



APPLICATION DIRECTIONS

DOUBLE WALL JOB LAMINATED SHEETROCK* FIREPROOF GYPSUM WALLBOARD

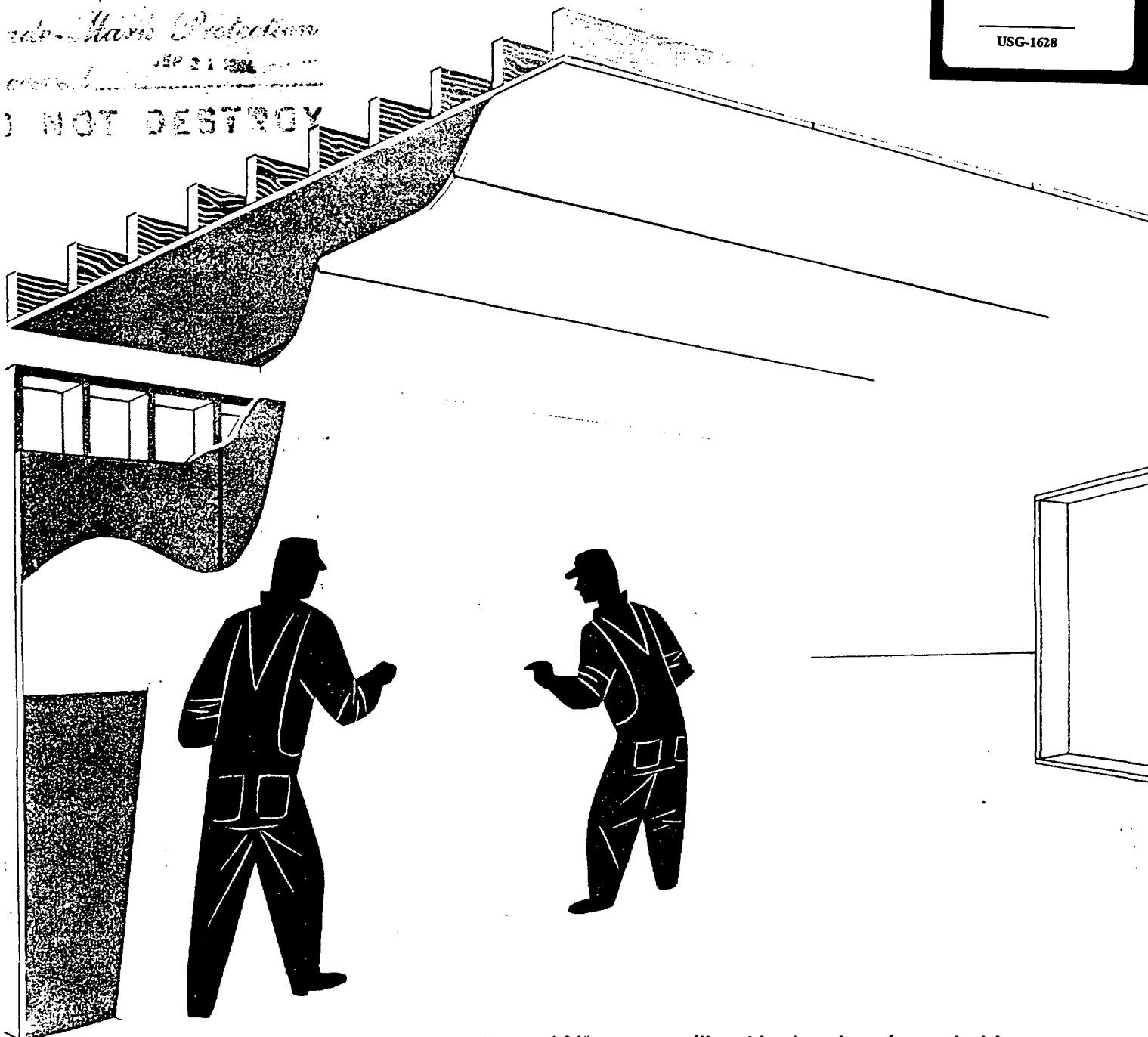
PLAINTIFF'S EXHIBIT

USG-1628

SHEETROCK DOUBLE WALL

APPLICATION DIRECTIONS

STUDICAL FILE
into Mark Protection
SEP 21 1964
DO NOT DESTROY



THE DOUBLE WALL SYSTEM consists of two layers of $\frac{3}{8}$ " gypsum wallboard laminated together on the job.

A base layer of BAXBORD* gypsum backing board is fastened to the framing, and a face layer of

SHEETROCK* Fireproof Gypsum Wallboard is adhesively applied to the base layer.

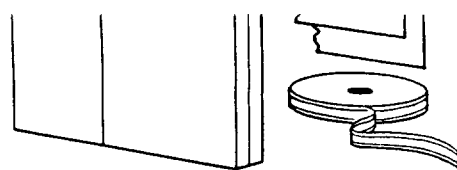
Walls and ceilings so constructed offer greater strength, greater fire resistance and greater resistance to sound transmission. They're highly resistant to cracking, easy to decorate; and they minimize the possibility of nail "pops" and discoloration over fastener heads.

Speedy erection cuts building time, permits earlier occupancy.

BB021 1263

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CHECK MATERIALS NEEDED



Base Layer— $\frac{3}{8}$ " BAXBORD gypsum backing board in 4' x 8' panels specially designed for the Double Wall System. Both faces and the long square edges are encased in strong gray liner paper. BAXBORD backing board is economical, easy to handle; available plain or with aluminum foil on one surface. Foil-backed BAXBORD provides a vapor barrier and reflective insulation on exterior walls and top floor ceilings. (*Regular $\frac{3}{8}$ " SHEETROCK wallboard may be used as an alternate to BAXBORD for the base layer.*)

Face Layer— $\frac{3}{8}$ " Tapered Edge SHEETROCK—4' wide and up to 14' long.

Several face layer alternates are available for walls: $\frac{3}{8}$ " SHEETROCK Vinyl Coated—4' wide—8' and 10' long—available in 8 colors.

$\frac{3}{8}$ " Ultrawall Panels—4' wide—7', 8', 9' and 10' long.

Fasteners—GWB-54 nail, 4d gypsum wallboard nail or $1\frac{1}{4}$ " USG Drywall Screw—Type W for applying $\frac{3}{8}$ " BAXBORD base layer. (BAXBORD also may be stapled to wood framing members.) For temporary support of face layer, use nails of sufficient length to penetrate framing member $\frac{3}{4}$ ". Double head, washer head type nails with wood or wallboard blocks should be used to facilitate removal.

Adhesive—USG® Laminating Adhesive. Applied with spreader blade described on page 5. Coverage: approximately 55 to 60 lbs. required per 1000 sq. ft. of wall area.

SHEETROCK Brand DWA-12 contact adhesive. Applied with roller described on page 6. Coverage: Approximately one gallon required per 125 to 150 sq. ft. (coating two surfaces for one glue line).

Joint Treatment—PERF-A-TAPE joint system. For tapered edge SHEETROCK 1000 sq. ft. wall area requires approximately $312\frac{1}{2}$ lineal ft. of tape and 52 lbs. of cement.

Plan Job. Two secrets of a good gypsum wallboard job are the elimination of unnecessary joints and locating joints which must occur, at the least conspicuous locations. Careful advance planning on the face layer in double wall construction is important because the manner in which the face layer may be applied is largely dependent upon the placement of the base layer panels since joints between the two layers must be offset a minimum of 10". The first planning step is to determine application of the face layer board. SHEETROCK may be applied with the long edges either parallel to the joists or studs (vertically) or perpendicular to the joists or studs (horizontally). Generally, horizontal construction on walls results in less lineal feet of joints. However, ceilings should be spanned with a single sheet if possible, regardless of the direction of the joists.

Check Framing. Make a thorough check of the framing before applying the Double Wall System of SHEETROCK wallboard. Studs and joists must

be in true alignment, bridging, fire stops, soil pipes, etc., must not protrude beyond framing. *Spacing of framing members should not exceed 16" c. to c. for ceilings, and sidewalls when $\frac{3}{8}$ " thick base layer is used. (Framing members on ceilings may be 24" o.c. if $\frac{1}{2}$ " thick base layer is used.)* For best results heat should be provided to maintain a continuous minimum temperature of 55° well in advance of and during board application, joint finishing and decorating.

Apply Base Layer. Nail BAXBORD on ceiling first at right angles to framing members (horizontally). End joints of BAXBORD may occur on or between framing members, but must be staggered. Space nails 7" c. to c. and USG Drywall Screws—Type W 12" c. to c. On walls, apply BAXBORD backing board with long edges parallel (vertically) to, and centered on, framing members. Space nails 8" c. to c. and USG drywall screws—Type W 12" c. to c. All BAXBORD joints must be positioned to offset face layer joints a minimum of 10".

When using SHEETROCK predecorated wallboard or ULTRAWALL Panels for face layer, apply BAXBORD base layer with long edge at right angles to studs (horizontally) on sidewalls.

Power driven staples may be used to attach BAXBORD to wood framing members. Staples shall meet following minimum requirements: 16 U.S. Standard gauge flattened galvanized wire. Staple crown 00 flat, $7/16$ " minimum width (outside measure); staple legs—1" long for $\frac{3}{8}$ " thick base layer— $1\frac{1}{2}$ " long for $\frac{1}{2}$ " base layer; with divergent points. Staples shall be driven with crown parallel to the long dimension of the framing member, using same spacing specified for nail attachment. Staples shall be driven in such a manner that crown bears tightly against BAXBORD but does not cut into face of paper. Legs of staples shall be no less than $\frac{3}{8}$ " from ends or edges of BAXBORD backing board.

(If 4' wide SHEETROCK is used as the base layer, apply board horizontally on ceilings and vertically on walls, with fastener spacing same as BAXBORD).

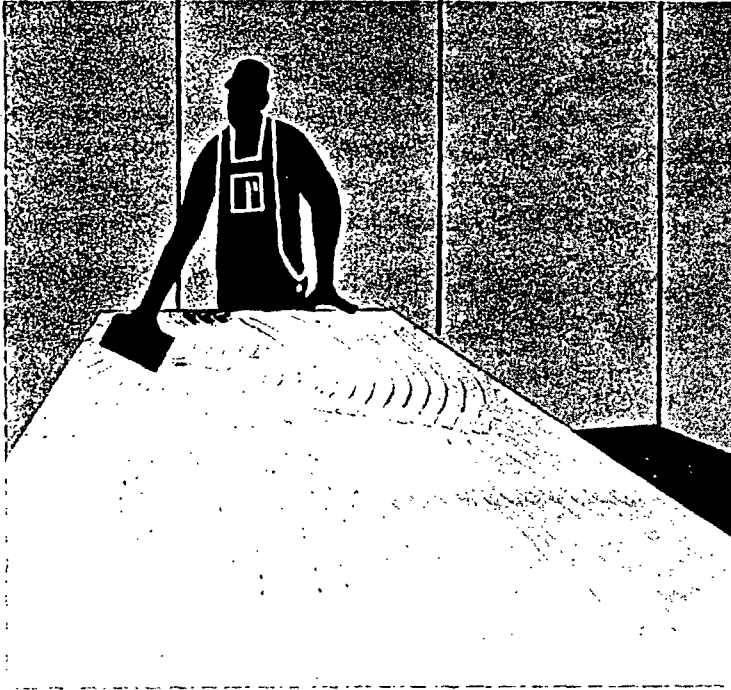
2 PLAN JOB

3 CHECK FRAMING

4 APPLY BASE LAYER



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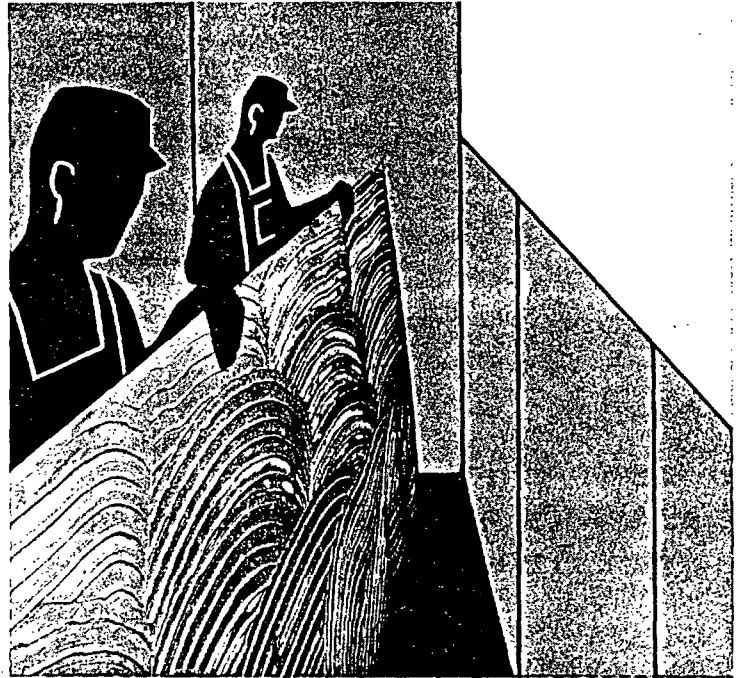
a. Cut and fit face layer of 4' wide SHEETROCK® Wallboard for the ceilings. Then spread the PERF-A-TAPE® Joint Compound adhesive (embedding type) uniformly over the entire back surface to the extreme edges of the board, using the adhesive spreader blade.



b. After the adhesive has been applied to the back surface, the face board is erected and temporarily secured to the framing with supports spaced 16" to 24" c. to c. Temporary supports may be double headed scaffold nails backed-up by large fiber or wood washer, stucco furring nails, 6d cooler type nail backed up by BAXBORD® or SHEETROCK block (used as washer), or by bracing or shoring. Wipe off any adhesive forced out along the edge.



c. Next, apply face layer on upper walls and temporarily secure to the underlying framing with supports, spaced 16" to 24" c. to c. (Ceiling and sidewall end joints may occur between underlying members. In such cases, provide temporary bracing as for "Back-Blocking" ... see Figure 16—Folder WB-15.) Predecorated SHEETROCK gypsum wallboards are normally applied with the long edge parallel to the underlying members (vertically).



d. Following application of upper boards, erect face layer of SHEETROCK Wallboard on lower walls. Upper and lower boards should be loosely butted together. Note in this case how the PERF-A-TAPE compound adhesive has been applied to back surface of face layer board.

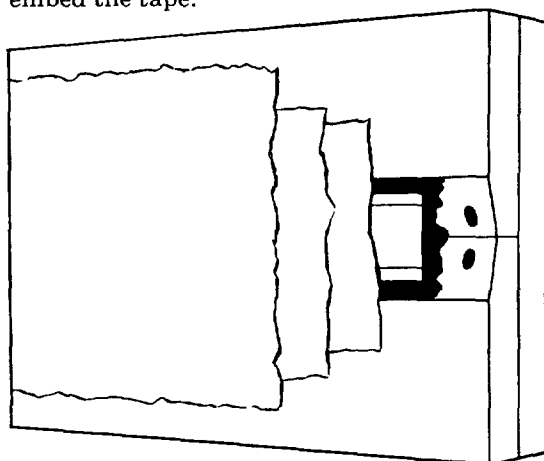
After the PERF-A-TAPE* Joint compound adhesive has dried (usually 24 hours is sufficient. Adverse drying conditions may require 48 or more hours for permanent bond), temporary fasteners should be pulled and/or bracing or shoring removed. Where double headed or furring nails have been used without a washer, a thin wood block should be placed

under claw hammer head when nails are pulled to prevent surface damage to face the layer. For best results, dimple holes left by temporary nails with crown face of hammer directly over hole to facilitate concealment with PERF-A-TAPE Joint compound during joint treatment application.

SHEETROCK WALLBOARD

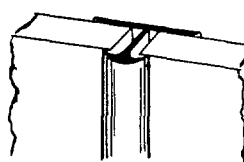
Fastener holes are spotted with PERF-A-TAPE Joint Compound and joints are treated with the PERF-A-TAPE joint system according to directions. This conceals the joints of the Tapered Edge SHEETROCK wallboard and produces integrally strong walls and ceilings that take any decoration. Complete directions come with the materials.

Butt or end joints are treated the same as the Tapered Edge joints. Finishing coats of PERF-A-TAPE compound must be feathered wider (approximately 18") however, because there is no taper in which to embed the tape.

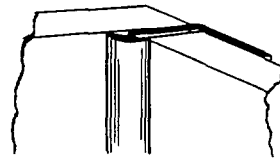


PRE-DECORATED SHEETROCK WALLBOARD

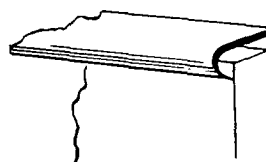
JOINTS AND CORNERS When using predecorated SHEETROCK, face layers may be left unfinished featuring the beveled edges, or finished with matching SHEETROCK Moldings attached to the underlying framing with flat head wire nails spaced 8" to 12" c. to c.



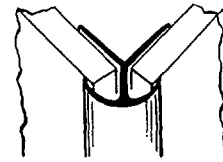
DIVIDER—Place divider on panel before putting into position. Nail exposed side—insert butting panel.



INSIDE CORNER—Place first panel. Apply molding over first panel. Insert second panel into place.



END CAP—When end cap is used to finish wainscoting, nail Cap loosely so that molding is slightly above panel height. Apply panel to wall. Tap end cap into position.



OUTSIDE CORNER—Place molding over one panel at corner. Nail exposed side—Insert next corner panel.

DIRECTIONS FOR USG* LAMINATING ADHESIVE

USE—USG Laminating Adhesive is a specially formulated dry powder adhesive designed to laminate together wall and ceiling areas constructed of two layers of SHEETROCK* or other gypsum wallboard on the job. It is not a so-called "contact" adhesive. Temporary nailing is required spacing every 16" to 24". See USG Drywall Construction Handbook.

MIXING—Mix USG Laminating Adhesive in a clean metal container using approximately 11 gallons of clean, cool water per 25 pounds of powder. Sift powder into the water stirring continuously. Mixing with electric drill or some mechanical means is recommended. Mix until smooth. Adhesive will thicken and is useable after 30 minute soaking period. Consistency of the mix may be adjusted if necessary by adding small amounts of powder or water. Wet mix may be held for up to 24 hours by covering with a small amount of water.

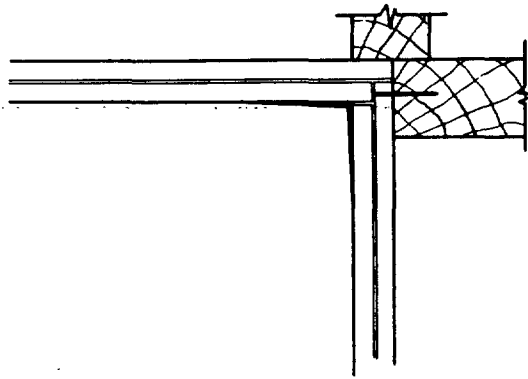
APPLICATION—This material may be applied with a

notched hand spreader. Hand spreaders 5" to 10" in size are generally composed of stainless or galvanized steel with the approximate stiffness of a plaster trowel blade. $\frac{1}{2}$ " deep, $\frac{3}{16}$ " wide with rounded tip inverted "V" shape notches, spaced 2" apart is recommended. Material should be spread uniformly over the entire back surface to the extreme edges of the board. Coverage will vary depending upon application technique.

Protect from freezing. Controlled heat should be provided to maintain a continuous minimum temperature of 55 degrees F. well in advance of and during application of gypsum board, joint finishing and decorating.

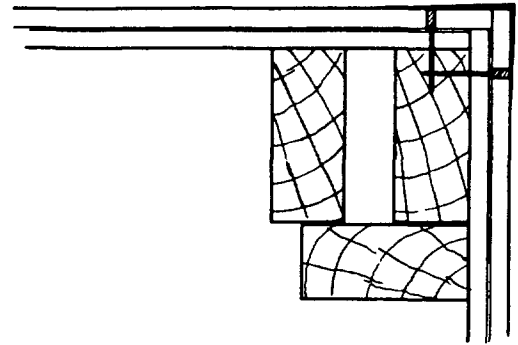
CAUTION—This material is designed to be used as an adhesive only and should never be used for embedding tape, finishing joints, or spotting nail-heads. It should not be intermixed with any other material.

CORNER DETAILS



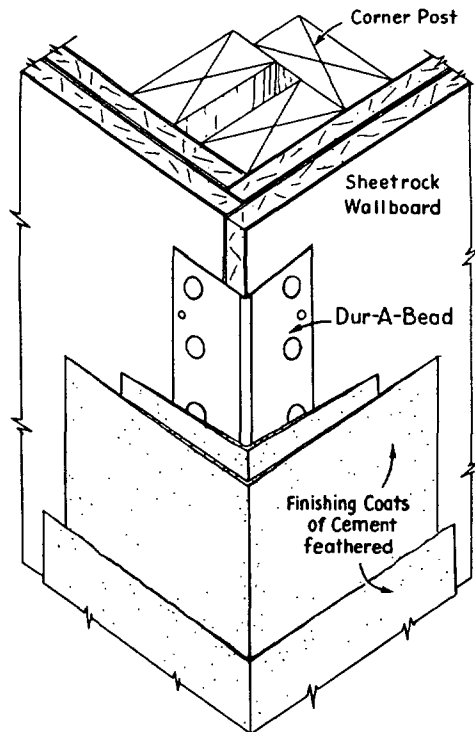
INSIDE CORNER

Only the overlapping panel of BAXBORD* backing board is nailed to the corner framing, securing both boards into the corner. The $\frac{3}{8}$ " SHEETROCK* face layer is not nailed. A "floating" type of corner results after reinforcement by application of the PERF-A-TAPE* joint system.



OUTSIDE CORNER

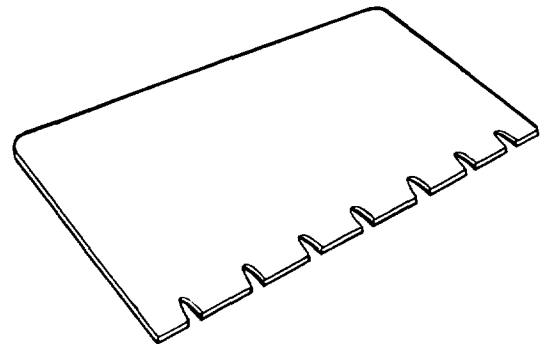
Only the face layer of SHEETROCK—not the BAXBORD—is nailed to the framing. When nailing corner reinforcement is applied, use temporary nails at locations shown; otherwise, use permanent nails penetrating framing approximately $\frac{3}{4}$ " and countersink as shown or conceal by the corner reinforcement.



METAL CORNER REINFORCEMENT

Outside corners of the Double Wall System may be reinforced and finished with DUR-A-BEAD*, an all metal corner reinforcement, as shown, or PERF-A-BEAD* corner bead.

HANDY, EASY-TO-MAKE SPREADER BLADE



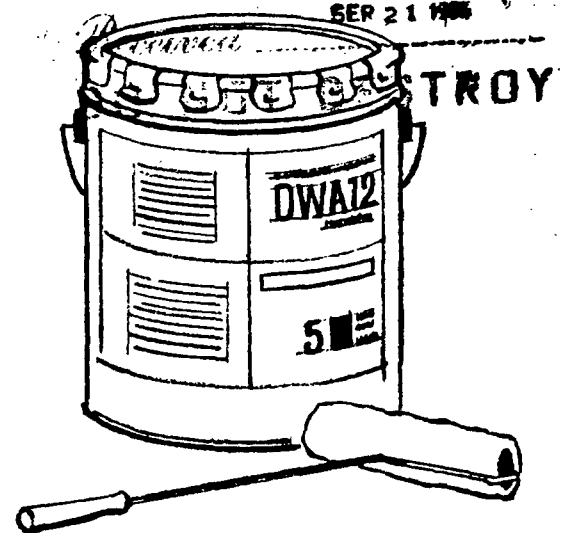
Metal blades are recommended for spreading PERF-A-TAPE compound adhesive. With blades made of other materials the cement tends to accumulate and dry in the notches, preventing proper spreading action. Stainless or galvanized steel makes the best spreader. It should have the approximate stiffness of a plaster-trowel blade. The blade should be kept reasonably clean at all times. A 5"x10" blade is most effective for spreading cement. As shown above, the recommended spacing of notches is $1\frac{1}{2}$ ", with notches $\frac{1}{2}$ " deep, tapering out to $\frac{5}{16}$ ", in width at edge of tool. Note that notches have a rounded, rather than a sharp "V", apex.

ALTERNATE METHOD OF APPLYING FACE HISTORICAL TILE LAYER USING SHEETROCK® BRAND DWA-12 Trade-Mark Protection CONTACT ADHESIVE

SHEETROCK brand DWA-12 contact adhesive is a specially formulated product which instantly laminates SHEETROCK gypsum wallboard to gypsum backing boards. Because the bond is instantaneous when the two coated surfaces are in contact and impacted, no mechanical fastening is needed and any joint treatment desired may proceed at once.

Only SHEETROCK brand DWA-12 contact adhesive is recommended by the United States Gypsum Company for laminating gypsum boards by the instant bond method.

SHEETROCK brand DWA-12 contact adhesive is tinted a light red color for easy identification. One gallon will cover approximately 125 to 150 square feet (coating two surfaces for one glue line).



DIRECTIONS

SHEETROCK BRAND DWA-12 CONTACT ADHESIVE

- Surfaces to be laminated must be thoroughly clean and dry before applying SHEETROCK brand DWA-12 contact adhesive. *Both surfaces must be coated.*
- For best results, SHEETROCK brand DWA-12 adhesive should be applied at temperatures of 50° to 80° F.
- Using a paint roller, apply the adhesive to the entire surface of the backing board or coreboard. Use a lamb's wool roller with phenolic core. Adhesive will cause rollers with other types of cores to disintegrate.
- Apply Adhesive to the entire back surface of the face panels. Cover only as much area as can be laminated in one hour.
- Before the coated surfaces are placed in contact, allow them to dry until they are only slightly tacky to the touch. This should take from 15 to 30 minutes at normal room temperature. Damp weather or cold air may require a longer waiting period.
- Place the face panels over the baseboard in their exact position. Joints of face layer and baseboard should be offset a minimum of 12 inches. **CAUTION:** Since face panels cannot be shifted after contact, it is important to precut and prefit face panels prior to applying adhesive on either surface.
- Impact face panel, including edge and end areas, with a rubber mallet to assure over-all bond.
- On jobs requiring large amounts of SHEETROCK brand DWA-12 contact adhesive, recommended practice is to add fresh Adhesive to that remaining in the working container.

LIMITATIONS

Cannot be used:

to apply SHEETROCK gypsum wallboard direct to wood framing; where fire ratings are required, and where metal trims, runners or metal framed openings are installed prior to erecting the gypsum board.

Cannot be used with Vinyl Coated SHEETROCK.

These products are highly flammable. Adequate ventilation must be provided.

SHEETROCK BRAND DWA-12 SOLVENT

- The main use of SHEETROCK brand DWA-12 solvent is for cleaning or soaking rollers and brushes when not in use.
- Use only SHEETROCK brand DWA-12 solvent for cleaning paint rollers or brushes. Turpentine, kerosene and other popular type solvents will not dissolve SHEETROCK brand DWA-12 contact adhesive.
- On jobs requiring continued use of rollers, immerse them in SHEETROCK brand DWA-12 solvent overnight and over a weekend, in a tightly closed container.
- Other solvents may not be compatible with SHEETROCK brand DWA-12 contact adhesive. If inter-mixed in any manner, harmful reduction in bond or complete bond failure can result.
- SHEETROCK brand DWA-12 solvent should be used very sparingly as a thinner and only if evaporation of the solvent in the adhesive causes it to become too heavy for normal application.

DANGER

For Professional Use Only

Extremely flammable. Keep away from heat, open flame, lighted cigarettes, pilot lights and electrical equipment such as switches, outlets, tools and appliances during application and evaporation of solvent. Vapor harmful. Use only on well ventilated area. Avoid breathing of vapor and contact with skin. Keep away from eyes and mouth. If substance gets in eyes or mouth, flush with water and see doctor immediately. Keep container tightly closed when not in use. Contains Methyl Ethyl ketone, toluene and hexane. Keep out of reach of children.

All references to fire ratings, sound transmission ratings, structural properties, and other characteristics of erected or installed systems or products are based on generally accepted laboratory testing procedures, and we endeavor to present all data and application techniques in a condensed, but accurate, manner. Because of innumerable variables in job requirements and conditions, specifications, building codes, insurance requirements and other factors, United States Gypsum Company will not be responsible for difficulties attributable to such matters, or resulting from misapplication, specification changes, or other circumstances or conditions not specifically mentioned herein.

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