

BESTWALL®

GYPSUM

PRODUCTS

PLAINTIFF'S EXHIBIT

GP-1016

FEBRUARY 1959

PRODUCT SPECIFICATION DIRECTORY

This list provides a simple up-to-date cross reference of Bestwall products with applicable American Society for Testing Materials Standards (ASTM Standards), Federal Specifications and American Standards Association Specifications (ASA). The last two digits in the ASTM reference number indicates the year of the edition. Where any specifications covers more than one material the type or paragraph is shown. Items for which no standard is written is indicated.

PRODUCT	THICK- NESS	WIDTH	LENGTH	ASTM STANDARDS	FEDERAL SPEC.	APPLIED UNDER
BESTWALL GYPSUM BOARD						
Tapered Edge	1/4"	4'	6' to 16'	C 36-55	SS-W-51A ⊕	ASA 97.1
Square or Tapered Edge	3/8"	4'	6' to 16'			
	1/2"	4'	6' to 16'			
	3/4"	4'	6' to 16'			
Square or Tapered Edge	3/8"	4'	6' to 16'	C 36-55	SS-W-51A ⊕	ASA 97.1
	1/2"	4'	6' to 16'			
	3/4"	4'	6' to 16'			
BESTWALL GRAINBOARDS						
Knotty Pine (Square Edge)	3/8"	4'	8' 9" 10'	C 36-55	SS-W-51A ⊕	ASA 97.1
Figured Aspen (Beveled Edge)						
Ribbon Mahogany (Beveled Edge)						
Fawn Mahogany (Beveled Edge)						
Driftwood Mahogany (Beveled Edge)						
Autumn Mahogany (Beveled Edge)	1/2"	4'	8' 9" 10'			
FIRESTOP BESTWALL WALLBOARD	1/2"	4'	6' to 16'	C 36-55	SS-W-51A ⊕	ASA 97.1
Square or Tapered Edge	3/8"	4'	6' to 16'			
FIRESTOP BESTWALL INSULATING WALLBOARD	1/2"	4'	6' to 16'	C 36-55	SS-W-51A ⊕	ASA 97.1
Square or Tapered Edge	3/8"	4'	6' to 16'			
BESTWALL FIREPROOF GYPSUM SHEATHING						
Long edges core treated	1/2"	2'	8' Std.†	C 79-54	SS-S-276	—
Tongue and Groove Non core-treated	1/2"	2'	8' Std.†	C 79-50	SS-S-276	—
BESTWALL LATH						
Square Edge	3/8"	4'	8' Std.†	C 37-54	SS-P-431A	ASA 42.4
Tongue and Groove Edge	1/2"	2'	8' Std.†			
Firestop Tongue and Groove Edge	3/8"	2'	8' Std.†			
Plain or Perforated (Perforalath)	3/8"	16"	4'			
	1/2"	16"	4'			
Insulating Lath	3/8"	16"	4'			
	1/2"	16"	4'			
Long Length (Plain Only)	1/2"	24"	8' Std.†			
Round Edge or Tongue and Groove Edge						

†Standard Length—Other Lengths on Order.

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BRAND	PRODUCT	ASTM STANDARDS	FEDERAL SPEC.	APPLIED UNDER
BESTWALL	NEAT BASE COAT PLASTER Unfibered, Fibered*, and Extra Fibered*	C-28-57	SS-P-402 (N)	ASA 42.1
BESTWALL	PREPARED TROOP BASE COAT PLASTER Unfibered, Fibered (Glass Only) and Masonry Mix	C-28-57	—	ASA 42.1
BESTWALL	PREPARED TROOP BASE COAT PLASTER Unfibered	C-28-57	SS-P-402 (W)	ASA 42.1
BESTWALL	PREPARED TROOP BASE COAT PLASTER	C-28-57	SS-P-402 (W)	ASA 42.1
BESTWALL	PREPARED TROOP BASE COAT PLASTER	—	—	ASA 42.1
BESTWALL	PREPARED SAND FINISH PLASTER—White	—	—	ASA 42.1
BESTWALL	BUILDERS LIME (Autoclaved Finish Lime)	C 206-49	SS-L-351 (F)	ASA 42.1
BESTWALL	SMOOTH FINISH LIME (Normal Hydrated Finish Lime)	C 6-49	SS-L-351 (F)	ASA 42.1
BESTWALL	SPEEDY MASON'S LIME (Autoclaved Mason's Lime)	C 207-49 S	SS-L-351 (M)	ASA 42.1
BESTWALL	MASON'S LIME (Normal Hydrated Mason's Lime)	C 207 49 N	SS-L-351 (M)	ASA 42.1
BESTWALL	PORTLAND CEMENT	C 61-50	SS-C-161	ASA 42.1
BESTWALL	KALITE AGGREGATE PLASTER Natural, Gray or Buff	—	SS-A-111 (I)	ASA 42.1
BESTWALL	LIGHT AGGREGATE PLASTER	—	—	ASA 42.1
BESTWALL	WHITE PLASTER (White SPAR)	C 28-57	SS-P-402 (G)	ASA 42.1
BESTWALL	Local	C 28-57	SS-P-402 (G)	ASA 42.1
BESTWALL	White (SUNFLOWER)	C 59-50	—	—

*Glass Fibered unless Specified Sisal

⊕ In some instances the Specification does not reflect all the details of an item as the depth of taper on taper edge board, the different thicknesses and the core composition in Firestop, the finish on wood grain gypsum board, etc.

BRAND	PRODUCT	ASTM STANDARDS	FEDERAL SPEC.	APPLIED UNDER
BESTWALL	JOINT SYSTEM	—	—	ASA 97.1
BESTWALL	CORROSION RESISTANT PLASTER	C 377-56T Long Span Slab	SS-S-439 Type I	—
BESTWALL	REPAIR MIX	C 317-55	—	ASA 59.1
BESTWALL	SPRINT BOARD	C 318-55	—	ASA 59.1

Any question not answered by the information on this sheet or available in the District Sales Office should be referred to the General Sales Office. Be sure to give all information as to issuing office, date of specification, job description, location, enforcing party, product involved, description of use if other than normal, amount involved, etc. This is particularly important when special limitations under standard specifications are involved.

Each Bestwall Certain-teed Sales Corporation District Sales office has a book of applicable Federal Specifications. Each specification is prepared with a detailed analysis prepared by the Laboratory of which Bestwall products meet the specification and any limitations. The District Sales Manager is authorized to write a letter of certification in accordance with the Laboratory analysis.

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INDUSTRIAL GYPSUM

Introduction

Many thousands of tons of calcined gypsum products are used each year for industrial purposes. An industrial use is one in which the plaster is used in the end product other than a wall (i.e. plaster statuary), or one in which the plaster is used in processing something else, (i.e. pottery molds, molds for plastic forming, etc.). Another feature of items classified as "Industrial" is the fact that they are generally sold directly to the user rather than to dealer for resale.

The field of use of gypsum plasters in industry is large and extremely diversified. Each use differs in the requirements which must be met by the plaster. For this reason, industrial gypsum plasters are, for the most part, "tailor made" to suit the individual requirements of the user. In some cases the setting time of the plaster is the important factor; in others, it may be compressive strength; in still others; it may be expansion, or a combination of certain physical characteristics. Thus, it has become necessary to develop a number of different gypsum plasters to effectively cover the majority of industrial uses. Detailed descriptions of these plasters will be found on the following pages of this manual.

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Firestopper Poured-In-Place Gypsum Roof Decks

A Firestopper poured-in-place type of roof deck construction is one employing the use of rail or tee sub-purlins which span from main roof purlin to main roof purlin. (Flanged channel post sections are sometimes used as sub-purlins). The sub-purlins are usually spaced 32-5/8" on centers to accommodate the 32" width of special Bestwall Gypsum Form Board, described in a later paragraph. In specific cases where live loads are excessive or where spans are too great for sub-purlins, the spacing of sub-purlins may be reduced for special conditions. The maximum spacing is 32-5/8".

Bestwall Gypsum Form Board furnished in lengths equal to purlin spacing is placed on the flanges of the sub-purlins, thus providing support for all four sides of the Form Board. A welded wire reinforcing fabric with main wires running at right angles to the sub-purlins is placed over the form board and sub-purlins. A Metro Mix slab is then poured-in-place to the proper thickness, usually 2" over the top of the Gypsum Form Board.

Metro Mix construction may be used over light steel beams or wood framing without sub-purlins if spacing of supports does not exceed 36". Light box channels placed back to back, or tees are usually used to stiffen the longitudinal edges of the Gypsum Form Board. Where the joist spacing is 36", the Gypsum Form Board must be continuous over three or more supports.

Materials

Sub-Purlins may be bulb tees or light steel rails of structural quality weighing from 4 to 20 lbs. per lineal yard or for short spaces up to 5 feet, flanged channel post sections. Gypsum Roof Deck Contractors buy rails, tees and post sections direct from the rolling mills, including Buffalo Steel Company, Tonawanda, New York; Inland Steel Company, Chicago, Illinois; West Virginia Steel and Mfg. Company, Huntington, West Virginia.

Bestwall Gypsum Form Board is an especially made Gypsum Form Board 1/2" thick and 32" wide. It consists of a Gypsum Plaster core reinforced with textile glass filaments encased in a strong, durable paper covering. The back paper is gray. The face paper is an ivory colored manila surfaced sheet and has been treated with a mildew inhibitor. Form Board is furnished in lengths to fit purlin spacings

Fiberglas Form Board is a rigid type glass fiber insulation board 1" thick, 32" wide and 4' long. It may be matt faced or printed. A "T" cross bar is used to support ends of form board.

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Insulation Form Board is a rigid type wood fiber insulation Board 1" thick, 32" wide, and cut to specified lengths to fit purlin spacings.

Asbestos Cement Form Board is a rigid industrial type asbestos cement board 1/4" thick, cut to 32" wide by 48" long. Supplemental tees are required in cross joints. (We do not furnish asbestos cement form board).

Steel Reinforcing Fabric is an electrically welded galvanized wire fabric consisting of #12 gauge longitudinal wires spaced 4" on centers and #14 gauge transverse wires spaced 8" on centers. It is usually referred to as BD 1214 mat where the letter "A" means 2", "B" - 4", "C" - 6", "D" - 8", etc.

Metro Mix is a quick setting (approximately 15 minutes) light weight gypsum concret consisting of calcined gypsum stucco and wood fiber. Regular Metro Mix contains not more than 12-1/2% wood fiber and not less than 87-1/2% calcined gypsum stucco, both by weight. Nailing Deck Metro Mix contains not over 8% of wood fiber and not less than 92% calcined gypsum stucco, both by weight. Some formulae for Metro Mix have less than 3% wood fiber. Orders should specify regular, nailing deck or machine Metro Mix. The plants keep a customer card on Gypsum Roof Deck Applicators and over a period of time develop a formulation both of fiber content and setting time to suit that customer.

The dry Metro Mix is shipped to the job in paper bags and requires only the addition of water and proper mixing before pouring into place. For estimating purposes it requires approximately 4 tons of Metro Mix per M sq. ft. of roof area for a 2" pour. A quick estimate is 8# per sq. ft. of roof area. Where Metro Mix is mixed with the proper amount of water and according to our directions; it will develop a minimum compressive strength in excess of 500 lbs. per sq. in. (Class A). Tests show that a 2-1/2" Reinforced Metro Mix slab and permanent form board spanning continuously over steel sub-purlins spaced 32-5/8" on centers will carry an ultimate uniformly distributed load of over 500# per sq. ft. The roof deck strength however, is determined by the sub-purlins and their selection is made accordingly. Note that the load carrying capacity of the reinforced Gypsum slab is several times greater than the designed load carrying capacity of the steel sub-purlins.

Important

It is important that adequate protection be given to Form Board and Metro Mix when stored out of doors at job site. Both should be piled on plank or board several inches above the ground and should be covered with tarpaulin to protect them from the elements.

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Erection

Reinforced Metro Mix Slabs (2" of Reinforced Metro Mix over a permanent Form Board) are designed to span continuously over sub-purlins spaced 32-5/8" on centers, or over bar joist spaced not more than 36" on centers.

Steel Sub-Purlins may be attached to main purlins by means of clips, however, most engineers and architects prefer welding because of the additional stiffness sub-purlins contribute to the roof framing when they are firmly welded to the purlin. It also distributes those stresses caused by contraction and expansion due to temperature changes through the slab. Care should be taken in ordering sub-purlins that proper lengths are ordered to prevent waste of time and material on the job.

Bestwall Form Boards are permanently installed between the sub-purlins or over bar joist. 48" wide Form Boards can be used over bar joist that is spaced not over 36". 48" wide Form Boards are never used with sub-purlins.

Steel Reinforcement for Poured In Place Metro Mix Slabs is installed with the #12 gauge wires placed continuous and at right angles to the sub-purlins or bar joist. Lap the ends of the mesh not less than 6". Sides of mesh are not to be lapped. The mesh should be cut to fit at all walls, curbs and openings and placed in all areas where Metro Mix is to be poured.

Metro Mix can be hand mixed or machine mixed at roof level, but presently most is mixed at the ground level and pumped to the roof. Whichever method is used extreme care should be taken to properly proportion water to dry mix. The contractors' method of mixing should be noted on orders. This is most important when the contractor changes his methods or equipment. Metro Mix may be poured in cold weather as long as the men can work. Care should be used to keep the mixing equipment as clean as is practicable since set particles of gypsum will accelerate the setting time of the mixture. Water must be provided by the owner or general contractor at job site. A 1-1/2" line with a 50 lb. pressure is required at a point adjacent to the building. CURBS around openings are usually poured in place using Metro Mix. CANTS AND DRAINAGE FILLS (sometimes referred to as crickets) are also poured in place with Metro Mix and screeded to give the proper slope to roof drains. Where drainage fills are deep (8" or more) use gypsum rubble coated with Metro Mix as a fill and cover with 2" of Metro Mix screeded to proper contour.

Technical Data

Technical data pertaining to safe loads and spans of sub-purlins, "U" values and slab weights are included in the accompanying A.I.A. Firestopper Folder.

Limitations of Use and Recommendations

Excessive Moisture or Temperature

Metro Mix Roof Decks are ideal for all types of buildings and occupancies with

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normal temperatures and humidity conditions. Where occasional high temperatures occur, it is advisable to use cement asbestos form board. Where abnormally high humidity conditions prevail, such as in wet process plants, or where unusually high temperatures prevail, such as in foundries, furnace rooms, etc., consult General Sales for recommendations. Where only a small area of an otherwise large job has a problem of high temperature or high humidity, that area may be poured over Cement Asbestos Form Board.

Exposure

During application poured-in-place Gypsum Roof Decks withstand the effects of normal rainfall, snow, freezing and thawing; however, they should be covered as soon as practicable. The waterproof (built-up type) roof covering should be applied as soon as the top surface of the slab is dry. For the method of application of the roof covering, follow the roofing manufacturer's specifications. However, the first 2 plies must be nailed not mopped.

Drying

Metro Mix Roof Deck Slabs normally will dry thoroughly from the under-surface. It is imperative that adequate ventilation be provided beneath the slab to permit the escape of this moisture. In buildings without windows or with fixed windows, or when a suspended ceiling is installed, forced ventilation is required to remove all construction moisture.

Heavy Loads

All superimposed concentrated loads, such as flag pole bases, water tanks, etc. must be directly or indirectly supported on steel framing, and not on the gypsum slab.

Expansion Joints

Where Expansion Joints are provided in the main structure, they should also be provided in the Roof Deck. As a general precaution, a wood fiber or glass fiber filler at all junctions of roof slabs with parapet walls is desirable. Also in "U" or "L" shaped buildings an expansion joint should be included in the gypsum deck at the junction of the wing.

Painting

Since Form Boards provide a finished under-surface, they do not usually require additional decoration, however, when decoration is desired, painting should not be done until the slab is thoroughly dry. Before painting, the slab should be checked for dryness throughout its entire thickness. There are a number of moisture meters on the market.

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Suspended Ceilings

Suspended ceilings under Metro Mix Decks should be hung from the structural steel frames. If they are hung from the Roof Decks, they should be attached to the sub-purlins, never to the Gypsum slab. When they are attached to the sub-purlins, care should be taken that the sub-purlins are selected to provide for this additional load.

Information

For information on points not covered here contact General Sales Department.

Outstanding Features

Metro Mix Roof Decks are light in weight, strong, incombustible, durable, have a pleasing appearance, can be speedily erected, all weather construction, highly adaptable, good thermal insulation, will not rot, decay, or deteriorate, are vermin proof and termite proof, and are very economical.