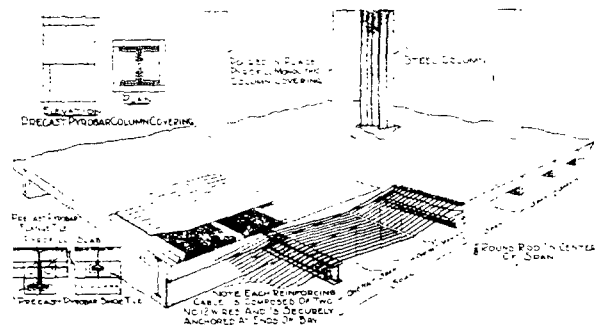
Curbs—Curbs under monitor and sawtooth sash, also the end walls of monitors and sawteeth, shall be constructed of 3-inch solid Pyrobar Tile set in gypsum cement mortar, joints to be well bedded and struck.

Nails—Flat-headed nails shall be used to fasten roof covering, and shall have at least 1½ inch penetration into the gypsum tile.

UNITED STATES GYPSUM COMPANY - CHICAGO



THIS is a system for constructing light weight, strong, fireproof, poured-in-place floors and roofs of gypsum for steel frame structures. Forms are used similar to those used in constructing concrete floors and roofs. Reinforcement is provided by galvanized steel cables of two strands of number 12 wire spaced to take care of the entire slab load. These cables are securely anchored at both ends of bays to the steel frame.



Advantages

Pyrofill floors and roofs weigh only 50 pounds per cubic foot (one-third the weight of concrete). This reduction in dead load permits the use of lighter supporting steel with a consequent saving in cost.

Initial set occurs in from ten to fifteen minutes and forms may be removed in two hours after pouring as compared with several days when concrete is used. This quality enables the contractor to use a smaller amount of form lumber.

Gypsum being a non-conductor of heat or cold, Pyrofill possesses high insulation qualities preventing heat radiation through roofs and floors.

(For details and complete data write for Bulletin on Pyrofill Floors and Roofs.)

UNITED STATES GYPSUM COMPANY · CHICAGO

SPECIFICATIONS

For Installing Pyrofill Monolithic Floors and Roofs

Unless otherwise shown all slabs shall be constructed of Poured Gypsum in accordance with the System of the UNITED STATES GYPSUM COMPANY known as Pyrofill Monolithic Slab construction. This contractor shall provide necessary forms, reinforcing cables, Pyrofill and all labor required for his work.

The forms shall be made in a workmanlike manner, of suitable material, and shall be carefully leveled up so as to insure a uniform depth of slab. Forms shall be cleaned before each re-use, and shall be wet down immediately before placing the Pyrofill. All openings in slabs for down spouts, soil pipes, vents, etc., shall be located by purchaser before the slab is poured, as no cutting of cables will be permitted after slabs are poured.

Reinforcing shall consist of galvanized steel cables made by twisting two No. 12 wires. These cables shall be calculated to take the entire slab load and shall be fastened at their ends in such manner as to develop the full strength required. In no case shall the stress in the cables exceed 20,000 pounds per square inch, or more than 20 per cent of the ultimate strength. The spacing of these cables and the depth of slabs shall conform to the standards of the UNITED STATES GYPSUM COMPANY. The cables shall be drawn tight and fastened to suitable anchors and brought to uniform tension. Care shall be used in placing the tension rods to see that the cables shall not be brought closer than $\frac{1}{2}$ inch to the under surface of the slab. After cables are in place all workmen of this and other contractors shall be prohibited from walking thereon.

The Pyrofill composition used shall consist of a uniform mixture of calcined gypsum and water, into which is stirred not over 15 pounds by weight of wood fibre to every 100 pounds of calcined gypsum. The top surface of the slab shall be screeded to as smooth a surface as practicable to receive the waterproof covering.

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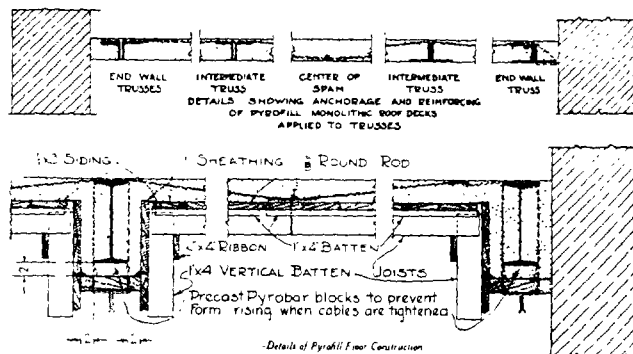
If the under side of the slab is to be painted or plastered such work shall not be done until the waterproof covering has been applied and the slab is thoroughly dry.

All curb walls, ends of monitors, etc., shall be constructed of 3-inch Pyrobar Tile neatly laid up in gypsum mortar, or of poured construction similar to roof slabs.

The steel contractor shall provide steel framing around all openings more than 12 inches in diameter, and such steel bracing as is required to take the horizontal pull of cables where anchored, such as at end bays of building and at all openings.

The waterproof covering shall be applied within 30 days after completion of roof slab. Plank runways shall be laid on the slab before any wheeling whatever is done. Plank supports shall be laid from purlin to purlin to take any heavy or concentrated loads which may be applied to the slab.

Insert in steel specifications: Steel contractor shall submit drawings to the UNITED STATES GYPSUM COMPANY, for checking in order to insure that all points are properly taken care of for the correct installation of the Pyrofill Monolithic System.



UNITED STATES GYPSUM COMPANY · CHICAGO

AUTOMATIC WALL MEASUREMENT TABLES

Showing Total Number of Square Yards in Rooms of Various Sizes

Architects, Contractors, Plasterers and Dealers will find these tables valuable in figuring the amount of Gypsum Plaster required for given areas. Each table has been verified and can be relied upon as correct.

Directions for Use

EXAMPLE:—To obtain the number of square yards in a room 15x15x9. Turn to the table giving measurement of rooms with 9-foot ceilings; follow down the column of figures on the left until you come to 15, then follow the figures to the right until you come to the figures directly under the figure 15, at the top of the page; the answer is 85 square yards. When the half-foot comes in the dimensions of a room, both ways, take the next largest number on one side. When it comes on one side only add one yard and it will be close.

Number of Square Yards and Feet in Rooms with 7-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	10.3	12.2	14.1	16.0	17.8	19.7	21.6	23.5	25.4	27.3	29.2	31.1	33.0	34.8	36.7	38.6	40.5	42.4	44.3	46.2
4	12.2	14.2	16.2	18.2	20.2	22.2	24.2	26.2	28.2	30.2	32.2	34.2	36.2	38.2	40.2	42.2	44.2	46.2	48.2	50.2
5	14.1	16.2	18.3	20.4	22.5	24.6	26.7	28.8	31.0	33.1	35.2	37.3	39.4	41.5	43.6	45.7	47.8	50.0	52.1	54.2
6	16.0	18.2	20.4	22.6	24.8	27.1	29.3	31.5	33.7	36.0	38.2	40.4	42.6	44.8	47.1	49.3	51.5	53.7	55.8	58.2
7	17.8	20.2	22.5	24.8	27.2	29.5	31.8	34.2	36.5	38.8	41.2	43.5	45.8	48.2	50.5	52.8	55.2	57.5	59.8	62.2
8	19.7	22.2	24.6	27.1	29.5	32.0	34.4	36.8	39.3	41.7	44.2	46.6	49.1	51.5	54.0	56.4	58.8	61.3	63.7	66.2
9	21.6	24.2	26.7	29.3	31.8	34.4	37.0	39.5	42.1	44.6	47.2	49.7	52.3	54.8	57.4	60.0	62.5	65.1	67.6	70.2
10	23.5	26.2	28.8	31.5	34.2	36.8	39.5	42.2	44.8	47.5	50.2	52.8	55.5	58.2	60.8	63.5	66.2	68.8	71.5	74.2
11	25.4	28.2	31.0	33.7	36.5	39.3	42.1	44.8	47.6	50.4	53.2	56.0	58.7	61.5	64.3	67.1	69.8	72.6	75.4	78.2
12	27.3	30.2	33.1	36.0	38.8	41.7	44.6	47.5	50.4	53.3	56.2	59.1	62.0	64.8	67.7	70.6	73.5	76.4	79.3	82.2
13	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2
14	31.1	34.2	37.3	40.4	43.5	46.6	49.7	52.8	56.0	59.1	62.2	65.3	68.4	71.5	74.6	77.7	80.8	84.0	87.1	90.2
15	33.0	36.2	39.4	42.6	45.8	49.1	52.3	55.5	58.7	62.0	65.2	68.4	71.6	74.8	78.1	81.3	84.5	87.7	91.0	94.2
16	34.8	38.2	41.5	44.8	48.2	51.5	54.8	58.2	61.5	64.8	68.2	71.5	74.8	78.2	81.5	84.8	88.2	91.5	94.8	98.2
17	36.7	40.2	43.6	47.1	50.5	54.0	57.4	60.8	64.3	67.7	71.2	74.6	78.1	81.5	85.0	88.4	91.8	95.3	98.7	102.2
18	38.6	42.2	45.7	49.3	52.8	56.4	60.0	63.5	67.1	70.6	74.2	77.7	81.3	84.8	88.4	92.0	95.5	99.1	102.6	106.2
19	40.5	44.2	47.8	51.5	55.2	58.8	62.5	66.2	69.8	73.5	77.2	80.8	84.5	88.2	91.8	95.5	99.2	102.8	106.5	110.2
20	42.4	46.2	50.0	53.7	57.5	61.3	65.1	68.8	72.6	76.4	80.2	84.0	87.7	91.5	95.3	99.1	102.8	106.6	110.4	114.0
21	44.3	48.2	52.1	55.8	59.8	63.7	67.6	71.5	75.4	79.3	83.2	87.1	91.0	94.8	98.7	102.6	106.5	110.4	114.3	118.2
22	46.2	50.2	54.2	58.2	62.2	66.2	70.2	74.2	78.2	82.2	86.2	90.2	94.2	98.2	102.2	106.2	110.2	114.2	118.2	122.2
23	48.0	52.2	56.3	60.4	64.5	68.6	72.7	76.8	81.0	85.1	89.2	93.3	97.4	101.5	105.6	109.7	113.8	118.0	122.1	126.2
24	50.0	54.2	58.4	62.6	66.8	71.1	75.3	79.5	83.7	88.0	92.2	96.4	100.6	104.8	109.1	113.3	117.5	121.7	126.0	130.2

The amount indicated includes side walls and ceilings.

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Number of Square Yards and Feet in Rooms with 7 ft. 6 in. Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	29.0	31.0	33.0	35.0	37.0	39.0	41.0	43.0	45.0	47.0	49.0
4	13.0	15.1	17.2	19.3	21.4	23.5	25.6	27.7	29.8	32.0	34.1	36.2	38.3	40.4	42.5	44.6	46.7	49.8	51.0	53.1
5	15.0	17.2	19.4	21.6	23.8	26.1	28.3	30.5	32.7	35.0	37.2	39.4	41.6	43.8	46.1	48.3	50.5	52.7	55.0	57.2
6	17.0	19.3	21.6	24.0	26.3	28.6	31.0	33.3	35.6	38.0	40.3	42.6	45.0	47.3	49.6	52.0	54.3	56.6	59.0	61.3
7	19.0	21.4	23.8	26.3	28.7	31.2	33.6	36.1	38.5	41.0	43.4	45.8	48.3	50.7	53.2	55.6	58.1	60.5	63.0	65.4
8	21.0	23.5	26.1	28.6	31.2	33.7	36.3	38.8	41.4	44.0	46.5	49.1	51.6	54.2	56.7	59.3	61.8	64.4	67.0	69.5
9	23.0	25.6	28.3	31.0	33.6	36.3	39.0	41.6	44.3	47.0	49.6	52.3	55.0	57.6	60.3	63.0	65.6	68.3	71.0	73.6
10	25.0	27.7	30.5	33.3	36.1	38.8	41.6	44.4	47.2	50.0	52.7	55.5	58.3	61.1	63.8	66.6	69.4	72.2	75.0	77.7
11	27.0	29.8	32.7	35.6	38.5	41.4	44.3	47.2	50.1	53.0	55.8	58.7	61.6	64.5	67.4	70.3	73.2	76.1	79.0	81.8
12	29.0	32.0	35.0	38.0	41.0	44.0	47.0	50.0	53.0	56.0	59.0	62.0	65.0	68.0	71.0	74.0	77.0	80.0	83.0	86.0
13	31.0	34.1	37.2	40.3	43.4	46.5	49.6	52.7	55.8	59.0	62.1	65.2	68.3	71.4	74.5	77.6	80.7	84.8	87.0	90.1
14	33.0	36.2	39.4	42.6	45.8	49.1	52.3	55.5	58.7	62.0	65.2	68.4	71.6	74.8	78.1	81.3	84.5	87.7	91.0	94.2
15	35.0	38.3	41.6	45.0	48.3	51.6	55.0	58.3	61.6	65.0	68.3	71.6	75.0	78.3	81.6	85.0	88.3	91.6	95.0	98.3
16	37.0	40.4	43.8	47.3	50.7	54.2	57.6	61.1	64.5	68.0	71.4	74.8	78.3	81.7	85.2	88.6	92.1	95.5	99.0	102.4
17	39.0	42.5	46.1	49.6	53.2	56.7	60.3	63.8	67.4	71.0	74.5	78.1	81.6	85.2	88.7	92.3	95.8	99.4	103.0	106.5
18	41.0	44.6	48.3	52.0	55.6	59.3	63.0	66.6	70.3	74.0	77.6	81.2	85.0	88.6	92.3	96.0	99.6	103.3	107.0	110.6
19	43.0	46.7	50.5	54.3	58.1	61.8	65.6	69.4	73.2	77.0	80.7	84.5	88.3	92.1	95.8	99.6	103.4	107.2	111.0	114.7
20	45.0	49.8	52.7	56.6	60.5	64.4	68.3	72.2	76.1	80.0	84.8	87.7	91.6	95.5	99.4	103.3	107.2	111.1	115.0	118.8
21	47.0	51.0	55.0	59.0	63.0	67.0	71.0	75.0	79.0	83.0	87.0	91.0	95.0	99.0	103.0	107.0	111.0	115.0	119.0	123.0
22	49.0	53.1	57.2	61.3	65.4	69.5	73.6	77.7	81.8	86.0	90.1	94.2	98.3	102.4	106.5	110.6	114.7	118.8	123.0	127.0
23	51.0	55.2	59.4	63.6	67.8	72.1	76.3	80.5	84.7	89.0	93.2	97.4	101.6	105.8	110.1	114.3	118.5	122.7	127.0	131.2
24	53.0	57.3	61.6	66.0	70.3	74.6	79.3	83.3	87.7	92.0	96.3	100.7	105.0	109.3	113.6	118.0	122.3	126.6	131.0	135.3

The amount indicated includes side walls and ceilings.

BB024 0136

Number of Square Yards and Feet in Rooms with 8-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	11.6	13.7	15.8	18.0	20.1	22.2	24.3	26.4	28.5	30.6	32.7	34.8	37.0	39.1	41.2	43.3	45.4	47.5	49.6	51.7
4	13.7	16.0	18.2	20.4	22.6	24.8	27.1	29.3	31.5	33.7	36.0	38.2	40.4	42.6	44.8	47.1	49.3	51.5	53.7	56.0
5	15.8	18.2	20.5	22.8	25.2	27.5	29.8	32.2	34.5	36.8	39.2	41.5	43.8	46.2	48.5	50.8	53.2	55.5	57.8	60.2
6	18.0	20.4	22.8	25.3	27.7	30.2	32.6	35.1	37.5	40.0	42.4	44.8	47.3	49.7	52.2	54.6	57.1	59.5	62.0	64.4
7	20.1	22.6	25.2	27.7	30.3	32.8	35.4	38.0	40.5	43.1	45.6	48.2	50.7	53.3	55.8	58.4	61.0	63.5	66.1	68.9
8	22.2	24.8	27.5	30.2	32.8	35.5	38.2	40.8	43.5	46.2	48.8	51.5	54.2	56.8	59.5	62.2	64.8	67.5	70.2	72.8
9	24.3	27.1	29.8	32.6	35.4	38.2	41.0	43.7	46.5	49.3	52.1	54.8	57.6	60.4	63.2	66.0	68.7	71.5	74.3	77.1
10	26.4	29.3	32.2	35.1	38.0	40.8	43.7	46.6	49.5	52.4	55.3	58.2	61.1	64.0	66.8	69.7	72.6	75.5	78.4	81.3
11	28.5	31.5	34.5	37.5	40.5	43.5	46.5	49.5	52.5	55.5	58.5	61.5	64.5	67.5	70.5	73.5	76.5	79.5	82.5	85.5
12	30.6	33.7	36.8	40.0	43.1	46.2	49.3	52.4	55.5	58.6	61.7	64.8	68.0	71.1	74.2	77.3	80.4	83.5	86.6	89.7
13	32.7	36.0	39.2	42.4	45.6	48.8	52.1	55.3	58.5	61.7	65.0	68.2	71.4	73.6	77.8	81.1	84.3	87.5	90.7	94.0
14	34.8	38.2	41.5	44.8	48.2	51.5	54.8	58.2	61.5	64.8	68.2	71.5	74.8	78.2	81.5	84.8	88.2	91.5	94.8	98.2
15	37.0	40.4	43.8	47.3	50.7	54.2	57.6	61.1	64.5	68.0	71.4	74.8	78.3	81.7	85.2	88.6	92.1	95.5	99.0	102.4
16	39.1	42.6	46.2	49.7	53.3	56.8	60.4	64.0	67.5	71.1	74.6	78.2	81.7	85.3	88.8	92.4	96.0	99.5	103.1	106.6
17	41.2	44.8	48.5	52.5	55.8	59.5	63.2	66.8	70.5	74.2	77.8	81.5	85.2	88.8	92.5	96.2	99.8	103.5	107.2	110.8
18	43.3	47.1	50.8	54.6	58.4	62.2	66.0	69.7	73.5	77.3	81.1	84.8	88.6	92.4	96.2	100.0	103.7	107.5	111.3	115.1
19	45.4	49.3	53.2	57.1	61.0	64.8	68.7	72.6	76.5	80.4	84.3	88.2	92.1	96.0	99.8	103.7	107.6	111.5	115.4	119.3
20	47.5	51.5	55.5	59.5	63.5	67.5	71.5	75.5	79.5	83.5	87.5	91.5	95.5	99.5	103.5	107.5	111.5	115.4	119.5	123.5
21	49.6	53.7	57.8	62.0	66.1	70.2	74.3	78.4	82.5	86.6	90.7	94.8	99.0	103.1	107.2	111.3	115.4	119.5	123.6	127.7
22	51.7	56.0	60.2	64.4	68.8	72.8	77.1	81.3	85.5	89.7	94.0	98.2	102.4	106.6	110.8	115.1	119.3	123.5	127.7	132.0
23	53.8	58.2	62.5	66.8	71.2	75.5	79.8	84.2	88.5	92.8	97.2	101.5	105.8	110.2	114.5	118.8	123.2	127.5	131.8	136.2
24	56.0	60.4	64.8	69.3	73.7	78.2	82.6	87.1	91.5	96.0	100.4	104.8	109.3	113.7	118.2	122.6	127.1	131.5	136.0	140.4

The amount indicated includes side walls and ceilings.

BB024 0137

Number of Square Yards and Feet in Rooms with 8 ft. 6 in. Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	12.3	14.5	16.7	19.0	21.2	23.4	25.6	27.8	30.1	32.2	34.5	36.7	39.0	41.2	43.4	45.6	47.8	50.1	52.3	54.5
4	14.5	16.8	19.2	21.5	23.8	26.2	28.5	30.8	33.2	35.5	37.8	40.2	42.5	44.8	47.2	49.5	51.8	54.2	56.5	58.8
5	16.7	19.2	21.6	24.1	26.5	29.0	31.4	33.8	36.3	38.7	41.2	43.6	46.1	48.5	51.0	53.4	55.8	58.3	60.7	63.2
6	19.0	21.5	24.1	26.6	29.2	31.7	34.3	36.8	39.4	42.0	44.5	47.1	49.6	52.5	54.7	57.3	59.8	62.4	65.0	67.5
7	21.2	23.8	26.5	29.2	31.8	34.5	37.2	39.8	42.5	45.2	47.8	50.5	53.2	55.8	58.5	61.2	63.8	66.5	69.2	71.8
8	23.4	26.2	29.0	31.7	34.5	37.3	40.1	42.8	45.6	48.4	51.2	54.0	56.7	59.5	62.3	65.1	67.8	70.6	73.4	76.2
9	25.6	28.5	31.4	34.3	37.2	40.1	43.0	45.8	48.7	51.6	54.5	57.4	60.3	63.2	66.1	69.0	71.8	74.7	77.6	80.5
10	27.8	30.8	33.8	36.8	39.8	42.8	45.8	48.8	51.8	54.8	57.8	60.8	63.8	66.8	69.8	72.8	75.8	78.8	81.8	84.8
11	30.1	33.2	36.3	39.4	42.5	45.6	48.7	51.8	55.0	58.1	61.2	64.3	67.4	70.5	73.6	76.7	79.8	83.0	86.1	89.2
12	32.2	35.5	38.7	42.0	45.2	48.4	51.6	54.8	58.1	61.3	64.5	67.7	71.0	74.2	77.4	80.6	83.8	87.1	90.3	93.5
13	34.5	37.8	41.2	44.5	47.8	51.2	54.5	57.8	61.2	64.5	67.8	71.2	74.5	77.8	81.2	84.5	87.8	91.2	94.5	97.8
14	36.7	40.2	43.6	47.1	50.5	54.0	57.4	60.8	64.3	67.7	71.2	74.6	78.1	81.5	85.0	88.4	91.8	95.3	98.7	102.2
15	39.0	42.5	46.1	49.6	53.2	56.7	60.3	63.8	67.4	71.0	74.5	78.1	81.6	85.2	88.7	92.3	95.8	99.4	103.0	106.5
16	41.2	44.8	48.5	52.2	55.8	59.5	63.2	66.8	70.5	74.2	77.8	81.5	85.2	88.8	92.5	96.2	99.8	103.5	107.2	110.8
17	43.4	47.2	51.0	54.7	58.5	62.3	66.1	69.8	73.6	77.4	81.2	85.0	88.7	92.5	96.3	100.1	103.8	107.6	111.4	115.2
18	45.6	49.5	53.4	57.3	61.2	65.1	69.0	72.8	76.7	80.6	84.5	88.4	92.3	96.2	100.1	104.0	107.8	111.7	115.6	119.5
19	47.8	51.8	55.8	59.8	63.8	67.8	71.8	75.8	79.8	83.8	87.8	91.8	95.8	99.8	103.8	107.8	111.8	115.8	119.8	123.8
20	50.1	54.2	58.3	62.4	66.5	70.6	74.7	78.8	83.0	87.1	91.2	95.3	99.4	103.5	107.6	111.7	115.8	120.0	124.1	128.2
21	52.3	56.5	60.7	65.0	69.2	73.4	77.6	81.8	86.1	90.3	94.5	98.7	103.0	107.2	111.4	115.6	119.8	124.1	128.3	132.5
22	54.5	58.8	63.2	67.5	71.8	76.2	80.5	84.8	89.2	93.5	97.8	102.2	106.5	110.8	115.2	119.5	123.8	128.2	132.5	136.8
23	56.7	61.2	65.6	70.1	74.5	79.0	83.4	87.8	92.3	96.7	101.2	105.6	110.1	114.5	119.1	123.4	127.8	132.3	136.7	141.2
24	59.0	63.5	68.1	72.6	77.2	81.7	86.3	90.8	95.4	100.0	104.5	109.1	113.6	118.2	122.7	127.3	131.8	136.4	141.0	145.5

BB024 0138

The amount indicated includes side walls and ceilings.

Number of Square Yards and Feet in Rooms with 9-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3 ..	13.0	15.3	17.6	20.0	22.3	24.6	27.0	29.3	31.6	34.0	36.3	38.6	41.0	43.3	45.6	48.0	50.3	52.6	55.0	57.3
4 ..	15.3	17.7	20.2	22.6	25.1	27.5	30.0	32.4	34.8	37.3	39.7	42.2	44.6	47.1	49.5	52.0	54.4	56.8	59.3	61.7
5 ..	17.6	20.2	22.7	25.3	27.8	30.4	33.0	35.5	38.1	40.6	43.2	45.7	48.3	50.8	53.4	56.0	58.5	61.1	63.6	66.2
6 ..	20.0	22.6	25.3	28.0	30.6	33.3	36.0	38.6	41.3	44.0	46.6	49.3	52.0	54.6	57.3	60.0	63.5	65.4	68.0	70.6
7 ..	22.3	25.1	27.8	30.6	33.4	36.2	39.0	41.7	44.5	47.3	50.1	52.8	55.6	58.4	61.2	64.0	66.7	69.5	72.3	75.1
8 ..	24.6	27.5	30.4	33.3	36.2	39.1	42.0	44.8	47.7	50.6	53.5	56.4	59.3	62.2	65.1	68.0	70.8	73.7	77.6	79.5
9 ..	27.0	30.0	33.0	36.0	39.0	42.0	45.0	48.0	51.0	54.0	57.0	60.0	63.0	66.0	69.0	72.0	75.0	78.0	81.0	84.0
10 ..	29.3	32.4	35.5	38.6	41.7	44.8	48.0	52.0	54.2	57.3	60.4	63.5	66.6	69.7	72.8	76.0	79.1	82.2	85.3	88.4
11 ..	31.6	34.8	38.1	41.3	44.5	47.7	51.0	54.2	57.4	60.6	63.8	67.1	70.3	73.5	76.7	80.0	83.2	86.4	89.6	92.8
12 ..	34.0	37.3	40.6	44.0	47.3	50.6	54.0	57.3	60.6	64.0	67.3	70.6	74.0	77.3	80.6	84.0	87.3	90.6	94.0	97.3
13 ..	36.3	39.7	43.2	46.6	50.1	53.5	57.0	60.4	63.8	67.3	70.7	74.2	77.6	81.1	84.5	88.0	91.4	94.8	98.3	101.7
14 ..	38.6	42.2	45.7	49.3	52.8	56.4	60.0	63.5	67.1	70.6	74.2	77.7	81.3	84.8	88.4	92.0	95.5	99.1	102.6	106.2
15 ..	41.0	44.6	48.3	52.0	55.6	59.3	63.0	66.6	70.3	74.0	77.6	81.3	85.0	88.6	92.3	96.0	99.6	103.3	107.0	111.6
16 ..	43.3	47.1	50.8	54.6	58.4	62.2	66.0	69.7	73.5	77.3	81.1	84.8	88.6	92.4	96.2	100.0	103.7	107.5	111.3	115.1
17 ..	45.6	49.5	53.4	57.3	61.2	65.1	69.0	72.8	76.7	80.6	84.5	88.4	92.3	96.2	100.4	104.0	107.8	111.7	115.6	119.5
18 ..	48.0	52.0	56.0	60.0	64.0	68.0	72.0	76.0	80.0	84.0	88.0	92.0	96.0	100.0	104.0	108.0	112.0	116.0	120.0	124.0
19 ..	50.3	54.4	58.5	62.6	66.7	70.8	75.0	79.1	83.2	87.3	91.4	95.5	99.6	103.7	107.8	112.0	116.1	120.2	124.3	128.4
20 ..	52.6	56.8	61.1	65.3	69.5	73.7	78.0	82.2	86.4	90.6	94.8	99.1	103.3	107.5	111.7	116.0	120.2	124.4	128.6	132.8
21 ..	55.0	59.3	63.6	68.0	72.3	76.6	81.0	85.3	89.6	94.0	98.3	102.6	107.0	111.3	115.6	120.0	124.3	128.6	134.3	137.3
22 ..	57.3	61.7	66.2	70.6	75.1	79.5	84.0	88.4	92.8	97.3	101.7	106.2	111.6	115.1	121.5	124.0	128.4	132.8	137.3	141.7
23 ..	59.6	64.2	68.7	73.3	77.8	82.4	87.0	91.5	95.1	100.6	105.2	109.7	114.3	118.8	123.4	128.0	132.5	137.0	141.6	146.2
24 ..	62.0	66.6	71.3	76.0	80.6	85.3	90.0	94.6	99.3	104.0	108.6	113.3	118.0	122.6	127.3	132.0	136.6	141.3	146.0	150.6

The amount indicated includes side walls and ceilings

B8024 0139

Number of Square Yards and Feet in Rooms with 9 ft. 6 in. Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3 ..	13.6	16.1	18.5	21.0	23.4	25.8	28.3	30.7	33.2	35.6	38.1	40.5	43.0	45.4	47.8	50.3	52.7	55.2	57.6	60.1
4 ..	16.1	18.6	21.2	23.7	26.3	28.8	31.4	34.0	36.5	39.1	41.6	44.2	46.7	49.3	51.8	54.4	57.0	59.5	62.1	64.6
5 ..	18.5	21.2	23.8	26.5	29.2	31.8	34.5	37.2	39.8	42.5	45.2	47.8	50.5	53.2	55.8	58.5	61.2	63.8	66.5	69.2
6 ..	21.0	23.7	26.5	29.3	32.1	34.8	37.6	40.4	43.2	46.0	48.7	51.5	54.3	57.1	59.8	62.6	65.4	68.2	71.0	73.7
7 ..	23.4	26.3	29.2	32.1	35.0	37.8	40.7	43.6	46.5	49.4	52.3	55.2	58.1	61.0	63.8	66.7	69.6	72.5	75.4	78.3
8 ..	25.8	28.8	31.8	34.8	37.8	40.8	43.8	46.8	49.8	52.8	55.8	58.8	61.8	64.8	67.8	70.8	73.8	76.8	79.8	82.8
9 ..	28.3	31.4	34.5	37.6	40.7	43.8	47.0	50.1	53.2	56.3	59.4	62.5	65.6	68.7	71.8	75.0	78.1	81.2	84.3	87.4
10 ..	30.7	34.0	37.2	40.4	43.6	46.8	50.1	53.3	56.5	59.7	63.0	66.2	69.4	72.6	75.8	79.1	82.3	85.5	88.7	92.0
11 ..	33.2	36.5	39.8	43.2	46.5	49.8	53.2	56.5	59.8	63.2	66.5	69.8	73.2	76.5	79.8	83.2	86.5	89.8	93.2	96.5
12 ..	35.6	39.1	42.5	46.0	49.4	52.8	56.3	59.7	63.2	66.5	70.1	73.5	77.0	80.4	83.8	87.3	90.7	94.2	97.6	101.1
13 ..	38.1	41.6	45.2	48.7	52.3	55.8	59.4	63.0	66.5	70.1	73.6	77.2	80.7	84.3	87.8	91.4	95.0	98.5	102.1	105.6
14 ..	40.5	44.2	47.8	51.5	55.2	58.8	62.5	66.2	69.8	73.5	77.2	80.8	84.5	88.2	91.8	95.5	99.2	102.8	106.5	110.2
15 ..	43.0	46.7	50.5	54.3	58.1	61.8	65.6	69.4	73.2	77.0	80.7	84.5	88.3	92.1	95.8	99.6	103.4	107.2	111.0	114.7
16 ..	45.4	49.3	53.2	57.1	61.0	64.8	68.7	72.6	76.5	80.4	84.3	88.2	92.1	96.0	99.8	103.7	107.6	111.5	115.4	119.3
17 ..	47.8	51.8	55.8	59.8	63.8	67.8	71.8	75.8	79.8	83.8	87.8	91.8	95.8	99.8	103.8	107.8	111.8	115.8	119.8	123.8
18 ..	50.3	54.4	58.5	62.6	66.7	70.8	75.0	79.1	83.2	87.3	91.4	95.5	99.6	103.7	107.8	112.0	116.1	120.2	124.3	128.4
19 ..	52.7	57.0	61.2	65.4	69.6	73.8	78.1	82.3	86.5	90.7	95.0	99.0	103.4	107.6	111.8	116.1	120.3	124.5	128.7	133.0
20 ..	55.2	59.5	63.8	68.2	72.5	76.8	81.2	85.5	89.8	94.2	98.5	102.8	107.2	111.5	115.8	120.2	124.5	128.8	133.2	137.5
21 ..	57.6	62.1	66.5	71.0	75.4	79.8	84.3	88.7	93.2	97.6	102.1	106.5	111.0	115.4	119.8	124.3	128.7	133.2	137.6	142.1
22 ..	60.1	64.6	69.2	73.7	78.3	82.8	87.4	92.0	96.5	101.1	105.6	110.2	114.7	119.3	123.8	128.4	133.0	137.5	142.1	146.6
23 ..	62.5	67.2	71.8	76.5	81.2	85.8	90.5	95.2	99.8	104.5	109.2	113.8	118.5	123.2	127.8	132.5	137.2	141.8	146.5	151.2
24 ..	65.0	69.7	74.5	79.3	84.1	88.8	93.6	98.4	103.2	108.0	112.7	117.5	122.3	127.1	131.8	136.6	141.4	146.2	151.0	155.7

Number of Square Yards and Feet in Rooms with 10-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3 ..	14.3	16.8	19.4	22.0	24.5	27.1	29.6	32.2	34.7	37.3	39.8	42.4	45.0	47.5	50.1	52.6	55.2	57.7	60.3	62.8
4 ..	16.8	19.5	22.2	24.8	27.5	30.2	32.8	35.5	38.2	40.8	43.5	46.2	48.8	51.5	54.2	56.8	59.5	62.2	64.8	67.5
5 ..	19.4	22.2	25.0	27.7	30.5	33.3	36.1	38.8	41.6	44.4	47.2	50.0	52.7	55.5	58.3	61.1	63.8	66.6	69.4	72.2
6 ..	22.0	24.8	27.7	30.6	33.5	36.4	39.3	42.2	45.1	48.0	50.8	53.7	56.6	59.5	62.4	65.3	68.2	71.1	74.0	76.8
7 ..	24.5	27.5	30.5	33.5	36.5	39.5	42.5	45.5	48.5	51.5	54.5	57.5	60.5	63.5	66.5	69.5	72.5	75.5	78.5	81.5
8 ..	27.1	30.2	33.3	36.4	39.5	42.6	45.7	48.8	52.0	55.1	58.2	61.3	64.4	67.5	70.6	73.7	76.8	80.0	83.1	86.2
9 ..	29.6	32.8	36.1	39.3	42.5	45.7	49.0	52.2	55.4	58.6	61.8	65.1	68.3	71.5	74.7	78.0	81.2	84.4	87.6	90.8
10 ..	32.3	35.5	38.8	42.2	45.5	48.8	52.2	55.5	58.8	62.2	65.5	68.8	72.2	75.5	78.8	82.2	85.5	88.8	92.2	95.5
11 ..	34.7	38.2	41.6	45.1	48.5	52.0	55.4	58.8	62.3	65.7	69.2	72.6	76.1	79.5	83.0	86.4	89.8	93.3	96.7	100.2
12 ..	37.3	40.8	44.4	48.0	51.5	55.1	58.6	62.2	65.7	69.3	72.8	76.4	80.0	83.5	87.1	90.6	94.2	97.7	101.3	104.8
13 ..	39.8	43.5	47.2	50.8	54.5	58.2	61.8	65.5	69.2	72.8	76.5	80.2	83.8	87.5	91.2	94.8	98.5	102.2	105.8	109.5
14 ..	42.4	46.2	50.0	53.7	57.5	61.3	65.1	68.8	72.6	76.4	80.2	84.0	87.7	91.5	95.3	99.1	102.8	106.6	110.4	114.2
15 ..	45.0	48.8	52.7	56.6	60.5	64.4	68.3	72.2	76.1	80.0	83.8	87.7	91.6	95.5	99.4	103.3	107.2	111.1	115.0	118.8
16 ..	47.5	51.5	55.5	59.5	63.5	67.5	71.5	75.5	79.5	83.5	87.5	91.5	95.5	99.5	103.5	107.5	111.5	115.5	119.5	123.5
17 ..	50.1	54.2	58.3	62.4	66.5	70.6	74.7	78.8	83.0	87.1	91.2	95.3	99.4	103.5	107.6	111.7	115.8	120.0	124.1	128.2
18 ..	52.6	56.8	61.1	65.3	69.5	73.7	78.0	82.2	86.4	90.6	94.8	99.1	103.3	107.5	111.7	116.0	120.2	124.4	128.6	132.8
19 ..	55.2	59.5	63.8	68.2	72.5	76.8	81.2	85.5	89.8	94.2	98.5	102.8	107.2	111.5	115.8	120.2	124.5	128.8	133.2	137.5
20 ..	57.7	62.2	66.6	71.1	75.5	80.0	84.4	88.8	93.3	97.7	102.2	106.6	111.1	115.5	120.0	124.4	128.8	133.3	137.7	142.2
21 ..	60.3	64.8	69.4	74.0	78.5	83.1	87.6	92.2	96.7	101.3	105.8	110.4	115.0	119.5	124.1	128.6	133.2	137.7	142.3	146.8
22 ..	62.8	67.5	72.2	76.8	81.5	86.2	90.8	95.5	100.2	104.8	109.5	114.2	118.8	123.5	128.2	132.8	137.5	142.2	146.8	151.5
23 ..	65.4	70.2	75.0	79.7	84.5	89.3	94.1	98.8	103.6	108.4	113.2	118.0	122.7	127.5	132.3	137.1	141.8	146.6	151.4	156.2
24 ..	68.0	72.8	77.7	82.6	87.5	92.4	97.3	102.2	107.1	112.1	117.0	121.8	126.7	131.5	136.4	141.3	146.2	151.1	156.0	160.8

The amount indicated includes side walls and ceilings.

88024 0141

Number of Square Yards and Feet in Rooms with 10 ft. 6 in. Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	15.0	17.6	20.3	23.0	25.6	28.3	31.0	33.6	36.3	39.0	41.6	44.3	47.0	49.6	52.3	55.0	57.6	60.3	63.0	55.6
4	17.6	20.4	23.2	26.0	28.7	31.5	34.3	37.1	39.8	42.6	45.4	48.2	51.0	53.7	56.5	59.3	62.1	64.8	67.6	70.4
5	20.3	23.2	26.1	29.0	31.8	34.7	37.6	40.5	43.4	46.3	49.2	52.1	55.0	57.8	60.7	63.6	66.5	69.4	72.3	75.2
6	23.0	26.0	29.0	32.0	35.0	38.0	41.0	44.0	47.0	50.0	53.0	56.0	59.0	62.0	65.0	68.0	71.0	74.0	77.0	80.0
7	25.6	28.7	31.8	35.0	38.1	41.2	44.3	47.4	50.5	53.6	56.7	59.8	63.0	66.1	69.2	72.3	75.4	78.5	81.6	84.7
8	28.3	31.5	34.7	38.0	41.2	44.4	47.6	50.8	54.1	57.3	60.5	63.7	67.0	70.2	73.4	76.6	79.8	83.1	86.3	89.5
9	31.0	34.3	37.6	41.0	44.3	47.6	51.0	54.3	57.6	61.0	64.3	67.6	71.0	74.3	77.6	81.0	84.3	87.6	91.0	94.3
10	33.6	37.1	40.5	44.0	47.4	50.8	54.3	57.7	61.2	64.6	68.1	71.5	75.0	78.4	81.8	85.3	88.7	92.2	95.6	99.1
11	36.3	39.8	43.4	47.0	50.5	54.1	57.6	61.2	64.7	68.3	71.8	75.4	79.0	82.5	86.1	89.6	93.2	96.7	100.3	103.8
12	39.0	42.6	46.3	50.0	53.6	57.3	61.0	64.6	68.3	72.0	75.6	79.3	83.0	86.6	90.3	94.0	97.6	101.3	105.0	108.6
13	41.6	45.4	49.2	53.0	56.7	60.5	64.3	68.1	71.8	75.6	79.4	83.2	87.0	90.7	94.5	98.3	102.1	105.8	109.6	113.4
14	44.3	48.2	52.1	56.0	59.8	63.7	67.6	71.5	75.4	79.3	83.2	87.1	91.0	94.8	98.7	102.6	106.5	110.4	114.3	118.2
15	47.0	51.0	55.0	59.0	63.0	67.0	71.0	75.0	79.0	83.0	87.0	91.0	95.0	99.0	103.0	107.0	111.0	115.0	119.0	123.0
16	49.6	53.7	57.8	62.0	66.1	70.2	74.3	78.4	82.5	86.6	90.7	94.8	99.0	103.1	107.2	111.3	115.4	119.5	123.6	127.7
17	52.3	56.5	60.7	65.0	69.2	73.4	77.6	81.8	86.1	90.3	94.5	98.7	103.0	107.2	111.4	115.6	119.8	124.1	128.3	132.5
18	55.0	59.3	63.6	68.0	72.3	76.6	81.0	85.3	89.6	94.0	98.3	102.6	107.0	111.3	115.6	120.0	124.3	128.6	133.0	137.3
19	57.6	62.1	66.5	71.0	75.4	79.8	84.3	88.7	93.2	97.6	102.1	106.5	111.0	115.4	119.8	124.3	128.7	133.2	137.6	142.1
20	60.3	64.8	69.4	74.0	78.5	83.1	87.6	92.2	96.7	101.3	105.8	110.4	115.0	119.5	124.1	128.6	133.2	137.7	142.3	146.8
21	63.0	67.6	72.3	77.0	81.6	86.3	91.0	95.6	100.3	105.0	109.6	114.3	119.0	123.6	128.3	133.0	137.6	142.3	147.0	151.6
22	55.6	70.4	75.2	80.0	84.7	89.5	94.3	99.1	103.8	108.6	113.4	118.2	123.0	127.7	132.5	137.3	142.1	146.8	151.6	156.4
23	68.3	73.2	78.1	83.0	87.8	92.7	97.6	102.5	107.4	112.3	117.2	122.1	127.0	131.8	136.7	141.6	146.5	151.4	156.3	161.2
24	71.0	76.0	81.0	86.0	91.0	96.0	101.0	106.0	111.0	116.0	121.0	126.0	131.0	136.0	141.0	146.0	151.0	156.0	161.0	166.0

8 B024 0142

The amount indicated includes side walls and ceilings.

Number of Square Yards and Feet in Rooms with 11-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3..	15.6	18.4	21.2	24.0	26.7	29.5	32.3	35.1	37.8	40.6	43.4	46.2	49.0	51.7	54.5	57.3	60.1	62.8	65.6	68.4
4..	18.4	21.3	24.2	27.1	30.0	32.8	35.7	38.6	41.5	44.4	47.3	50.2	53.1	56.0	58.8	61.7	64.6	67.5	70.4	73.3
5..	21.2	24.2	27.2	30.2	33.2	36.2	39.2	42.2	45.2	48.2	51.2	54.2	57.2	60.2	63.2	66.2	69.2	72.2	75.2	78.2
6..	24.0	27.1	30.2	33.3	36.4	39.5	42.6	45.7	48.8	52.0	55.1	58.2	61.3	64.4	67.5	70.6	73.7	76.8	80.0	83.1
7..	26.7	30.0	33.2	36.4	39.6	42.8	46.1	49.3	52.5	55.7	59.0	62.2	65.4	68.6	71.8	75.1	78.3	81.5	84.7	88.0
8..	29.5	32.8	36.2	39.5	42.8	46.2	49.5	52.8	56.2	59.5	62.8	66.2	69.5	72.8	76.2	79.5	82.8	86.2	89.5	92.8
9..	32.3	35.7	39.2	42.6	46.1	49.5	53.0	56.4	59.8	63.3	66.7	70.2	73.6	77.1	80.5	84.0	87.4	90.8	94.3	96.7
10..	35.1	38.6	42.2	45.7	49.3	52.8	56.4	60.0	63.5	67.1	70.6	74.2	77.7	81.3	84.8	88.4	92.0	95.5	99.1	102.6
11..	37.8	41.5	45.2	48.8	52.5	56.2	59.8	63.5	67.2	70.8	74.5	78.2	81.8	85.5	89.2	92.8	96.5	100.2	103.8	107.5
12..	40.6	44.4	48.2	52.0	55.7	59.5	63.3	67.1	70.8	74.6	78.4	82.2	86.0	89.7	93.5	97.3	101.1	104.8	108.6	112.4
13..	43.4	47.3	51.2	55.1	59.0	62.8	66.7	70.6	74.5	78.4	82.3	86.2	90.1	94.0	97.8	101.7	105.6	109.5	113.4	117.3
14..	46.2	50.2	54.2	58.2	62.2	66.2	70.2	74.2	78.2	82.2	86.2	90.2	94.2	98.2	102.2	106.2	110.2	114.2	118.2	122.2
15..	49.0	53.1	57.2	61.3	65.4	69.5	73.6	77.7	81.8	86.0	90.1	94.2	98.3	102.4	106.5	110.6	114.7	118.8	123.0	127.1
16..	51.7	56.0	60.2	64.4	68.6	72.8	77.1	81.3	85.5	89.7	94.0	98.2	102.4	106.6	110.8	115.1	119.3	123.5	127.7	132.0
17..	54.5	58.8	63.2	67.5	71.8	76.2	80.5	84.8	89.2	93.5	97.8	102.2	106.5	110.8	115.2	119.5	123.8	128.2	132.5	136.8
18..	57.3	61.7	66.2	70.6	75.1	79.5	84.0	88.4	92.8	97.3	101.7	106.2	110.6	115.1	119.5	124.0	128.4	132.8	137.3	141.7
19..	60.1	64.6	69.2	73.7	78.3	82.8	87.4	92.0	96.5	101.1	105.6	110.2	114.7	119.3	123.8	128.4	133.0	137.5	142.1	146.6
20..	62.8	67.5	72.2	76.8	81.5	86.2	90.8	95.5	100.2	104.8	109.5	114.2	118.8	123.5	128.2	132.8	137.5	142.2	146.8	151.5
21..	65.6	70.4	75.2	80.0	84.7	89.6	94.3	99.1	103.8	108.6	113.4	118.2	123.0	127.7	132.5	137.3	142.1	146.8	151.6	156.4
22..	68.4	73.3	78.2	83.1	88.0	92.8	97.7	102.6	107.5	112.4	117.3	122.2	127.1	132.0	136.8	141.7	146.6	151.5	156.4	161.3

The amount indicated includes side walls and ceilings.

Number of Square Yards and Feet in Rooms with 12-foot Ceilings

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3 . . .	17.0	20.0	23.0	26.0	29.0	32.0	35.0	38.0	41.0	44.0	47.0	50.0	53.0	56.0	59.0	62.0	65.0	68.0	71.0	74.0
4 . . .	20.0	23.1	26.2	29.3	32.4	35.5	38.6	41.7	44.8	48.0	51.1	54.2	57.3	60.4	63.5	66.6	69.7	72.8	76.0	79.1
5 . . .	23.0	26.2	29.4	32.6	35.8	39.1	42.3	45.5	48.7	52.0	55.2	58.4	61.6	64.8	68.1	71.3	74.5	77.7	81.0	84.2
6 . . .	26.0	29.3	32.6	36.0	39.3	42.6	46.0	49.3	52.6	56.0	59.3	62.6	66.0	69.3	72.6	76.0	79.3	82.6	86.0	89.3
7 . . .	29.0	32.4	35.8	39.3	42.7	46.2	49.6	53.1	56.5	60.0	63.4	66.8	70.3	73.7	77.2	80.6	84.4	87.5	91.0	94.4
8 . . .	32.0	35.5	39.1	42.6	46.2	49.7	53.3	56.8	60.4	64.0	67.5	71.1	74.6	78.2	81.7	85.3	88.8	92.4	96.0	99.5
9 . . .	35.0	38.6	42.3	46.0	49.0	53.3	57.0	60.6	64.3	68.0	71.6	75.3	79.0	82.6	86.3	90.0	93.6	97.3	101.0	104.6
10 . . .	38.0	41.7	45.5	49.3	53.0	56.8	60.6	64.4	68.2	72.0	75.7	79.5	83.3	87.1	90.8	94.6	98.4	102.2	106.0	109.7
11 . . .	41.0	44.8	48.7	52.6	56.5	60.4	64.3	68.2	72.1	76.0	79.8	83.7	87.6	91.5	95.4	99.3	103.2	107.1	111.0	114.8
12 . . .	44.0	48.0	52.0	56.0	60.0	64.0	68.0	72.0	76.0	80.0	84.0	88.0	92.0	96.0	100.0	104.0	108.0	112.0	116.0	120.0
13 . . .	47.0	51.1	55.2	59.3	63.4	67.5	71.6	75.7	79.8	84.0	88.1	92.2	96.3	100.4	104.5	108.6	112.7	116.8	121.0	125.1
14 . . .	50.0	54.2	58.4	62.6	66.8	71.0	75.3	79.5	83.7	88.0	92.2	96.4	100.6	104.8	109.1	113.3	117.5	121.7	126.0	130.2
15 . . .	53.0	57.3	61.6	66.0	70.3	74.6	79.0	83.3	87.6	92.0	96.3	100.6	105.0	109.3	113.6	118.0	122.3	126.6	131.0	135.3
16 . . .	56.0	60.4	64.8	69.3	73.7	78.2	82.6	87.1	91.5	96.0	100.4	104.8	109.3	113.7	118.2	122.6	127.1	131.5	136.0	140.4
17 . . .	59.0	63.5	68.1	72.6	77.2	81.7	86.3	90.8	95.4	100.0	104.5	109.1	113.6	118.2	122.7	127.3	131.8	136.4	141.0	145.5
18 . . .	62.0	66.6	71.3	76.0	80.6	85.3	90.0	94.6	99.3	104.0	108.6	113.3	118.0	122.6	127.3	132.0	136.6	141.3	146.0	150.6
19 . . .	65.0	69.7	74.5	79.3	84.1	88.8	93.6	98.4	103.2	108.0	112.7	117.5	122.3	127.1	131.8	136.6	141.4	146.2	151.0	155.7
20 . . .	68.0	72.8	77.7	82.6	87.5	92.4	97.3	102.2	107.1	112.0	116.8	121.7	126.6	131.5	136.4	141.3	146.2	151.1	156.0	160.8
21 . . .	71.0	76.0	81.0	86.0	91.0	96.0	101.0	106.0	111.0	116.0	121.0	126.0	131.0	136.0	141.0	146.0	151.0	156.0	161.0	166.0
22 . . .	74.0	79.1	84.2	89.3	94.4	99.5	104.6	109.7	114.8	120.0	125.1	130.2	135.3	140.4	145.5	150.6	155.7	160.8	166.0	171.1

The amount includes side walls and ceiling.

BB024 0144