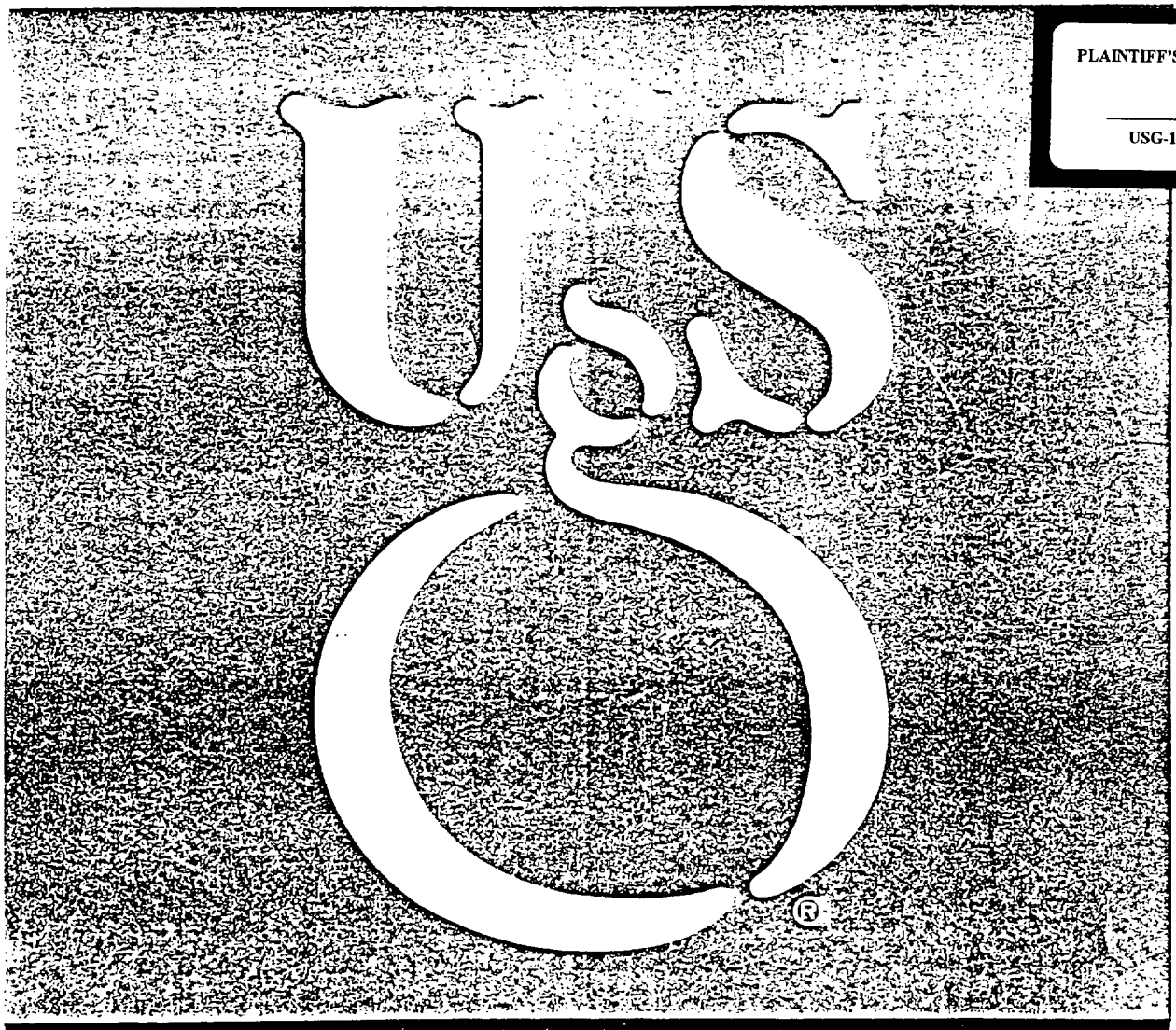
BOWMAN
EX 102

PLAINTIFF'S EXHIBIT

USG-1448



DATA BOOK

INSULATION PRODUCTS

UNITED STATES GYPSUM

USG Decorative Insulation

These products combine lasting beauty, thermal insulation and noise reduction when used on interior walls and ceilings. They are equally adaptable to all types of interiors—homes, stores, schools, churches, restaurants, etc.

USG Decorative Insulation is rigid wood fiber insulating board fabricated into predecorated interior wall and ceiling units.

There are two types of USG Decorative Insulation:

1. USG Insulating Twin-Tile and Panel-Tile—rectangular units generally used for ceiling paneling. Twin-Tile is produced by center scoring 12″ x 24″ or 16″ x 32″ units to simulate 12″ x 12″ or 16″ x 16″ square patterns. Panel-Tile is a rectangular panel (not center scored) in 12″ x 24″ or 16″ x 32″ sizes. Both styles are available in ½″ or ¾″ thickness.

2. USG Insulating Plank—ceiling height units, ½″ thick, in random widths, to simulate random wall planking.

USG Decorative Insulations are produced with a Hilite (light ivory) finish or BLENDTEX finish (a blend of four tan tones).

See Technical Data table for sizes, packaging, weight, etc.

Advantages obtained with USG Decorative Insulation:

—Positive blind nailing is obtained, with either staples or nails.

—High insulation value. The ½″ thickness, with a thermal conductance of 0.66, is equal to approximately 19″ of stone concrete in resistance to heat transfer.

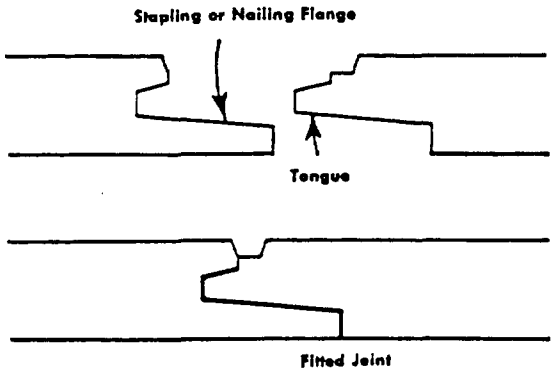
—The plastic resin coated surface, scuff and water-resistant, is not easily marred in handling during application.

—The Hilite or BLENDTEX finish is easily painted with TEXOLITE Paint Products, or other paints, to fit any color scheme.

—The Twin-Tile "two-in-one" feature reduces application costs on square patterns as much as 10%.

—¾″ thick Twin-Tile and Panel-Tile, with a thermal conductivity of 0.44, provides added rigidity.

Kwik-Lok Joint



USG Decorative Insulating Boards are made with the Kwik-Lok Joint: both sides and ends of Twin-Tile and Panel-Tile and long edges of Plank; simplifies alignment of Tile and Plank for true and level walls and ceilings; interlocks securely to prevent joint "breathing".

The Kwik-Lok Joint is designed especially for automatic stapler application. This method is the fastest, most economical application of tile and plank, reducing installation time as much as 50%. The extra wide flange makes nailing easier, too.

How to Apply USG Twin-Tile and Panel-Tile

Stapling is the fastest, easiest and most economical method of applying tile. The flange of the tile is specially designed for this method of application. Use of a trigger type automatic stapler with 9/16″ staples is recommended. Conventional nailing application is also satisfactory.

Tile should be installed on framing, or furring strips shimmed to a true level surface, 12″ or 16″ on center, dependent on the size of tile. Start application of tile at a corner of the ceiling with nailing flanges facing out from the walls. The long dimension of rectangular tile should always be at right angles to the furring strips.

With the end nailing flange centered on the framing or furring strip, face nail the back edge of the border course near the wall. Place staples parallel to the nailing flange, with one staple at each framing member. Then, staple in the end nailing flange, which is always centered on the framing or furring strip. Fit subsequent units snugly but never forced. Joint alignment should be carefully checked. For nailing application use 1¼″ blued lath, or similar nail.

How to Apply USG Insulating Plank

For vertical application of plank, space furring strips horizontally, 10″ on center to a distance of 5 ft. from the floor and 16″ on center above the 5 ft. level. Start at an interior or exterior corner, leading with the nailing flange for easy stapling or nailing. Make sure joints are plumb.

For horizontal application of plank, start at the floor or wainscot with nailing flange facing up, making sure joints are level.

The flange is stapled or nailed at every furring strip or stud. Follow the same general recommendations for the application of Panel-Tile and Twin-Tile.

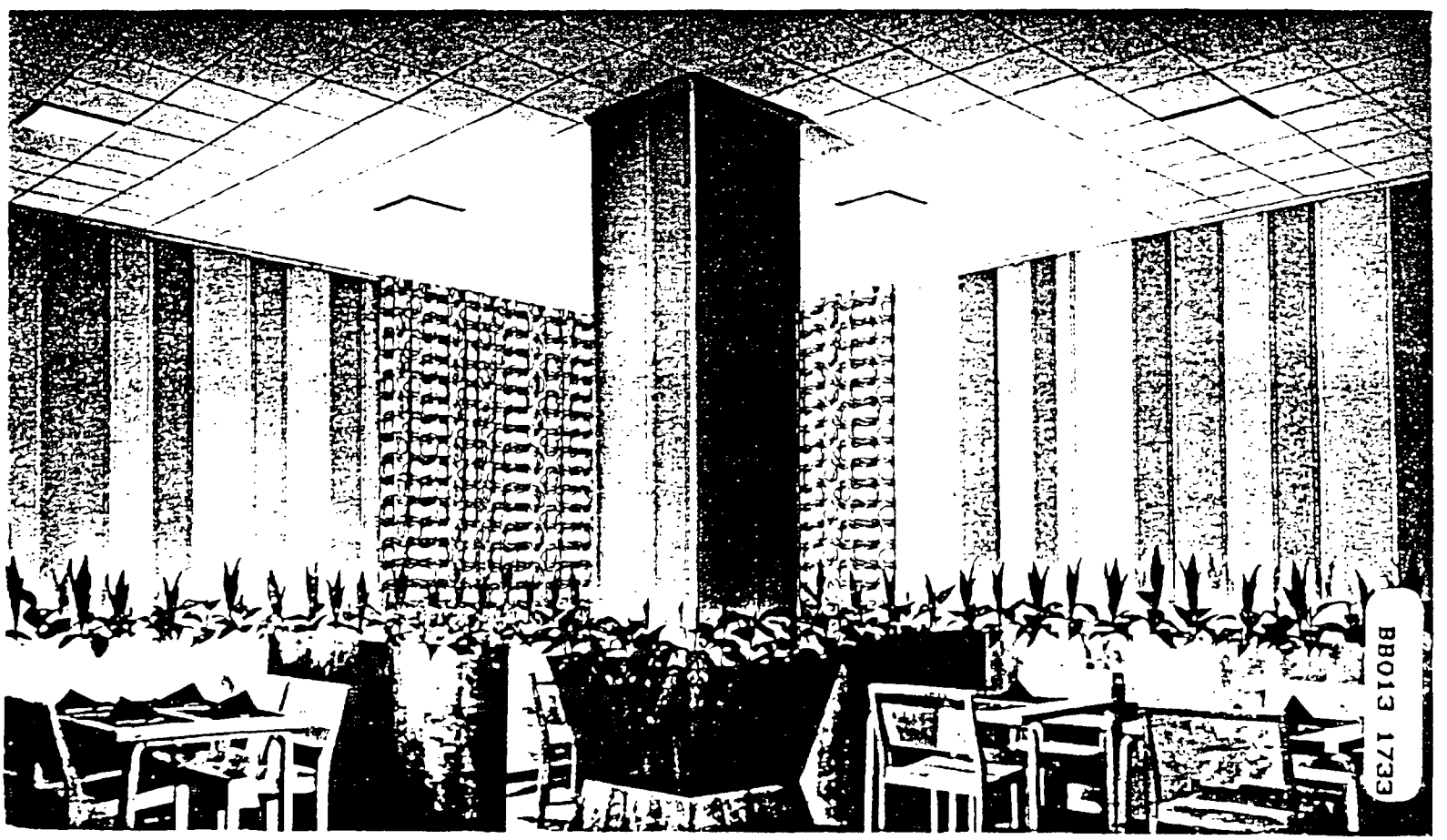
Application with Adhesive

Surface must be sound and dry; remove all foreign substances, such as dirt and grease which may prevent proper bond. Adhesive should be applied to the back of tile or plank, not to the wall or ceiling surface. Work a small quantity of adhesive well into the back of the board with a putty knife, in spots about 2″ in diameter. Then apply additional adhesive to the same areas and to a thickness of approximately ⅜″.

Spot adhesive at corners and along edges so spots are no more than 8″ to 10″ apart, not less than 1½″ to 2″ from the edge, and no adhesive in the center of the tile. Tile or plank is then placed lightly against the wall or ceiling, about 1½″ from the adjacent tile or plank, and slipped into place, gradually increasing the pressure. On uneven surfaces, increased thickness of adhesive is used, so that finished surface is level.

For complete application instructions refer to direction sheet in package.

Restaurant with USG Insulating Twin-Tile ceiling in Hilite finish; walls of USG Insulating Plank in BLENOTEX finish.



QUIETONE

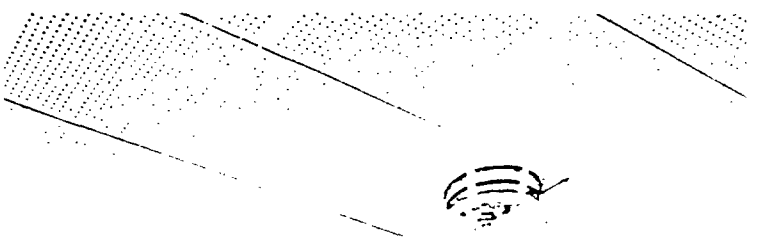
Acoustical Tile

QUIETONE—produced from the same wood fiber as USG Twin-Tile, Panel-Tile and Plank—has high sound absorption values at all frequencies.

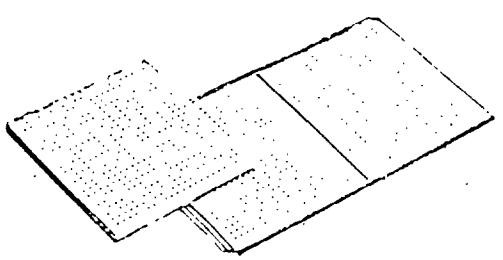
QUIETONE Acoustical Tile is designed for use on the ceilings and walls of any room, to contain or decrease unwanted noise. 3/16" perforations, 184 per square foot, trap up to 70% of the noise that hit the Tile.

The bone-white, cleanable finish of QUIETONE effectively reflects 79% of light rays, a positive aid toward better room illumination in residential, commercial or industrial use.

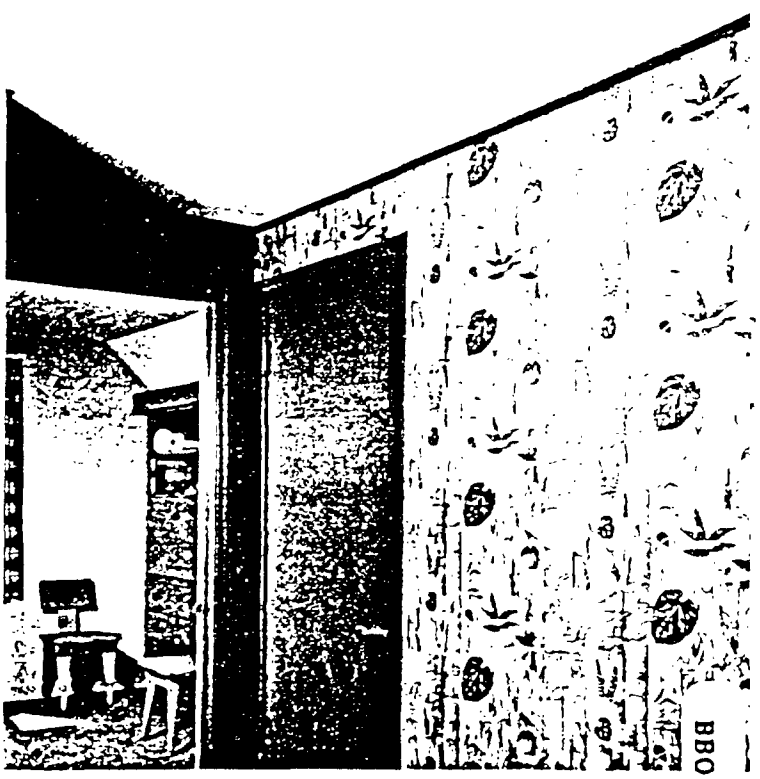
QUIETONE can be repeatedly cleaned for easy maintenance. Since the sound absorption qualities are due to the perforations the tile can be brush or spray painted innumerable times without adversely affecting its efficiency. TEXOLITE Paint Products are recommended.



QUIETONE Acoustical Twin-Tile is 12" x 24" center-scored to make a 12" x 12" pattern—in ½", ¾" or 1" thicknesses. Can be nailed thru the flanges of the Kwik-Lok Joint. Or, the ½" and ¾" thicknesses can be stapled. Either way, no nails or staples are left exposed. Adhesive application is not recommended.



Square QUIETONE Tile is 12" x 12", also ½", ¾" and 1" thick. Butt level edges empahsize the tile effect. Square QUIETONE is generally applied with adhesive to a solid base, such as plaster. Can also be nailed or screwed through the perforations.



BB013 1734

THICKNESS	MOUNTING	Coefficients at Cycles Shown						NRC
		125	250	500	1000	2000	4000	
1"	1	.16	.38	.77	.86	.75	.61	.70
1"	2	.19	.49	.73	.92	.77	.59	.75
¾"	1	.19	.33	.72	.78	.74	.62	.65
¾"	2	.13	.62	.58	.86	.83	.80	.70
½"	1	.09	.28	.69	.73	.73	.68	.60
½"	2	.09	.56	.46	.65	.72	.74	.60

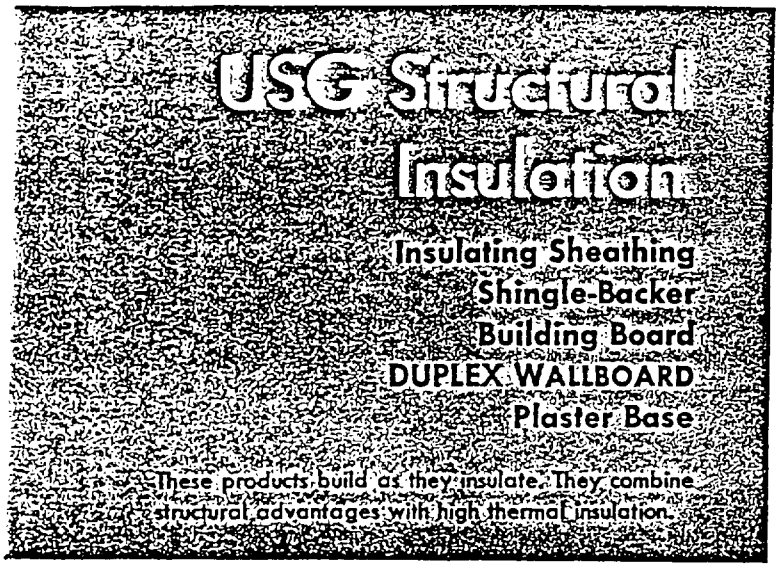
Mounting #1—Cemented to plasterboard (equivalent to plaster or concrete ceilings).
Mounting #2—Nailed to wood strips.
Tests made by a nationally recognized testing laboratory.

SIZES, PACKAGING AND WEIGHTS—USG DECORATIVE INSULATION

Description	Edge	Surface Finish	Thickness	Width	Lengths	Pieces per Bdl.	Approx. weight per 1000 sq. ft.
Twin-Tile or Panel-Tile	Kwik-Lok	Hilite or BLENDTEX	½"	12"	24"	20	900
				16"	32"	18	
		Hilite	¾"	12"	24"	13	1150
				16"	32"	12	
Plank	Kwik-Lok	Hilite or BLENDTEX	½"	8" 10" 12" 16"	8' 10' 12'	12	900
QUIETONE Acoustical Twin-Tile	Kwik-Lok	Bone White	½"	12"	24"	20	800
			¾"	12"	24"	13	900
			1"	12"	24"	10	1500
Square Tile	Butt Level	Bone White	½"	12"	12"	40	800
			¾"	12"	12"	26	900
			1"	12"	12"	20	1500

SIZES, PACKAGING AND WEIGHTS—USG STRUCTURAL INSULATION

Sheathing	T & G long edges	Brown	25/32"	12"	8'	6	1200
	Square		½"	4'	8' 9' 10' 12'	4	1200
			½"			6	860
Shingle-Backer	Square	Brown	½" thick	13½"	48"	25	550
				15½"		22	
Building Board	Square	Hilite	½"	4'	6' 7' 8' 9' 10' 12'	6	750
						3	1500
Plaster Base	V-Joint long edges	Natural	½"	16"	48"	15	740
DUPLEX Wallboard	Square	Hilite	¾"	4'	6' 7' 8' 9' 10' 12'	8	550



How to Apply USG Insulating Sheathing

Apply 2′x8′ Sheathing with the long dimension across the supports and with the groove edge down, interlocking the tongue and groove edges. Abut ends over centers of supports and stagger all end joints.

Apply 4′ wide Sheathing with long dimension parallel to the supports. Abut sides and ends over vertical framing members and top and bottom plates or headers.

Fit snugly around all openings. Using 7/16″ head 2″ galvanized roofing nails, secure sheathing to studs, spacing nails approximately 3″ on outside framing members, 6″ apart on intermediate framing. Where exterior siding is to be secured to the frame with nails driven through the sheathing and into the studs, space nails approximately 8″ on centers. Nail to center and intermediate studs first. Place nails at least 3/8″ from edges.

Asbestos-Cement Siding Shingles—To apply straight edge shingles, use SHADOW-LOCK Attachment System. Level a starter strip for base course of shingles. When top leg of SHADOW-LOCK channel is placed over starter strip, it is automatically aligned. Channel is fastened by nailing 1/4″ from top edge through starter strip (or through shingle in succeeding courses) and 25/32″ USG Insulating Sheathing into each stud. Use 11 ga., 2″ galvanized roofing nails with 7/16″ heads. Corner pieces are applied by first inserting them between the exposed legs of the lower channel and the asbestos siding. At the top, insert one leg of the corner piece between the channel and the siding. Apply next channel to the adjacent side of the corner—over both siding and corner.

Stucco—Apply self-furring 3.4 lb. USG Diamond Mesh Lath over sheathing, nailing it securely into studding with 2″ large head galvanized nails spaced not to exceed 6″ vertically and 16″ horizontally. Apply in normal manner.

Wood Siding—Secure the siding with nails driven through the sheathing and into the studs. Nail penetration should be a minimum of 1½″ into the studs. End joints of siding must be over center of studs.

Masonry Veneer—Attach masonry ties with nails driven through the sheathing into the studs, approximately 12″ on centers, vertically, using nails of sufficient length to penetrate 1¼″ into the studs. Use 6d common or larger.

How to Apply USG Shingle-Backer

Over USG Insulating Sheathing—Apply a wood cant strip along the bottom edge of sidewall to provide a nailing base for first course of Shingle-Backer and shingles. Apply first course of Shingle-Backer with bottom edge ½″ below cant strip, with 8d 2½″ galvanized box nails driven through the sheathing and into the studs. First course of shingles are nailed along the butt edges, which extend ½″ below the lower edge of Shingle-Backer, with 2″ grooved nails centered on and penetrating into the cant strip.

Second and succeeding courses are spaced to provide desired exposure of shingles, butt edge of shingles extending ½″ below the lower edge of Shingle-Backer. Nail Shingle-Backer along the lower edge at each stud through the lower course of shingle, Shingle-Backer, sheathing and into the studs. Stagger end joints. Shingles are applied the same as first course.

Over Wood Sheathing—Shingle-Backer is nailed along the top edge to wood sheathing using 4d small head galvanized nails spaced not over 16″ on center. Apply wood shingles with small headed 5d galvanized nails spaced according to shingle manufacturer's directions.

How to Apply USG Insulating Building Board and DUPLEX Wallboard

If nailheads are to be covered with mouldings, batten strips or other methods, a 4d (1½″) common nail for ½″ thickness may be used. If nails are to be exposed, use No. 17 gauge, 1½″ fiberboard nail.

How to Apply USG Insulating Plaster Base

Apply Plaster Base with the long dimension at right angles to the framing members, using 1½″ 13 gauge, blued 3/16″ flathead lath nails spaced 4″ apart, 5 nails per lath per support. Center end joints on framing members, allowing ¼″ space between ends. Long edges, V-joint, should be fitted together but not forced. Stagger end joints in successive courses and at junction of walls and ceilings. Cut accurately and fit lath neatly around all outlet boxes, etc. Reinforce all re-entrant angles with Cornerite attached to the lath. Apply cornerbead to all exterior angles nailed through to framing.

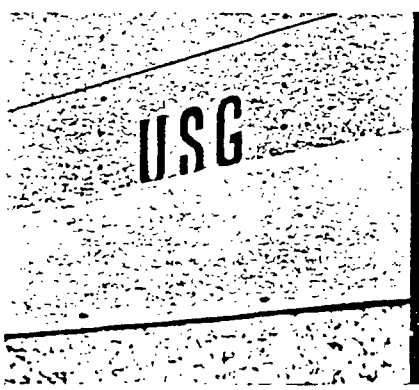
USG Insulating Sheathing

Insulating exterior wall sheathing for homes, farm buildings and storage warehouses. High insulation value—saves over 20% of heat loss through wall when compared to wall sheathed with wood or gypsum sheathing. "K" factor .33.

Provides exceptional bracing strength. Fitted tongue and groove edge on the 2'x8' size minimizes wind infiltration—makes building paper unnecessary except where building regulations require it over all types of sheathing.

Treated to make the board water repellent throughout.

Light weight—easily handled—easily sawed and nailed.



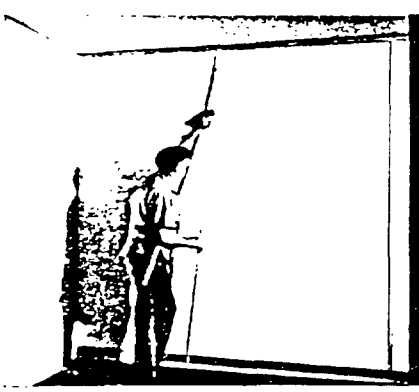
USG Shingle-Backer

Insulating undercourse for wood shingle siding, over USG Insulating Sheathing or wood sheathing.

High insulation value—when used over 2½" USG Insulating Sheathing on conventional construction the "U" factor of the wall is .162 Btu. This reflects a heat loss saving of over 40% as compared to an uninsulated wall.

Light weight—easily handled—easily sawed and nailed.

In two widths: 13½" for 16" wood shingles exposed up to 12" to the weather. 15½" for 18" wood shingles exposed 12" to 14" to the weather.



USG Insulating Building Board

DUPLEX Wallboard ⅜" thick, is an ideal low cost utility wallboard.

Highly efficient insulating board. Especially adapted to insulating farm buildings, storage warehouses, attics and garages. A predecorated wall and ceiling board for all types of rooms. In addition, it has many commercial and industrial uses.

High insulation value—"K" factor 0.33.

Light weight—easily handled and applied.

Readily worked with standard carpenters' tools—easily sawed, cut, grooved, bevelled, drilled, sanded and nailed.

Predecorated surface. Cleaned with wallpaper cleaner. Redecorated with any standard paint; TEXOLITE paints are recommended.

USG Insulating Plaster Base

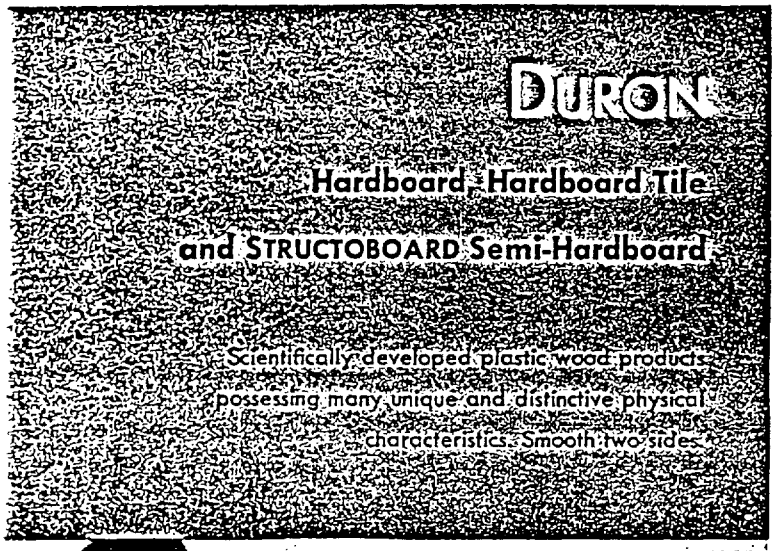
An interior insulating lath for gypsum plaster.

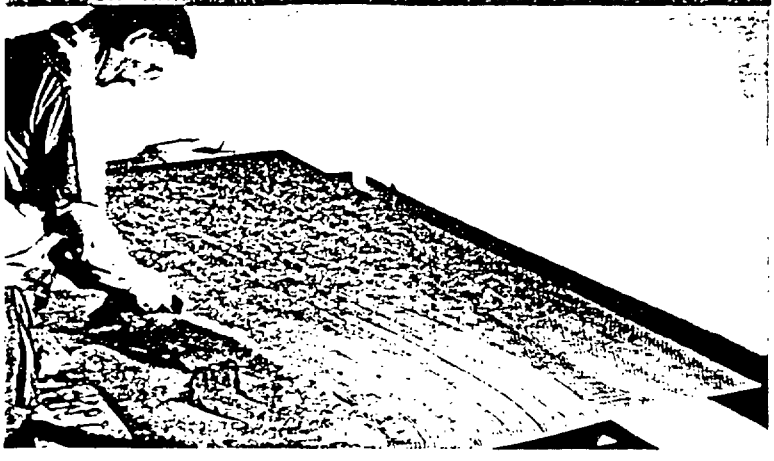
High insulating value—"K" factor 0.33. Saving in heat loss through exterior walls is over 20% more than other commonly used types of plaster base.

Light weight—easily handled, easily applied and plastered. Provides a strong, rigid wall.

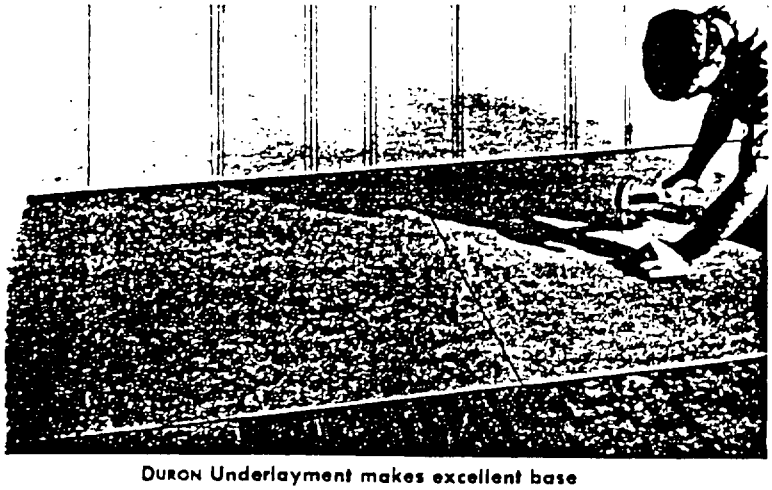
Long edges have V joints. All face edges bevelled.

Use only gypsum plasters, not lime or portland cement plaster.





Ideal wainscoting material—may be nailed up or applied with adhesive.



DURON Underlayment makes excellent base under linoleum and other floor coverings.

Hard, strong wood fibers are closely felted into a homogeneous mat. Compression under tremendous pressure creates a knotless, grainless, dense, strong, flexible, light weight material which is adapted to hundreds of varied uses: counter and table tops—shelves, door panels, displays—signs—toys—lockers—storage bins—chair pads—valances—bed boards—crib boards, radio backs, wainscots, linoleum underlays, truck trailer interiors and many others.

Hardboard can be sawed, die cut, bent, punched, drilled, nailed, screwed, cemented, glued, painted, lacquered, enameled, and waxed.

The hard glossy surface provides an excellent base for paint, enamel, lacquer or plastic finishes.

For these reasons hardboard offers many advantages to commercial wood-working shops and home craftsmen, as well as commercial and industrial institutions. Produced in $\frac{1}{8}$" and $\frac{3}{16}$" thicknesses in regular and treated types.

Treated Hardboard is developed by processing the regular material with a baked oil treatment which increases its strength and water resistance.

Treated Hardboard Tile is produced by scoring one surface in 4" squares to effect a tile pattern.

¼" STRUCTOBOARD is a semi-hardboard, and possesses the same characteristics as the regular hardboard except that it is of lesser density with corresponding lower strength and hardness. For many uses the additional thickness and rigidity and other working qualities are very desirable.

DURON Underlayment provides a smooth, level surface as a base for linoleum, asphalt tile, rubber or cork tile, thus increasing the life of the floor covering.

Easily applied over existing wood floors or wood subflooring in new construction with $1\frac{1}{4}$" cement coated, flat head drive screws set slightly below the surface. Underlayment joints should be staggered, with $\frac{3}{32}$" space between sheets. See direction sheet for complete application data.

SIZES AND PACKAGING

Hardboard (Treated or Regular)

Thickness	Size	No. Pcs. Per Pkg.	Sq. Ft. Per Pkg.
⅛"	2' x 4'	10	80
	3' x 4'	10	120
	4' x 4'	10	160
	4' x 6'	6	144
	4' x 8'	6	192
	4' x 9'	6	216
	4' x 10'	6	240
	4' x 12'	6	288
3/16"	2' x 4'	10	80
	3' x 4'	10	120
	4' x 4'	10	160
	4' x 6'	6	144
	4' x 8'	6	192
	4' x 9'	6	216
	4' x 10'	6	240
	4' x 12'	6	288

Treated Hardboard Tile

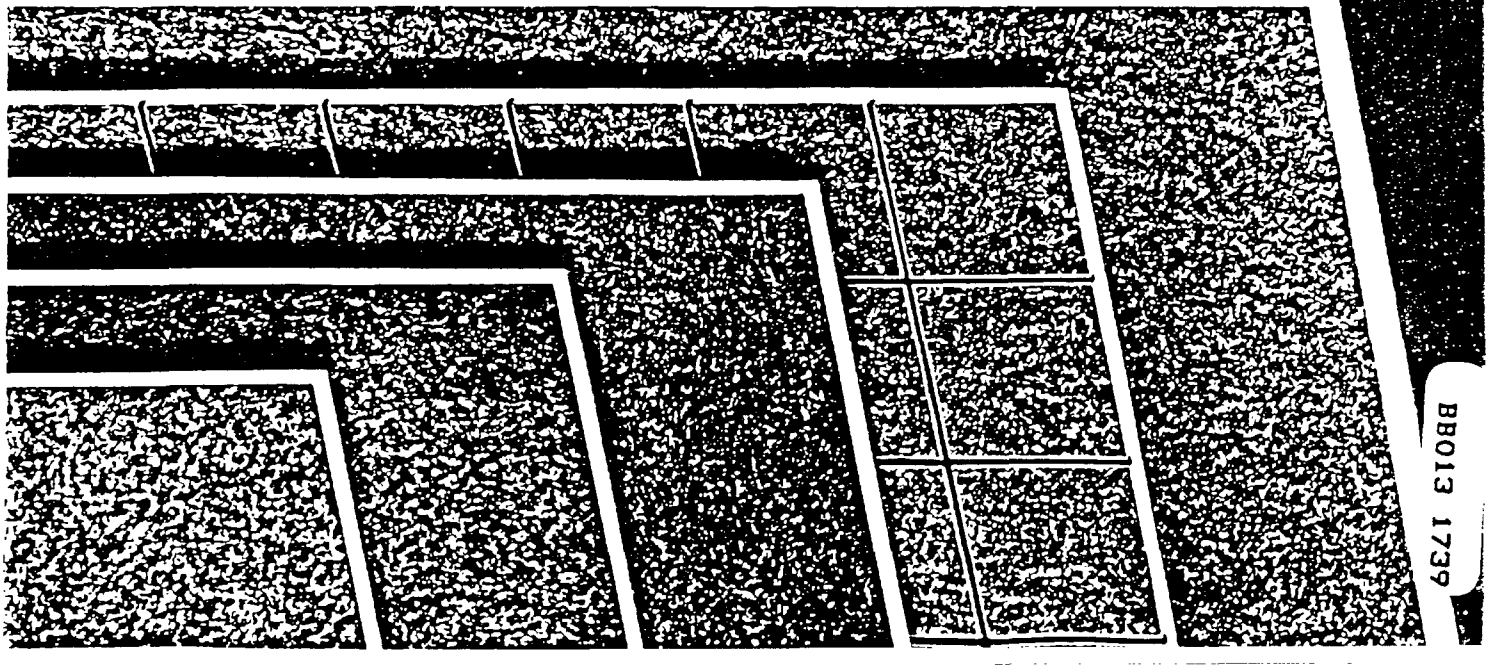
Thickness	Size	No. Pcs. Per Pkg.	Sq. Ft. Per Pkg
⅛"	4' x 8'	6	192
	4' x 12'	6	288
3/16"	4' x 8'	6	192
	4' x 12'	6	288

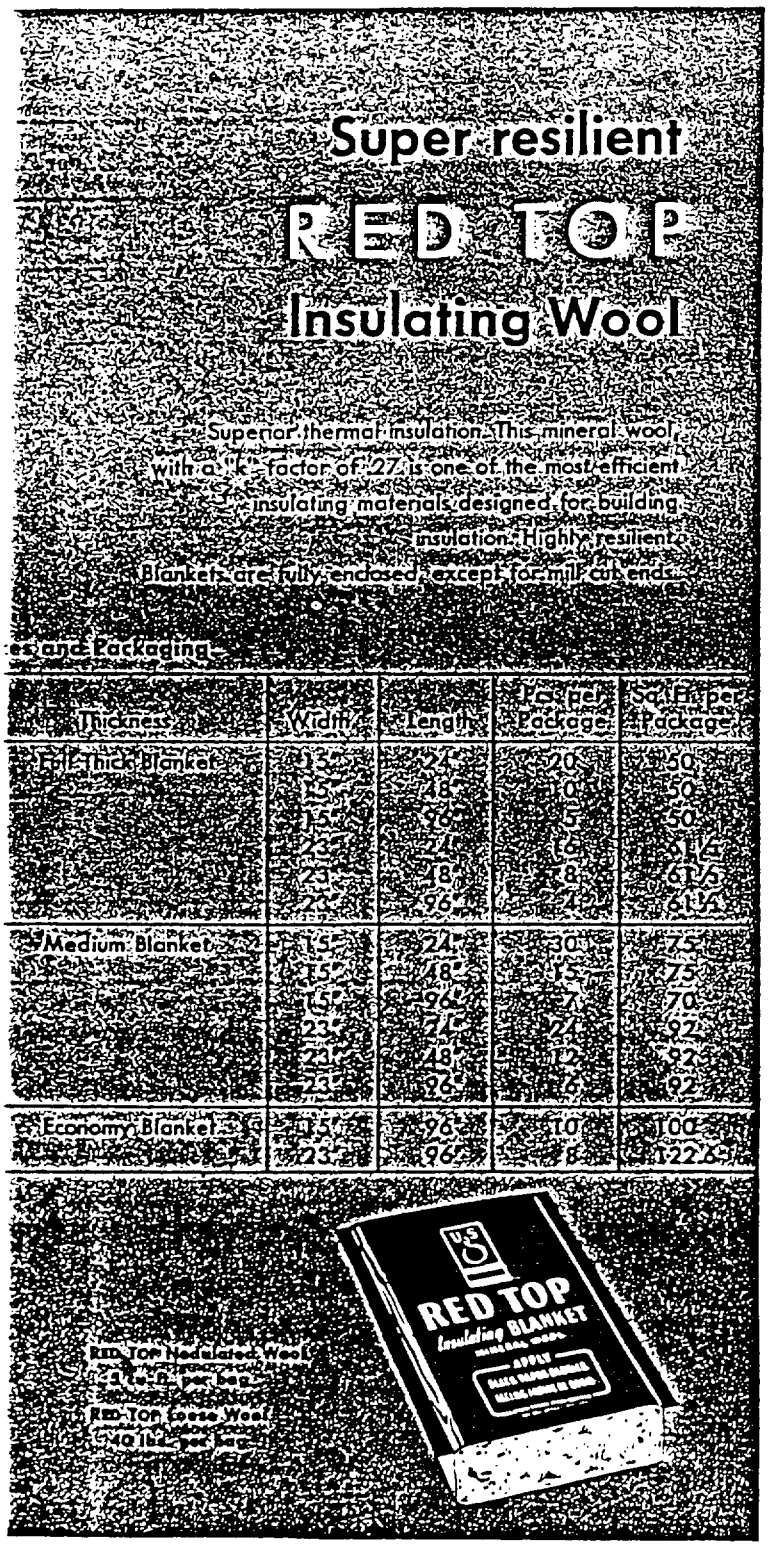
STRUCTOBOARD (Semi-Hardboard)

Thickness	Size	No. Pcs. Per Pkg.	Sq. Ft. Per Pkg.
¼"	2' x 4'	10	80
	3' x 4'	10	120
	4' x 4'	10	160
	4' x 6'	6	144
	4' x 8'	6	192
	4' x 9'	6	216
	4' x 10'	6	240
	4' x 12'	6	288

DURON UNDERLAYMENT:

¼"	4' x 3'	10	120
	4' x 4'	10	160





RED TOP Insulating Wool consists of mineral fibers mechanically formed—into a uniform mat of definite dimensions and controlled density—or into a uniform pellet form suitable for pouring into framing spaces.

Face of Blanket enclosure is glossy asphalted paper, an effective vapor barrier, extending beyond the edges of the wool to form strong nailing flanges. A strong, yet porous, paper completes the enclosure.

Pitched Roofs. Ventilation should be provided by installing louvers or ventilators above the insulation at each end of the attic to relieve high summer temperatures and to improve condensation control. The total area of louver openings should be from ¼ to ½ square inch per square foot of attic floor area.

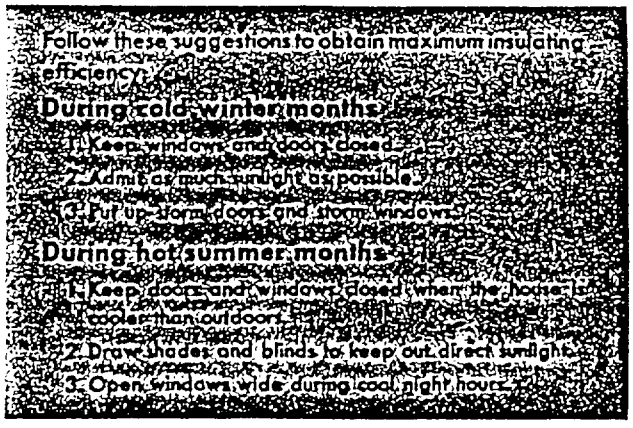
Flat Roofs. Methods of ventilating flat roofs vary because of different types of construction. Ventilation may be provided by louvers located in opposite sidewalls, or by galvanized metal ventilators extending down underneath the cant strips, or through installing a screened opening running the entire length of an overhang. Monitor type ventilation may be utilized.

Vapor Barriers and Humidity Control

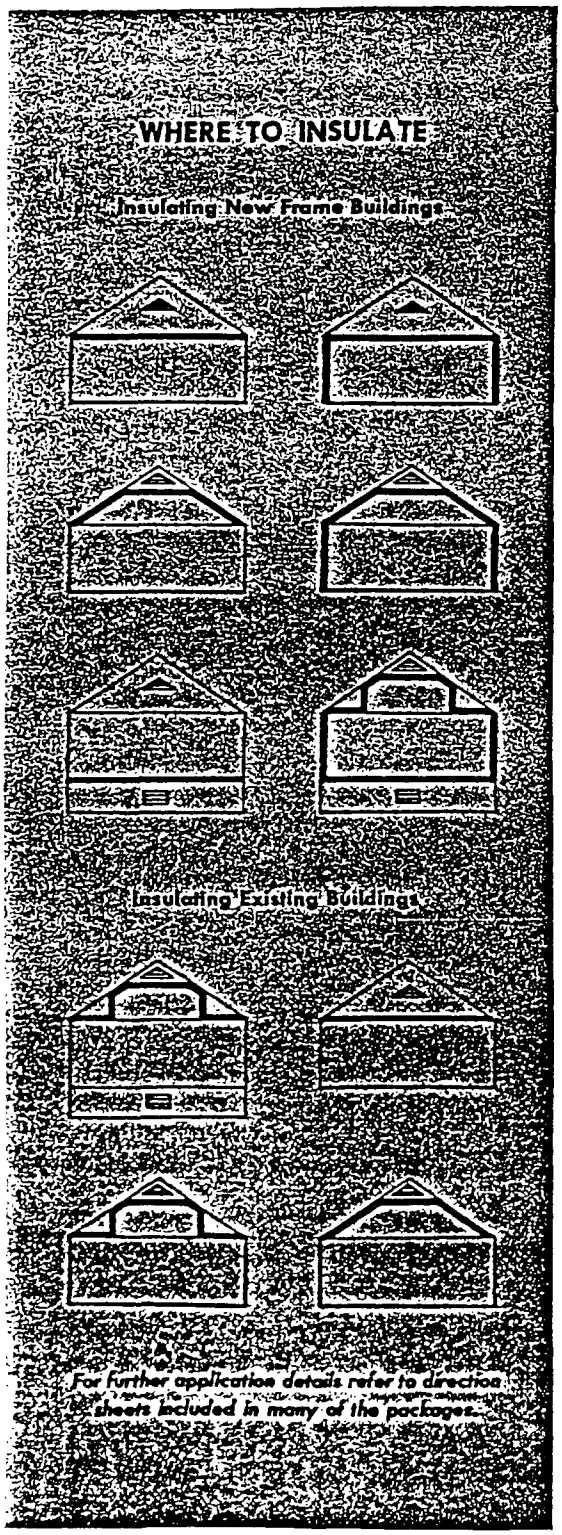
To control condensation an efficient vapor barrier should be installed on the warm, or interior, side of a wall. The vapor barrier built into RED TOP Insulating Wool Blanket Batts automatically provides condensation control when batts are properly installed. It is highly resistant to the passage of moisture vapor.

Interior Humidity

Although vapor barriers offer protection against the formation of condensation and reduce the danger of damage caused by condensation, over-humidification should be guarded against. If the relative humidity in the building is excessive, steps should be taken to reduce the sources of moisture.



APPLICATION OF RED TOP INSULATING BLANKET BATTS



Lay batts between attic floor joists with black vapor barrier side down. Fit snugly, leaving no voids between the batts themselves, between batts and ceiling, or between batts and framing members. Cut to fit where necessary around bridging, conduits, etc. Be sure that batts extend over outside wall top plates.

Start sidewall insulation at bottom plate, placing batts between studding with black vapor barrier side toward the inside of the room. Cut the wool away from the vapor barrier on bottom and top batts to provide approximately 1-inch end flanges. Extend flanges over bottom and top plates. Fit batts close together.

Apply to roofs and ceilings in the same manner as to sidewalls, with black vapor barrier facing inside. **Floors over unexcavated areas** should be insulated by using gypsum board, chicken wire, etc. to support batts in joist spaces. Black vapor barrier should face up. All batts should fit tightly together, and against end blocking. Provide ventilation in crawl spaces. Block framing where necessary to prevent crawl space air entering stud spaces.