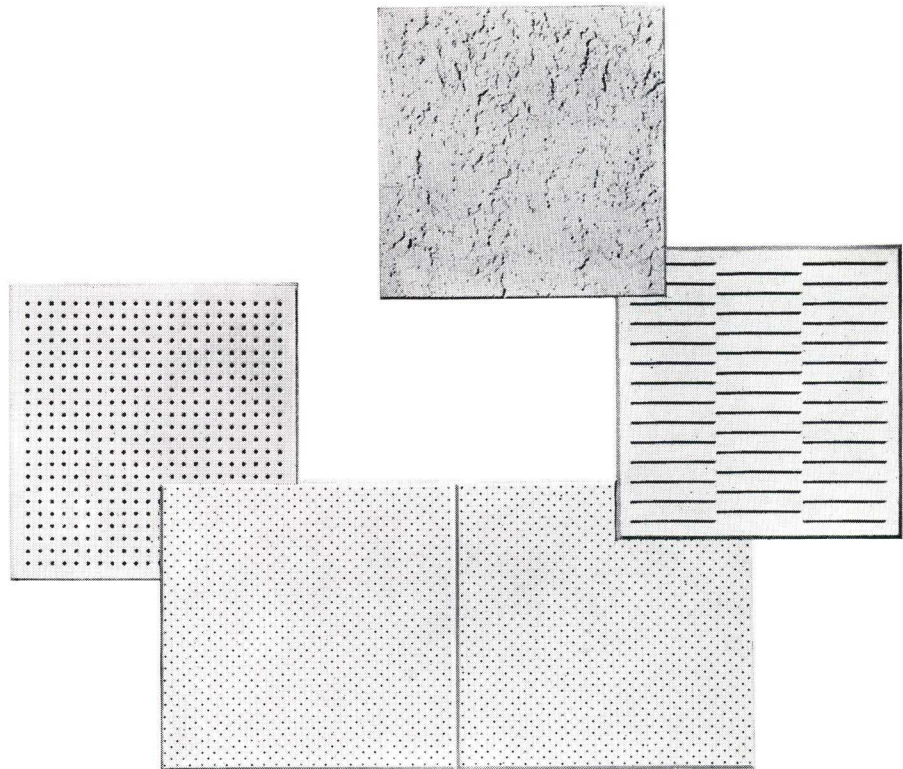


TECHNICAL INFORMATION

USG

SOUND-CONTROL PRODUCTS

AIA FILE NUMBER 39-B



JULY, 1951

AIA FILE NUMBER 39-B



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

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"ACOUSTONE", "AUDITONE", "MOTIF'D", "TEXOLITE", "USG", "RED TOP", "ROCKLATH", "SHEETROCK", and "PERFATONE" mentioned in this publication are registered trademarks owned by United States Gypsum, and are used by it to distinguish its products.

"ACOUSTONE" as used herein identifies the particular mineral acoustical tile;

"AUDITONE" as used herein identifies the particular wood fiber acoustical tile;

"MOTIF'D" as used herein identifies the particular mineral acoustical tile with decorated surface;

"TEXOLITE" as used herein identifies the particular paint;

"USG" as used herein identifies the particular sheathing and sound insulation;

"RED TOP" as used herein identifies the particular plaster;

"SHEETROCK" as used herein identifies the particular gypsum wallboard;

"ROCKLATH" as used herein identifies the particular gypsum lath or plaster base;

"PERFATONE" as used herein identifies the particular perforated metal acoustical tile;

all manufactured only by United States Gypsum.

The Colored Stripes are Reg. U. S. Pat. Off.

ACOUSTONE* "F" ACOUSTICAL TILE

DESCRIPTION

ACOUSTONE "F" mineral acoustical tile is manufactured by binding mineral fibers into a light-weight, highly sound-absorbent tile form. The fissured surface closely resembles that of Travertine marble. No two tiles are identical in texture; the pattern is as natural as the veining of fine marble or the grain of wood. Each tile is finish-painted at the factory and is available with accurately formed bevel or square edges. For sizes, etc., see Technical Data Page 5.

FUNCTION AND UTILITY

ACOUSTONE "F" combines high sound absorption with incombustibility in a product of decorative versatility that fits into the architectural scheme as an inconspicuous surface or as the dominant note in the decoration.

High Sound Absorption

Made in two thicknesses, ACOUSTONE "F" provides Noise Reduction Coefficients of .65 and .70. For auditorium use, the absorption at 512 cycles per second is .77 and .85. In both thicknesses the absorption for the higher pitched sounds, which are considered most annoying, is maintained at a high level to produce more effectiveness. (See Technical Data Page 5.)

Fire Resistance

ACOUSTONE "F" serves to retard the spread of fire. It is rated as *incombustible* by the National Bureau of Standards.

Splined for Good Alignment

All square edge ACOUSTONE "F" (no bevel) is kerfed for splines and "back-cut" on all edges to provide tight, inconspicuous joints (see page 4). The surfaces of adjacent tile are held level by the splines and accurate kerfing. The "back-cut" assures closed joints on wavy ceilings. Butted conventional square edge joints that are 1-32" to 1-16" out of level cause conspicuous shadows which are exaggerated when lighting fixtures are close to the ceiling line. Concealed splines and "back-cut" minimize this "out-of-level" appearance.

Colors

ACOUSTONE "F" is painted at the factory with a full finish coat of a high grade resin emulsion paint (IMPERIAL TEXOLITE*) on the face and exposed bevels in white or ivory; other standard colors shown on the current USG TEXOLITE color selector are obtainable on special order.

Texture

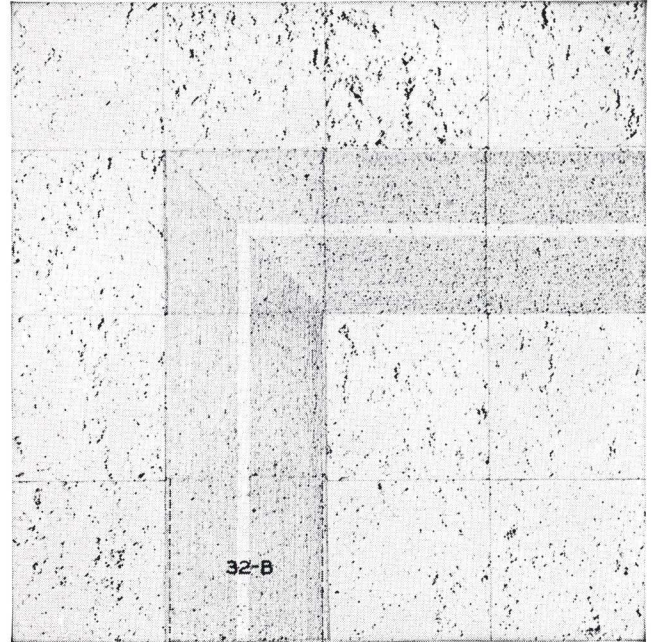
ACOUSTONE "F" is furnished in one texture range only. (See page 12, for special texture on MOTIF'D* ACOUSTONE "F".)

Weight

From years of experience we recommend that acoustical tile cemented on ceilings should weigh no more than 1.75 lbs. per square foot. ACOUSTONE "F" weights do not exceed this. (See Technical Data Page 5.)

Washability

Factory-painted ACOUSTONE "F" may be washed with water and a sponge or cleaned with putty or paste type wall-paper cleaner. Accidental spotting or soiling can usually be removed by this method before over-all redecoration is necessary.



Standard Square Edge ACOUSTONE "F" with Motif'd Border

Resistance to Soiling and "Breathing"

The smooth, hard, painted finish of ACOUSTONE "F" resists soiling and minimizes objectionable air travel through the tile proper.

Paintability

Authoritative tests show that ACOUSTONE "F" may be brush or spray painted many times without loss of sound absorption at **512 cycles** per second or in the **Noise Reduction Coefficient**. The effect of repeated coats of paint on ACOUSTONE "F" and other materials may be found in Research Paper RP-1298 "Effect of Paint on Sound Absorption of Acoustical Materials," which is obtainable from National Bureau of Standards, U. S. Department of Commerce, Washington, D. C. Oil, casein, resin emulsion or calcimine types of paint may be used according to normal paint procedures for interior pre-decorated surfaces.

High Light Reflection

ACOUSTONE "F" in standard white finish has a light reflection of 84%; standard ivory, 72%.

Rodent and Vermin Resistance

ACOUSTONE "F", essentially of mineral composition, is highly resistant to rodents and vermin.

Heat Conductivity

The low thermal conductivity of ACOUSTONE ("k" factor = .35) adds heat insulation to top floor ceilings and exterior walls.

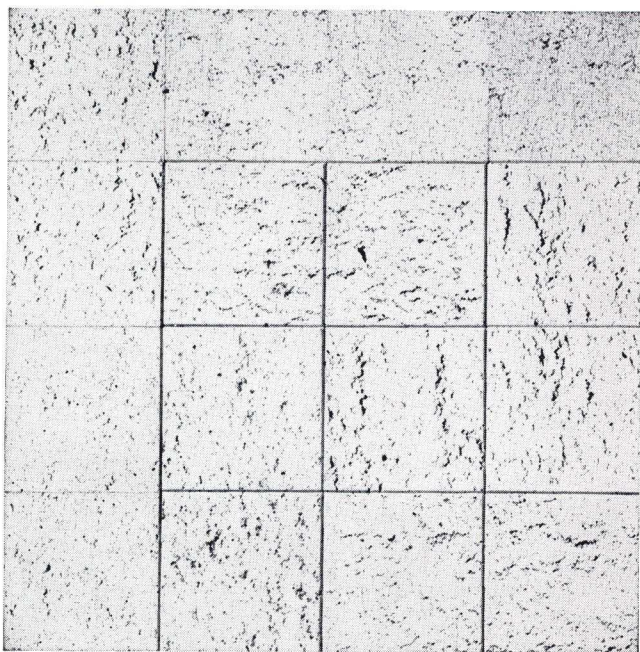
LIMITATIONS OF USE

ACOUSTONE "F" mineral acoustical tile is designed for normal moisture conditions. It is not recommended in dish-washing rooms or where it will be exposed to steam or constant high humidity.

It should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

*Trademarks Reg. U. S. Pat. Off.

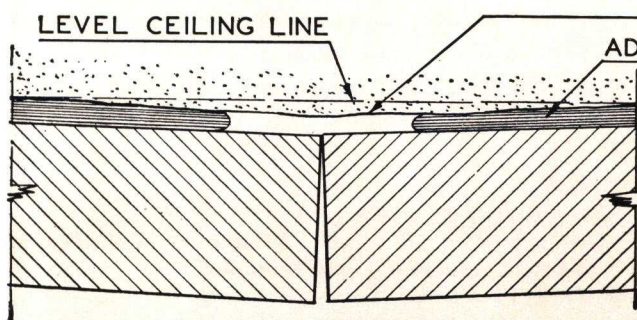
ACOUSTONE "F"



Bevel ACOUSTONE "F"—Conventional joints

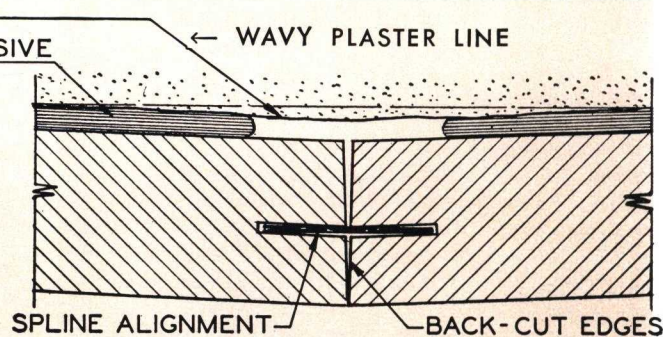


Square Edge ACOUSTONE "F"—inconspicuous joints



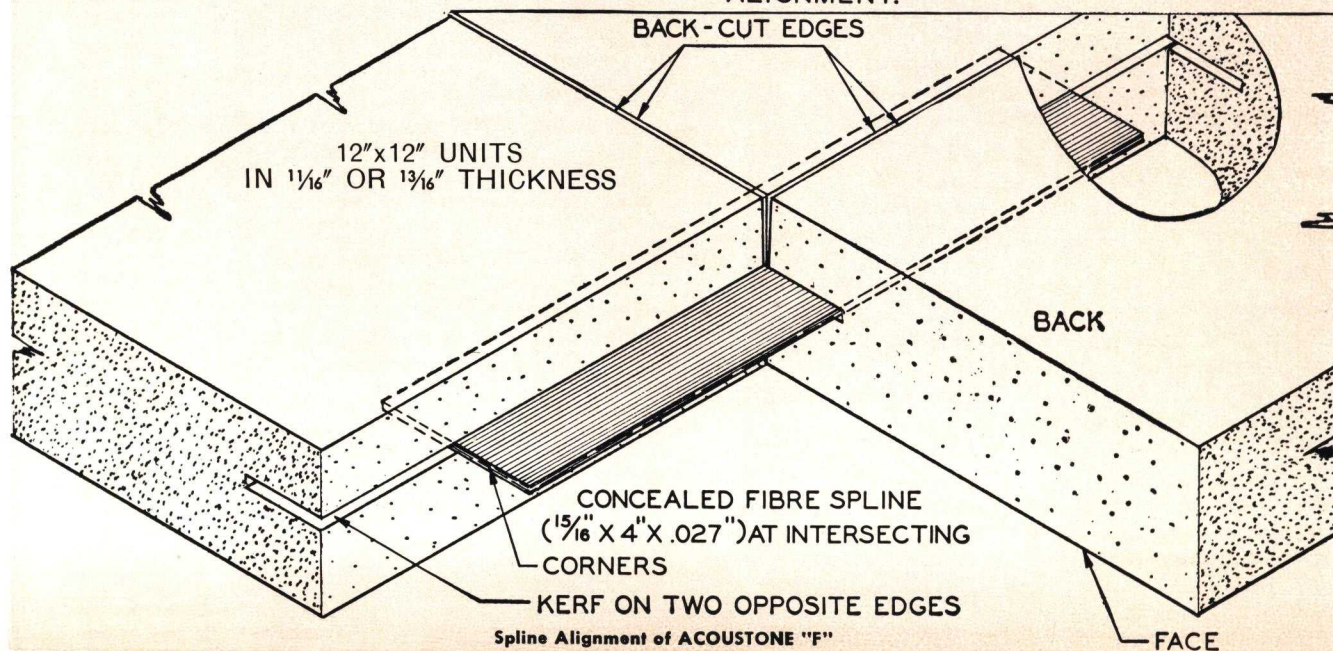
OLD TYPE SQUARE EDGE

PRODUCES OPEN AND OFFSET JOINTS OVER A WAVY CEILING.



NEW TYPE SQUARE EDGE

PRODUCES TIGHTER JOINTS IN CLOSER ALIGNMENT.



Spline Alignment of ACOUSTONE "F"

ACOUSTONE "F"

TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS																						
Acoustical Materials Association										Bureau of Standards (LC-870, August, 1947) Federal Specifications Are Based on Bureau of Standards Tests												
Mount- ing	Thickness	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	Mount- ing	Thickness	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	(SS-A-118a) Feb. 12, 1948		
		128 cps	256 cps	512 cps	1024 cps	2048 cps	4096 cps					128	256	512	1024	2048	4096			512 Cycles	N. R.	Type
1	11/16"	.09	.20	.77	.88	.73	.71	.65	1.30	1	11/16"	.07	.22	.75	.92	.82	.81	.70	1.13	104	5	III
1	13/16"	.08	.24	.85	.87	.74	.75	.70	1.56	1	13/16"	.14	.31	.86	.87	.78	.77	.70	1.33	102	5	III
2	13/16"	.10	.39	.79	.80	.78	.75	.70	1.56	7†	7/8"	.47	.68	.67	.67	.72	.77	.70	1.68		5	III
7	7/8"	.16	.56	.83	.81	.82	.83	.75	1.42													
Tile tested were painted with a full finish coat of paint.										Tile tested were painted with a full finish coat of paint.												
Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings. Mounting No. 2—Nailed to 1" x 3" wood strips 12" O. C. Mounting No. 7—attached to metal supports on metal Suspension system.																						
Light Reflection: ACOUSTONE "F" White (1) 84% ACOUSTONE "F" Ivory (1) 72% MOTIF'D* ACOUSTONE White 78% (1) Tests by Official A.M.A. Laboratory.											Heat Conductivity —k=.35 Fire Resistance —Incombustible. Authority: Bureau of Standards (LC-870, August, 1947). †Separate tests, not listed in LC-870, August, 1947.											

DESIGN DATA

THICKNESS	SIZES	EDGE	INSTALLATION, KERFING, BACK-CUT, AND CENTERSCORING
11/16"	6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: <i>Adhesive only recommended.</i> Square edge units in 6" x 12", 12" x 12", and 12" x 24" kerfed (for .027" thick, 1 5/16" wide by 4" long splines) and back-cut. No kerfing or back-cut on bevelled units. No kerfing for mechanical erection. No centerscoring.
13/16"	6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: <i>Adhesive or nailed direct to wood strips.</i> 1. <i>Adhesive Application:</i> Square edge units in 6" x 12", 12" x 12" and 12" x 24" kerfed (for .027" thick, 1 5/16" wide by 4" long splines) and back-cut. No kerfing or back-cut on bevelled units. No centerscoring. 2. <i>Nailing to Wood Strips</i> (no adhesive used)—Only bevelled units (12" x 12" and 12" x 24"). Centerscoring available on 12" x 24" when specified. Units kerfed for .027" thick, 1 5/16" wide by 4" long splines.
7/8"	12"x24"	Bevel	3. <i>Mechanical Erection:</i> "Zee-Spline Method"—Bevelled or square edge units (12" x 24"). Center-scoring available when specified. Units kerfed and rabbeted.
NOTE: All units that are to be applied with adhesives can be furnished upon request with bevels on one or more edges, the remaining edges left square. This allows creation of special patterns and border effects.			

ACOUSTONE "F"

INSTALLATION METHODS

ACOUSTONE "F" mineral acoustical tile is installed by **approved USG acoustical contractors** by one of three methods:

I. Application with adhesive. (With or without nailing.)

II. Nailing directly to wood strips through concealed fiber splines. (No adhesive.)

III. Mechanical methods.

Each of these methods has individual advantages which fit it for specific types of construction.

I. ADHESIVE APPLICATION (All thicknesses)

Application with adhesive is the most widely used method and is recommended where a suitable base exists.

Adhesive

See Architectural Specifications, page 7, for description and amount of adhesive recommended.

Size of Units

Should not exceed 12" x 12" for ceilings or 12" x 24" for walls.

BASES FOR ADHESIVE APPLICATION OF ACOUSTONE

1. New Plaster. A full thickness of rodded brown coat gypsum plaster in a clean, dry, level state provides an excellent base.

2. New Lime Putty Finish. Since the presence of free lime in a new finish may cause saponification of oils and resins in the adhesive, a combination of adhesive and nailing is recommended.

3. Old Lime Putty Finish. An old lime putty finish (in place over one year) offers a good base if the finish is well bonded to the base coat of plaster. Loose areas should be scaled off and patched with RED TOP* Patching Plaster.

4. Painted Plaster. A good quality of oil paint well bonded to the plaster and in place not less than 6 months will generally give excellent results. Oil in paints will oxidize sufficiently in 6 months so that it will not be objectionably softened by the naphtha thinner in adhesives. Units can also be successfully cemented directly to resin emulsion, casein or calcimine painted surfaces if they are well bonded to the base. Calcimine over a good varnish size or paint will generally give good results.

CAUTION: *Calcimine over hard oil (sometimes called gloss oil) size is an unsatisfactory base. In this case a combination of nailing and adhesives must be used. The acoustical contractor will know by job testing when to augment the adhesive with nailing.*

5. Undecorated Concrete. The concrete slab should be dry, clean and free of any sharp vertical offsets of more than 1/8" (caused by forms out of level). Where concrete slabs have localized areas containing a surface film of loose cement dust, a

proper size (spray or brush application) should be applied before application of acoustical units.

Acoustical units should not be applied with adhesive directly to non-insulated concrete roof slabs during extremely hot weather (over 105° F.) since the adhesive will be subjected to objectionable softening during the first 3 to 5 weeks. After this time the adhesive will withstand this high temperature. In questionable cases, consideration should be given to other methods of application.

6. Painted Concrete. Nailing of units is not possible when they are cemented directly to a concrete surface. The success of the job is therefore dependent on the quality of the paint and its bond to the slab. Unless this can be predetermined, other methods of application should be considered. (See No. 4 above.)

7. USG Gypsum Board Nailed to Wood Strips. ACOUSTONE "F" can be successfully cemented to SHEETROCK* wallboard or plain ROCKLATH* plaster base (not perforated) or USG* Sheathing. Where gypsum boards are nailed directly to wood, SHEETROCK wallboard or USG Sheathing furnishes a better base than ROCKLATH for application of acoustical units with adhesive. No sizing of the SHEETROCK, USG Sheathing or ROCKLATH is required if adhesives conforming to architectural specifications, page 7, are used. The joints and openings in the SHEETROCK, USG Sheathing or ROCKLATH should be sealed with the adhesive used to erect the tile (applies only where gypsum boards are nailed to wood). ROCKLATH without a scratch and brown coat of gypsum plaster should not be used where exposed to excessive moisture or humidity. Gypsum boards less than 3/8" thick should not be used. Standard sizes of SHEETROCK, USG Sheathing and ROCKLATH are shown in the table below.

8. Metal Suspension of Gypsum Board. Where combustible wood furring is not permitted, ROCKLATH for metal suspension on the Zee Spline System is available. This is specially designed for the suspension of 3/8" ROCKLATH as a base for adhesive application of United States Gypsum acoustical tiles. See Page 9. The system is recommended where additional fire protection, combined with light weight and economy, is desired. ROCKLATH for metal suspension on the Zee Spline System gives a rigid ceiling with a minimum of objectionable air travel.

CAUTION: *The use of ROCKLATH without plaster is not recommended where job conditions, particularly moisture conditions, are unsuitable. Accordingly, ACOUSTONE shall be applied to such suspension only when the installation of the base is made under the supervision of and to the satisfaction of the USG acoustical contractor.*

TRADEMARK	STANDARD SIZES			Approx. Wt. Per Sq. Ft.	Spacing of 1" x 3" Wood Strips	Approx. Spacing of Nails
	Thickness	Width	Lengths			
SHEETROCK (Plain)	1/2"	48"	7', 8', 10', 12'	2.1 lb.	16" to 24"	7"
SHEETROCK (Plain)	3/8"	48"	7', 8', 10', 12'	1.6 lb.	16"	7"
USG SHEATHING	1/2"	24"	8' 0"	2.1 lb.	16" to 24"	8"
ROCKLATH (Plain not Perf.)	3/8"	16"	48"	1.6 lb.	16"	4"
Do not exceed spacings of supports shown in the table and do not use gypsum board less than 3/8" thick.						

ACOUSTONE "F"

INSTALLATION METHODS

9. Wood. Adhesive application of ACOUSTONE "F" directly to wood strips or plywood without nailing has not proven very successful because of green wood and the tendency of wood to warp. Tile should be securely nailed with finish nails after application with adhesives.

10. Miscellaneous Surfaces. Follow the recommendations of approved acoustical contractors for surfaces not listed.

II. NAILING DIRECTLY TO WOOD STRIPS THROUGH CONCEALED FIBER SPLINES (No Adhesives Used).

Use only $1\frac{3}{16}$ " x 12" x 24" beveled ACOUSTONE "F." Request detailed drawing which is self-explanatory.

III. MECHANICAL SUSPENSION METHOD.

Zee Spline Method (See drawing Page 9).

Use ACOUSTONE "F" $\frac{7}{8}$ " x 12" x 24" size with beveled or square edges. This method eliminates the $\frac{3}{4}$ " channels and offers an economical, simple, rigid construction. It permits the use of flush joint ACOUSTONE where lighting conditions are not too severe.

The suspension method has metal splines in kerfs along the four edges of each unit which support the tile. They also act as a continuous seal to minimize air travel through the joints. Self leveling of tile joints is assured since intersecting corners of four adjacent units are supported on the same member.

The heavily pigmented finish-paint on ACOUSTONE "F" creates high resistance to objectionable air travel through the tile.

ARCHITECTURAL SPECIFICATIONS FOR ACOUSTONE "F"

(CEMENTED OR NAILED INSTALLATIONS)

(Phrases in parentheses are explanatory)

1. Scope. (List and locate all areas to receive acoustical treatment).

2. Materials. Acoustical material shall be ACOUSTONE "F" manufactured by the United States Gypsum Company having a (Noise Reduction Coefficient of 65 or 70) (sound absorption coefficient of . . . at 512 cycles per second) as tested by A. M. A. Laboratories; shall be composed of mineral fibers manufactured into tile units with a fissured surface; shall be capable of being brush painted repeatedly with oil paints without loss of sound absorption at 512 frequency or noise reduction coefficient; shall be rated "incombustible" by National Bureau of Standards; shall be finish painted on the exposed surface and bevels (state color) with washable paint and have a light reflection coefficient averaging not less than 84% for white (or 72% for ivory), as tested by A.M.A. Laboratories.

(a) (Use when units are applied with adhesive). (Choose 1 or 2 following.)

(1) Units shall be 12" x 12" with square edges and shall have edges kerfed to permit leveling with concealed splines. Units shall weigh no more than $1\frac{3}{4}$ lbs. per square foot.

(2) Units shall be 12" x 12" with $\frac{1}{8}$ " beveled edges. Units shall weigh no more than $1\frac{3}{4}$ lbs. per square foot.

The adhesive shall be of a type manufactured expressly for the purpose; shall not be water soluble, shall not contain ingredients that react chemically with paint, or a solvent that has a stronger solvent action on an oil paint than naphtha; it shall contain no alcohol.

(b) (Use when units are nailed directly to wood furring strips without cement. $\frac{1}{16}$ " beveled units are recommended for nailing.) Units shall be 12" x 24", with beveled edges, and center-scored to simulate 12" x 12" units, and kerfed to receive fiber splines.

3. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer.

(a) (Use when units are applied with adhesive.) Acoustical

units shall be securely cemented in place to a (state base as recommended on page 6). Not less than 4 spots of adhesive averaging not less than $2\frac{1}{2}$ " diameter in direct contact with the tile and the surface to which it is applied shall be used per square foot of tile. Spots shall have a minimum diameter of 2". Tile shall be laid in a (state pattern as square or diagonal or detail design), with edges in alignment. (Use following when square edge units are specified.) Concealed splines shall be accurately fitted into the kerfs in the edges of the units so that there will be a spline at the junction of 4 abutting units and engaging the corners of all 4 units. Border units shall be scribed to neatly fit abutting surfaces.

(b) (Use when units are nailed directly to wood furring strips. Only $\frac{1}{16}$ " beveled units are recommended.) Units shall be securely attached to 1" x 3" wood furring strips spaced 12" on center, by face-nailing through the tile and concealed fiber splines placed into kerfs at edges of units with 3d or 4d finish nails countersunk slightly below the face of the tile. Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work. Border units shall be neatly scribed to abutting surfaces.

MECHANICAL SUSPENSION, "ZEE-SPLINE METHOD"

Note: Use Paragraphs 1 and 2 above specification except material shall be only $\frac{7}{8}$ " beveled units 12" x 24" center-scored to simulate 12" x 12" units, kerfed and rabbeted to receive suspension members.

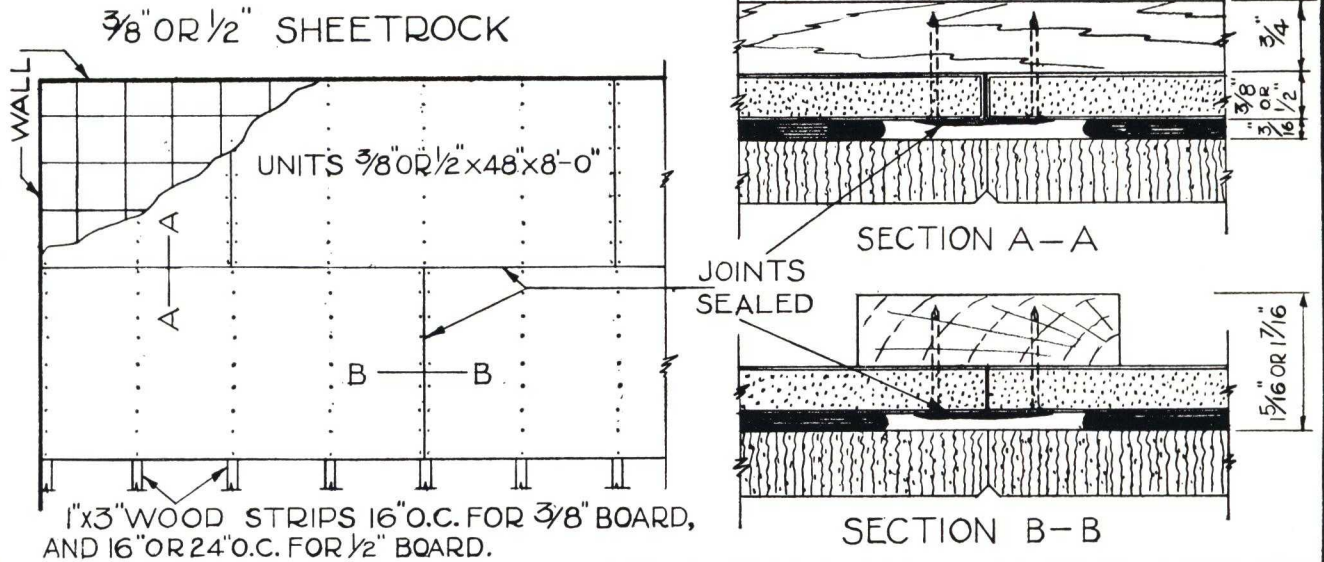
Delete paragraphs (a) and (b) under paragraph 2, Materials.

1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The acoustical tile shall be installed by the **USG Zee-Spline Method** of mechanical erection. The acoustical contractor shall furnish and install necessary metal grillage and the metal finish channels (or wood mouldings) at wall intersections according to manufacturer's instructions. $1\frac{1}{2}$ " channels 4 feet on centers and supporting hangers of not less than 8 ga. wire 4 feet on centers (shall) (shall not) be installed by the acoustical applicator.

ACOUSTONE "F"

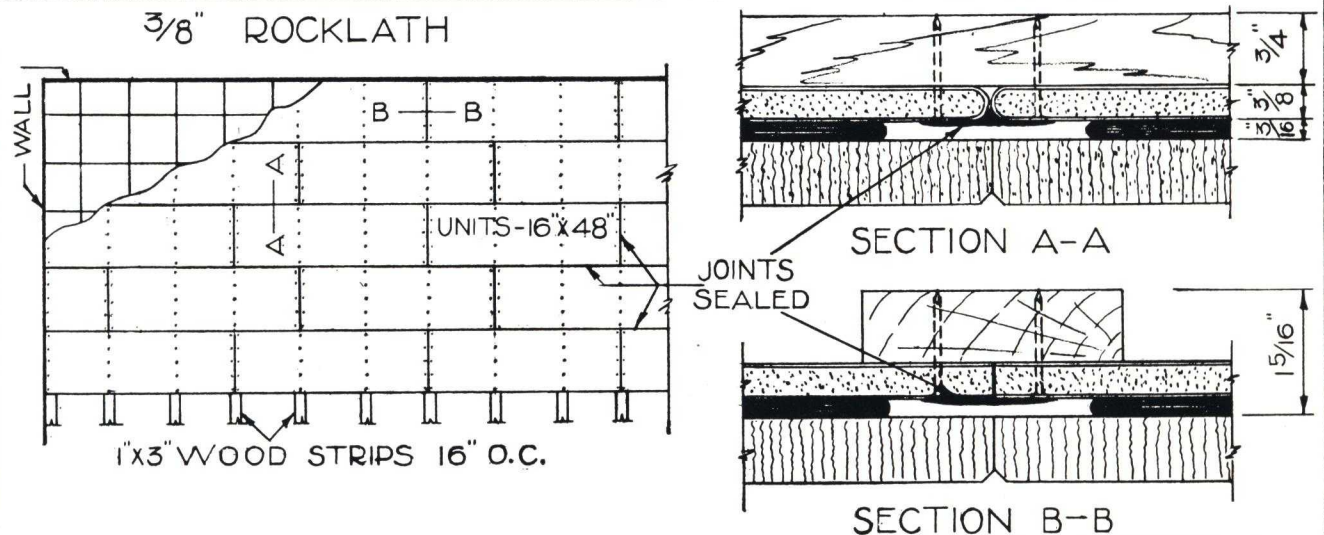
ACOUSTONE CEMENTED TO GYPSUM BOARDS ON WOOD STRIPS

SHEETROCK* WALLBOARD



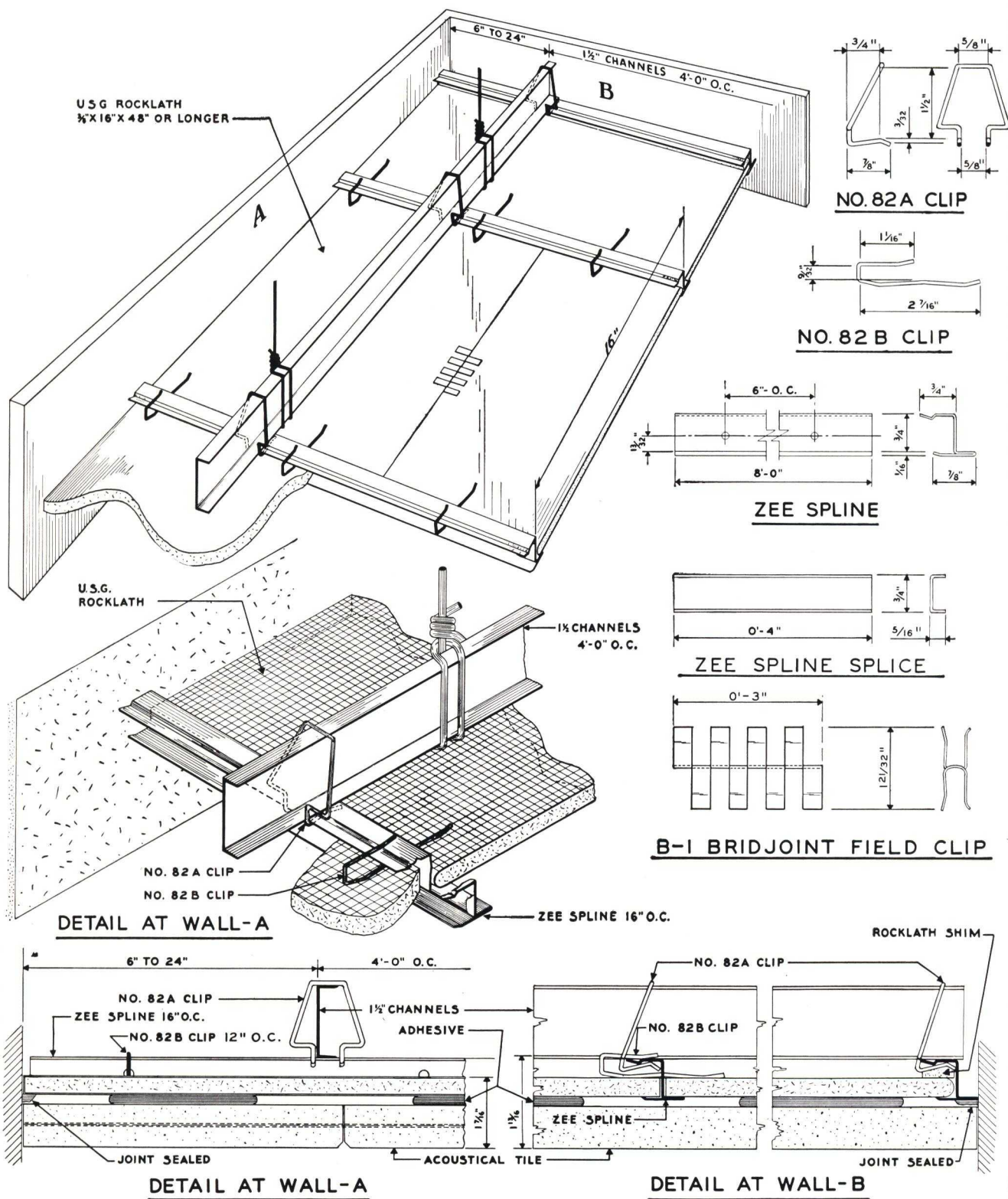
NAILS — CEMENT COATED COOLER — 5d FOR $\frac{1}{2}$ " SHEETROCK AND 4d FOR $\frac{3}{8}$ " SHEETROCK
NAIL SPACING — CEILINGS 7" WALLS — 8"

ROCKLATH* PLASTER BASE



NAILS — $\frac{1}{8}$ " 13 GAUGE BLUE D $\frac{3}{8}$ " FLAT HEAD SMOOTH DIAMOND POINT.
NAIL SPACING — APROX. 4" APART.

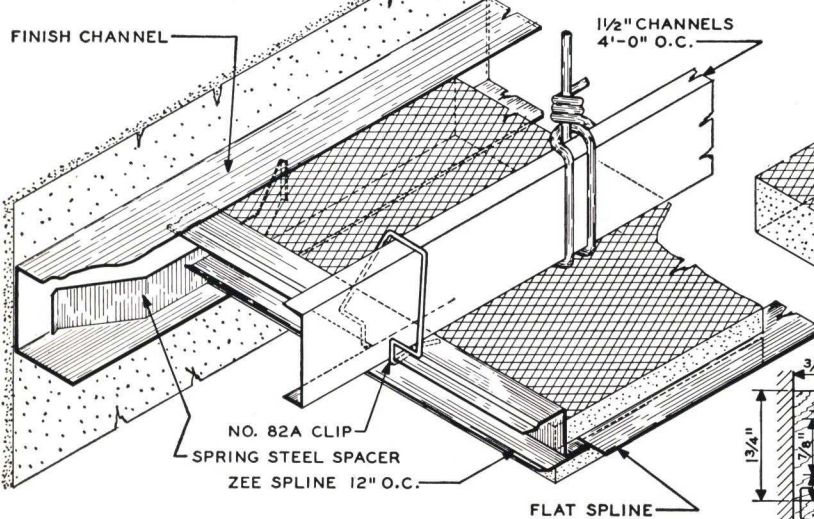
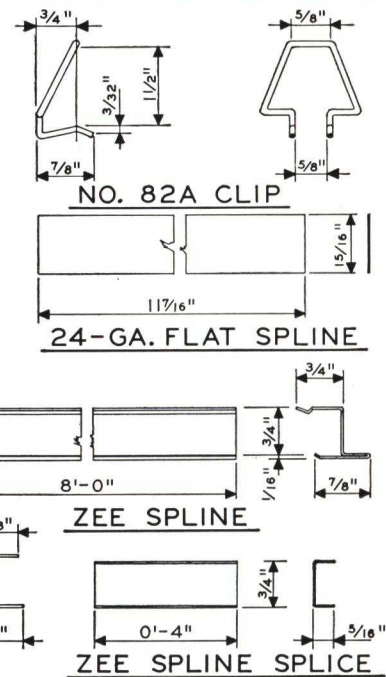
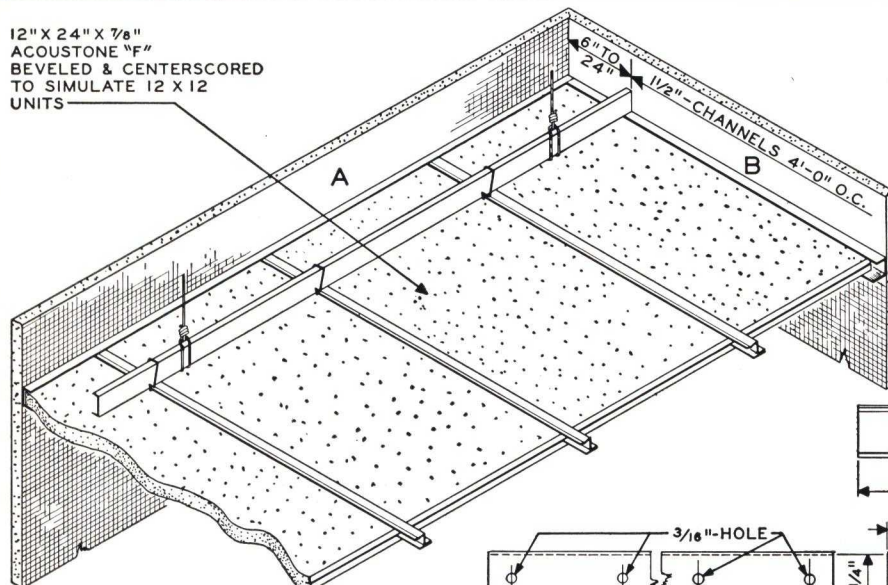
MECHANICALLY SUSPENDED ACOUSTONE "ZEE-SPLINE METHOD"



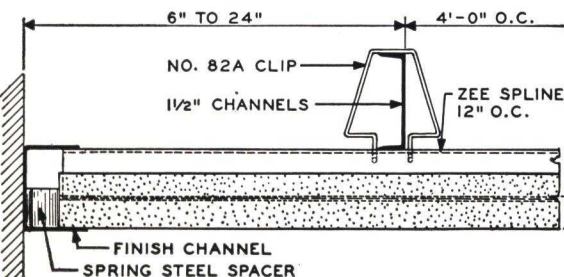
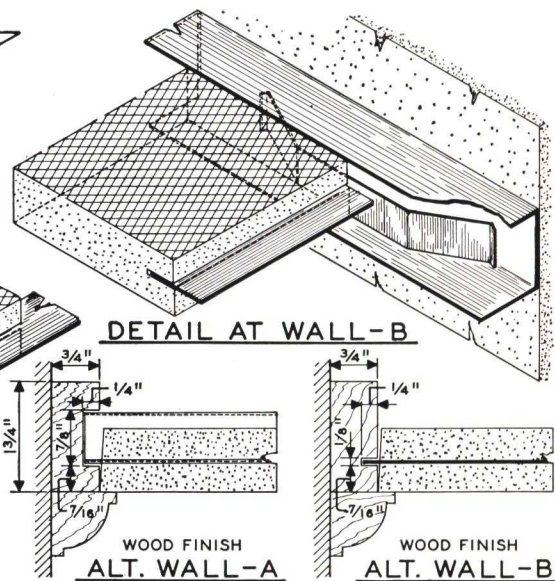
ACOUSTONE "F"

MECHANICALLY SUSPENDED ACOUSTONE "ZEE-SPLINE METHOD"

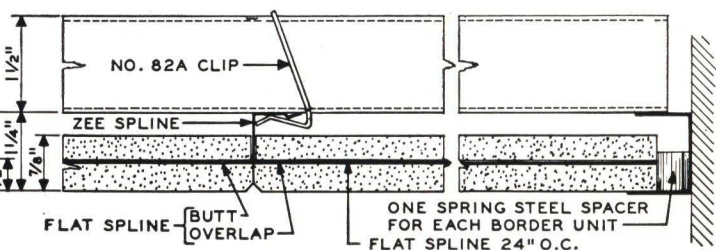
12" X 24" X 7/8"
ACOUSTONE "F"
BEVELED & CENTERSCORED
TO SIMULATE 12 X 12
UNITS



DETAIL AT WALL-A



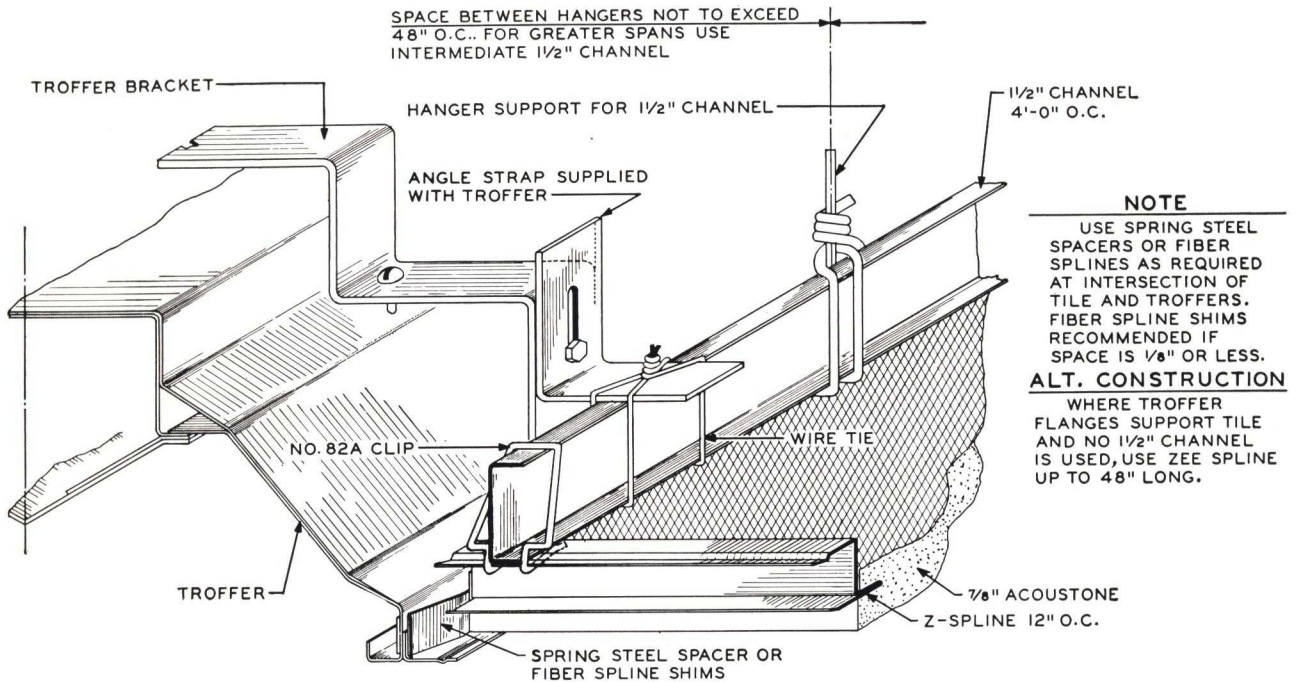
DETAIL AT WALL-A



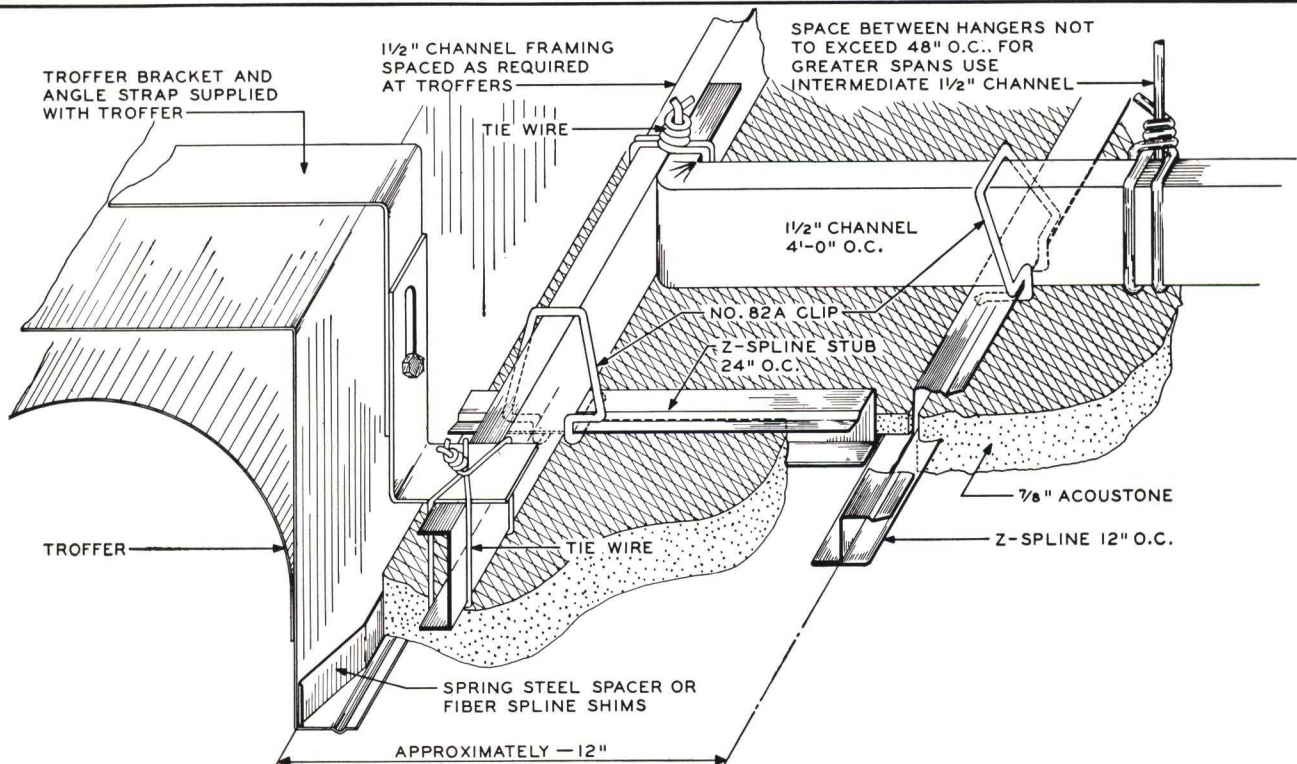
DETAIL AT WALL-B

ACOUSTONE "F"

ZEE-SPLINE METHOD OF ERECTING ACOUSTONE WITH FLUORESCENT LIGHTING



ALTERNATE METHOD—1 1/2 INCH CHANNEL PERPENDICULAR TO LIGHT TROFFER



MOTIF'D* ACOUSTONE

DESCRIPTION

MOTIF'D ACOUSTONE mineral acoustical tile is standard ACOUSTONE "F" mineral acoustical tile with a permanent integral decoration "etched" into its surface by an exclusive USG process. After the "etching" is completed, the tile is mill painted. The pattern is produced by the heavier shadow caused by the "etched" portion of the tile rather than by differences in applied color. Soft, low contrast can be maintained or the pattern can be accentuated by properly positioning the lighting source to increase the shadow effect.

SIZE

MOTIF'D ACOUSTONE is available in 12" x 12" units; $\frac{11}{16}$ " or $\frac{13}{16}$ " thick; with square edges only, kerfed for splines.

FUNCTION AND UTILITY

MOTIF'D ACOUSTONE embodies all the function and utility of ACOUSTONE "F" except for the following:

Light Reflection—The light reflection of white MOTIF'D ACOUSTONE is 78%.

Designs—Many standard tile patterns are available; or we will execute exclusive patterns of any design limited to "etching" single tile in not more than 2 directions and with a resulting pattern which can be produced within the area of four

12" x 12" units.

Cost—Costs slightly more than ACOUSTONE "F".

Installation—Application with adhesive and splines is the only method recommended using the same methods as for adhesive application of ACOUSTONE "F".

ARCHITECTURAL SPECIFICATIONS FOR MOTIF'D ACOUSTONE

(Phrases in parentheses are explanatory)

1. SCOPE. (List and locate all areas to receive acoustical material.)

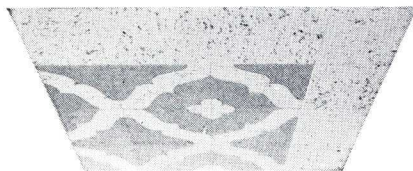
2. MATERIALS. Acoustical material shall be MOTIF'D ACOUSTONE manufactured by the United States Gypsum Company in (state color). Units shall be (state thickness) and have a (Noise Reduction Coefficient of . . .) or (512 frequency coefficient of . . .) (select from page 5). Adhesive shall be (refer to specification under ACOUSTONE "F").

3. INSTALLATION. The installation shall be made by an applicator approved by the acoustical material manufacturer. The design shall be (state standard pattern number or detail design). The units shall be securely cemented in place. (Continue according to adhesive application methods for ACOUSTONE "F".)

HOW IT WORKS

The unretouched photographs below were made from the same point of the same section of an installation of MOTIF'D ACOUSTONE under three different lighting conditions. (1) The left-hand picture shows about maximum contrast or color difference obtained under normal lighting; (2) the central illustration, the minimum contrast; (3) the reversal of pattern in the right-hand picture, when light was shifted 180° from that used in

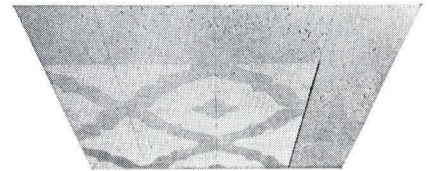
the left-hand view. Such changes in degrees of contrast are usually apparent in every MOTIF'D ACOUSTONE installation. This "mobile" effect shifts, not only with light changes, but with changes in position of the observer. The pattern never becomes monotonous. The barely measurable reduction in light reflective ability does not cause any significant changes in lighting costs.



Lighted from lower left corner



Lighted with single lights on either side of camera position



Lighted from upper right corner

DESIGNS

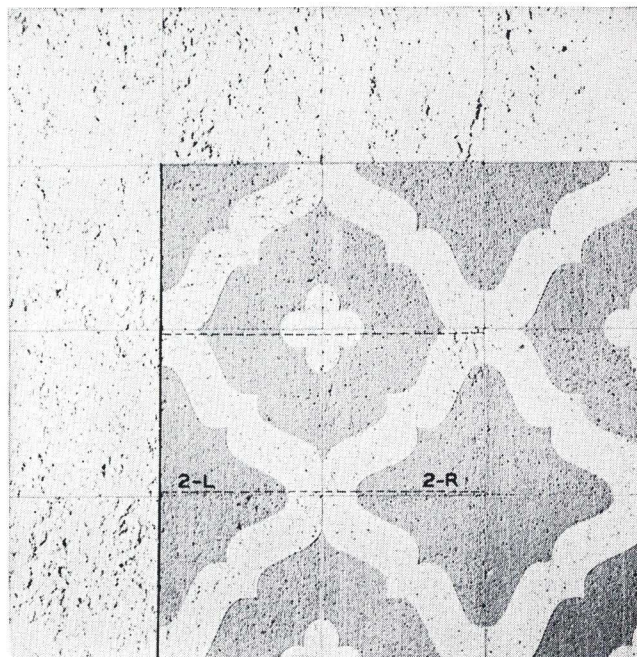


FIG. 1—MOTIF'D Design 2 R-L

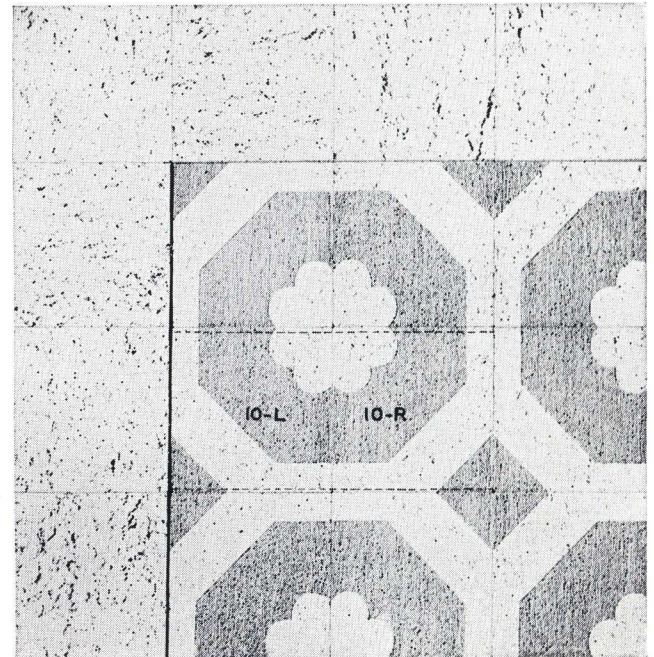


FIG. 2—MOTIF'D Design 10 R-L

*Trademarks Reg. U. S. Pat. Off.

MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines----- indicate direction of kerfing for fibre splines

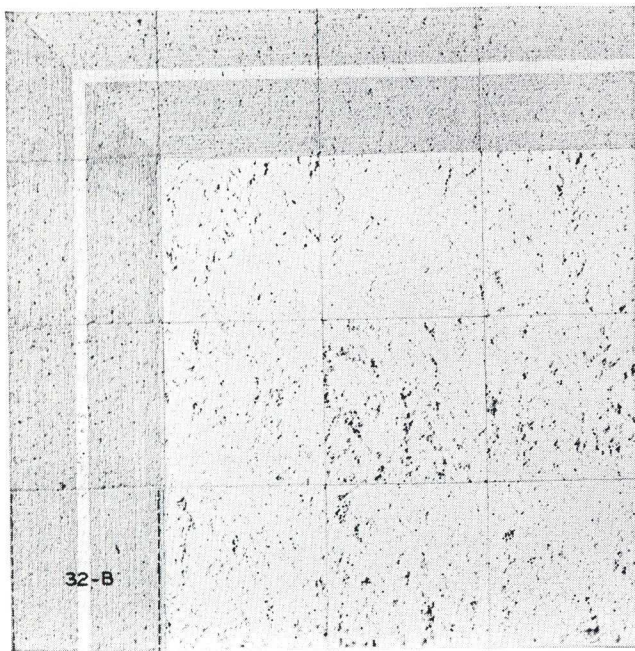


FIG. 3—MOTIF'D DESIGN 32-B with corner unit mitered on job.

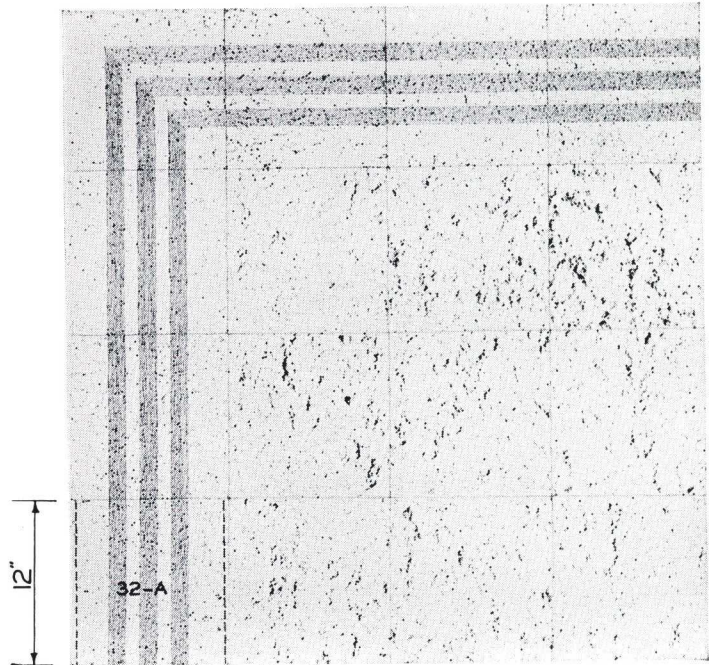


FIG. 4—MOTIF'D DESIGN 32-A with corner unit mitered on job.

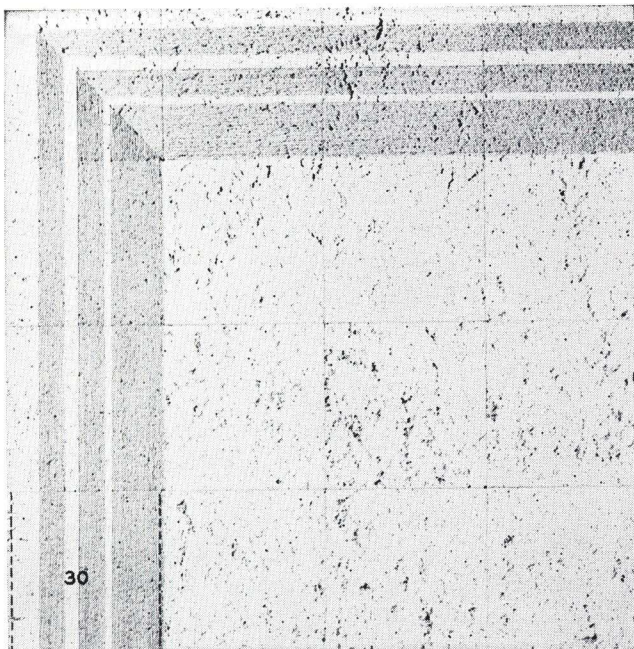


FIG. 5—MOTIF'D DESIGN 30 with corner unit mitered on job.

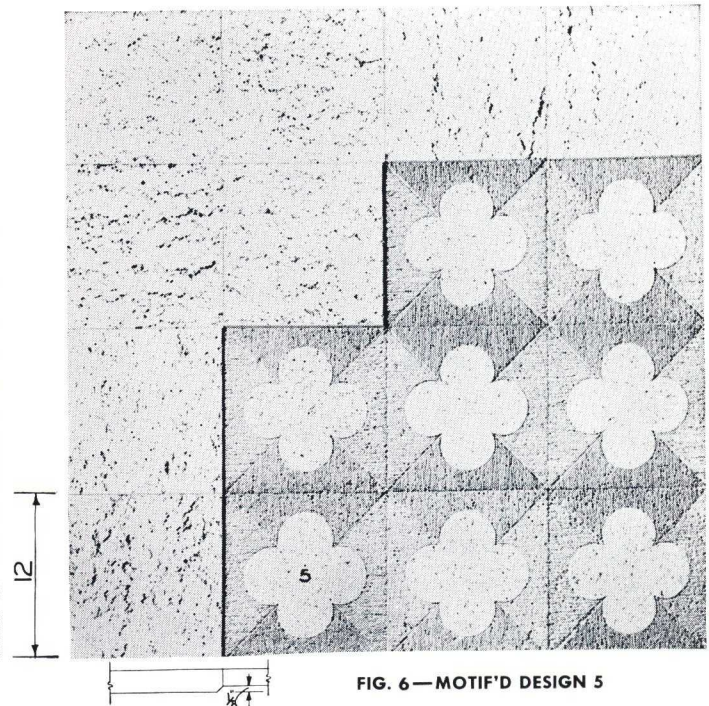


FIG. 6—MOTIF'D DESIGN 5

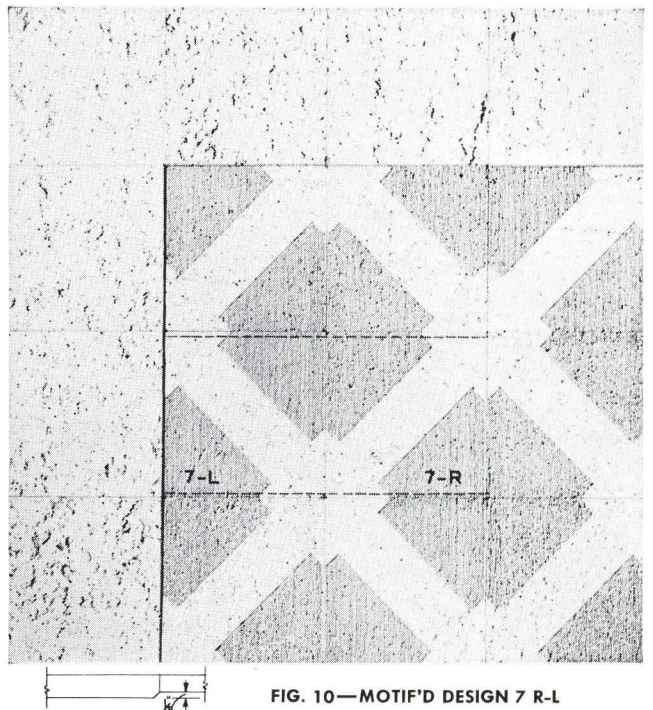
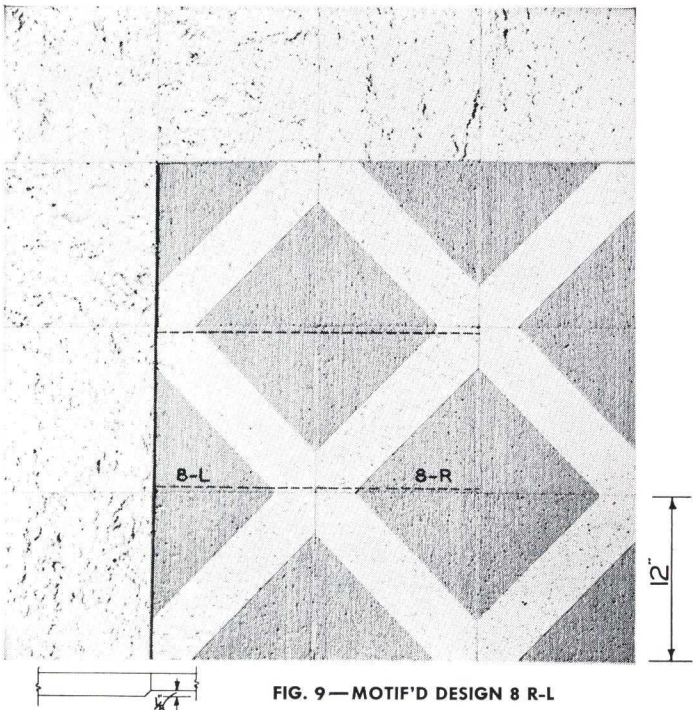
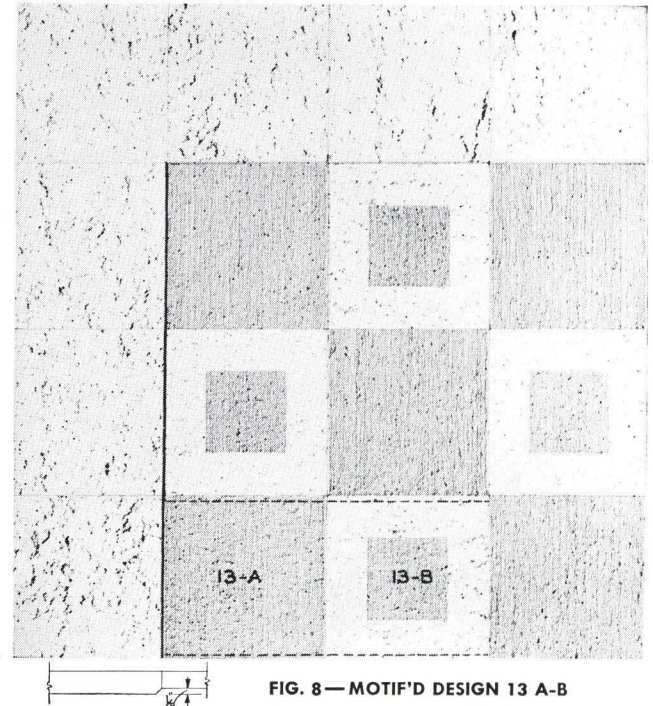
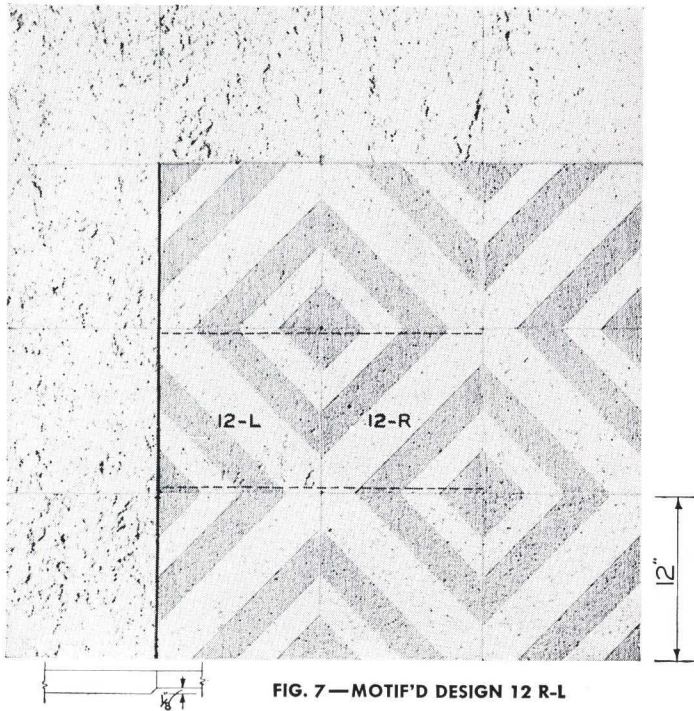
MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines



MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines

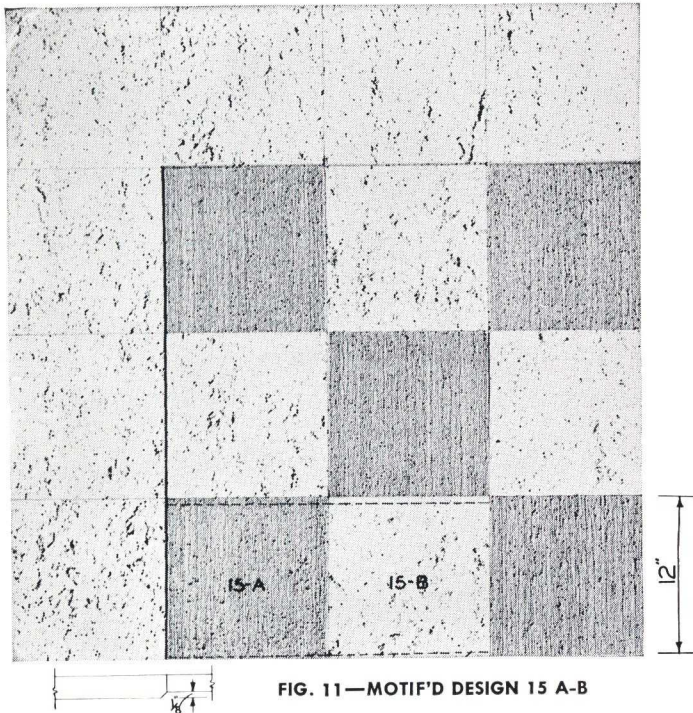


FIG. 11—MOTIF'D DESIGN 15 A-B

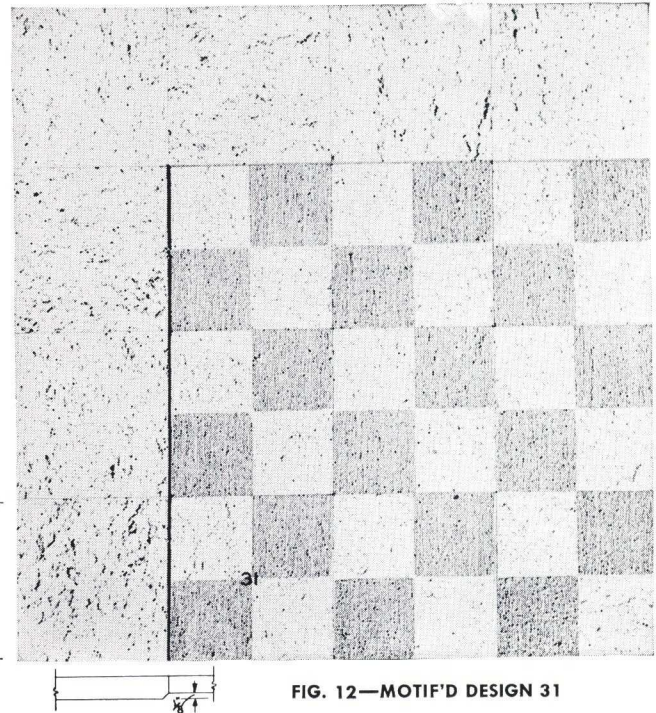


FIG. 12—MOTIF'D DESIGN 31

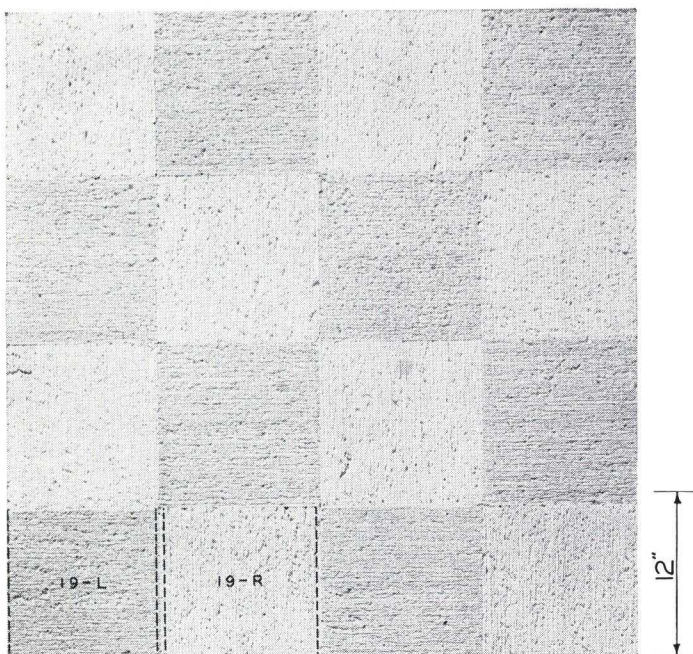


FIG. 13—MOTIF'D DESIGN 19 R-L

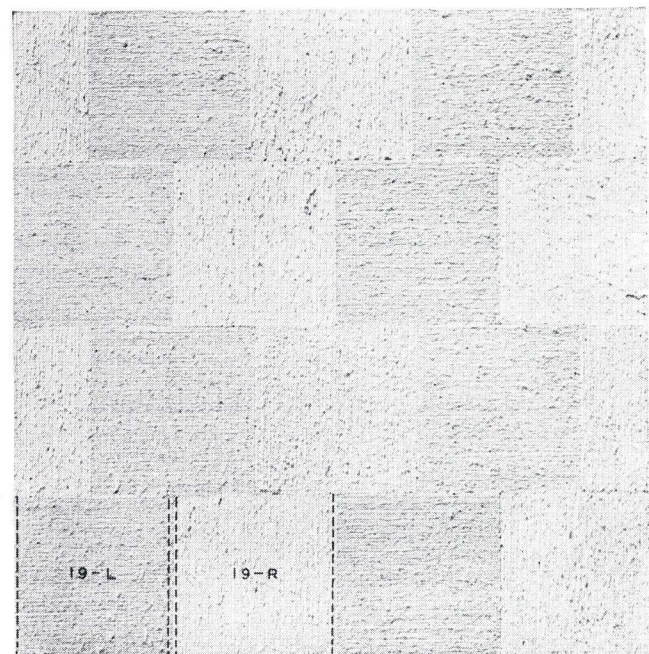


FIG. 14—MOTIF'D DESIGN 19 R-L

MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines

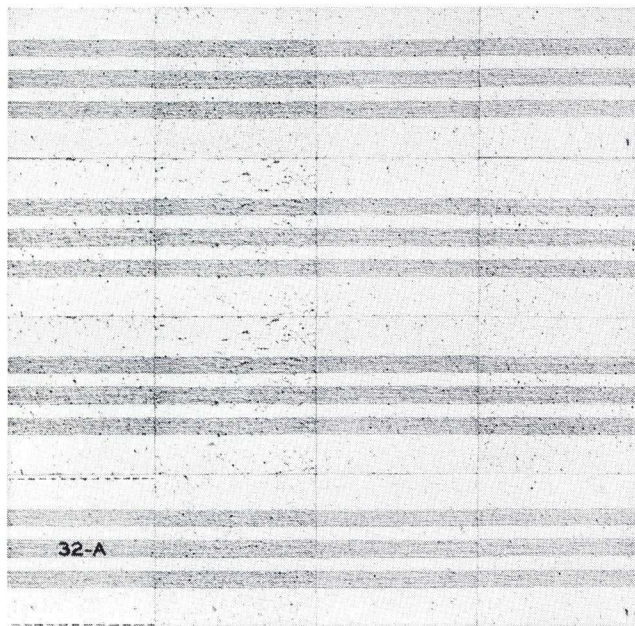


FIG. 15 — MOTIF'D DESIGN 32A

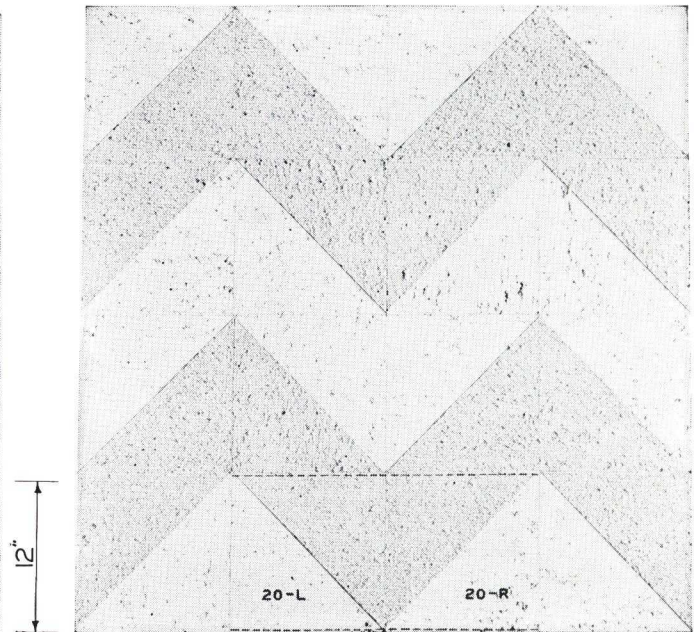


FIG. 16 — MOTIF'D DESIGN 20 R-L

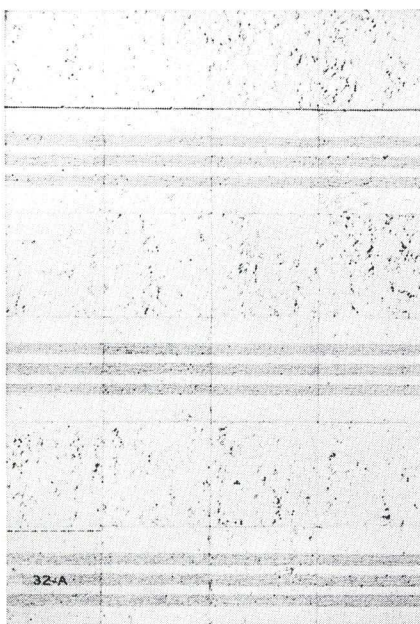


FIG. 17 — MOTIF'D DESIGN 32-A

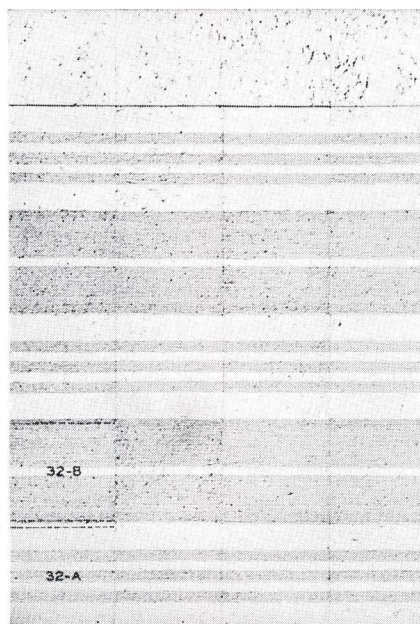


FIG. 18 — MOTIF'D DESIGN 32 A-B

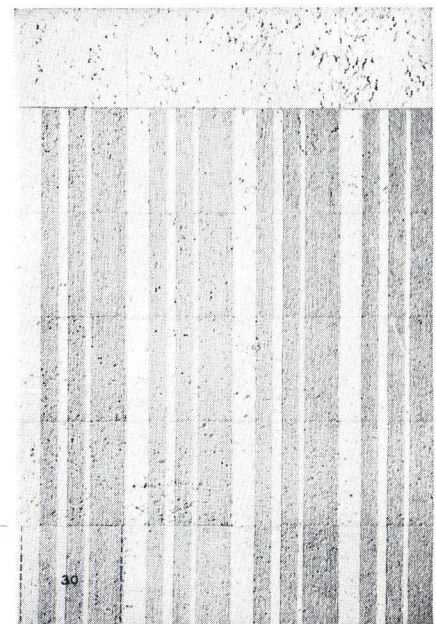


FIG. 19 — MOTIF'D DESIGN 30

PERFORATED AUDITONE* ACOUSTICAL TILE

DESCRIPTION

Perforated AUDITONE wood fiber acoustical tile is a perforated wood fiber tile designed to give maximum acoustical efficiency and strength and an unobtrusive, efficient, functional appearance. Each unit is finish-painted at the factory and is available accurately formed, with beveled or tongue and groove edges.

SIZES— $\frac{1}{2}$ ", $\frac{3}{4}$ " or 1" by 12" x 12" or 12" x 24". (See Technical Data Below.) The 12" x 24" tongue and groove units are scored and perforated to represent two 12" x 12" units.

FUNCTION AND UTILITY

Sound Absorption—Perforated AUDITONE has a noise Reduction Coefficient of .55 to .70 depending upon thickness of tile and type of mounting. (See Technical Data Below.)

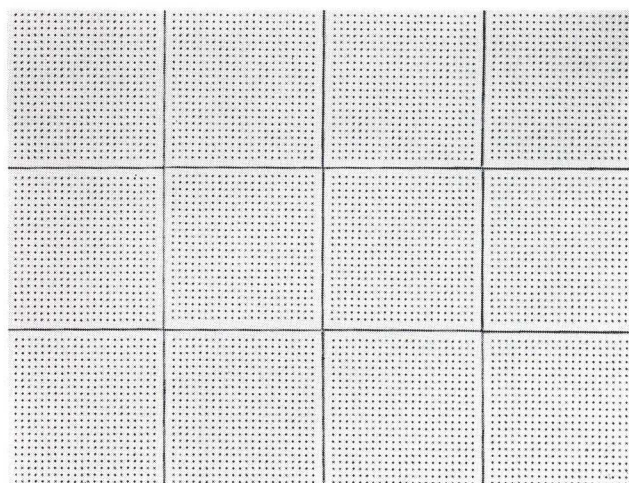
Edge Treatment—Perforated AUDITONE is made with butt bevel edges for cementing to proper bases without supplementary nailing; supplied with tongue and groove edges for blind nailing directly to joists, studs or nailing strips. The tongue and groove maintains level joints and a smooth appearance. Tongue and groove Perforated AUDITONE is not recommended for application with adhesive. (See Technical Data Below.)

Paint and Color—Finish-painted at the factory on face and bevels in high light reflecting white. (See Technical Data Below.)

Weight—Perforated AUDITONE weighs approximately .82 lb. per square foot in the $\frac{1}{2}$ " thickness, .86 lb. per square foot in the $\frac{3}{4}$ " thickness, and 1.37 lbs. per square foot in the 1" thickness. (See Technical Data Below.)

Paintability and Maintenance

Perforated AUDITONE can be repeatedly brush or spray painted following normal paint procedures with oil, resin emulsion, casein, calcimine or any of the commercial types of paint without loss of sound absorption at 512 cycles per second or in the Noise Reduction Coefficient. Perforated AUDITONE can be cleaned with putty or paste type wallpaper cleaner.



Fire Resistance

Combustible.

Heat Conductivity

Perforated AUDITONE has a low thermal conductivity ("k" factor = .38).

Resistance to Soiling and Breathing

The smooth, painted finish of Perforated AUDITONE wood fiber acoustical tile resists soiling; and the tongue and groove edge type prevents objectionable air travel through the joints when used on suspended nailing strips.

Cost

Lower in cost than ACOUSTONE.

Limitations of Use

Perforated AUDITONE should not be used below wainscot height or where it will be subjected to severe impact or abrasion. It is not recommended in dish-washing rooms, or where it will be exposed to steam or constant high humidity.

PERFORATED AUDITONE TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS

Acoustical Materials Association

Thickness	Mounting	Coefficients						Noise Red. Coef.	Wt. (lbs.) Per Sq. Ft.
		128	256	512	1024	2048	4096		
1"	1	.15	.29	.80	.87	.83	.72	.70	1.37
1"	2	.26	.64	.59	.77	.78	.72	.70	1.46
$\frac{3}{4}$ "	1	.18	.24	.74	.83	.69	.83	.65	.86
$\frac{3}{4}$ "	2	.20	.60	.54	.76	.68	.70	.65	.87
$\frac{1}{2}$ "	1	.11	.24	.55	.64	.67	.68	.55	.82
$\frac{1}{2}$ "	2	.17	.51	.52	.62	.68	.68	.60	.77

Tile tested were painted with a full finish coat of paint. Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings. Mounting No. 2—Nailed to wood strips.

LIGHT REFLECTION—

Perforated AUDITONE, white, 79%. Tests by official A.M.A. Laboratory.

HEAT CONDUCTIVITY:

k = .38

FIRE RATING

Combustible

DESIGN DATA

UNITS	PERFORATED	SIZE	CENTER CROSS-SCORED
T & G	Yes	($\frac{1}{2}$ " $\frac{3}{4}$ " or 1") x 12" x 24"	Yes
Field	Yes	($\frac{1}{2}$ " $\frac{3}{4}$ " or 1") x 12" x 12"	No
Edge	No	($\frac{1}{2}$ " $\frac{3}{4}$ " or 1") x 12" x 24"	Yes
Butt-	Yes	($\frac{1}{2}$ " $\frac{3}{4}$ " or 1") x 12" x 12"	No
Bevel	No	($\frac{1}{2}$ " $\frac{3}{4}$ " or 1") x 12" x 12"	No

*Trademark Reg. U. S. Pat. Off.

SLOTTED AUDITONE ACOUSTICAL TILE

DESCRIPTION

Slotted AUDITONE wood fiber acoustical tile is a slotted wood fiber tile designed to give maximum acoustical efficiency and strength and an unobtrusive, efficient, functional appearance. Each unit is finish-painted at the factory and is available accurately formed, with beveled or tongue and groove edges.

SIZES— $\frac{3}{4}$ " or 1" by 12" x 12" or 12" x 24". (See Technical Data Below.) The 12" x 24" tongue and groove units are scored and slotted to represent two 12" x 12" units with the slots parallel to the long edges.

FUNCTION AND UTILITY

Sound Absorption—Slotted AUDITONE is made in two thicknesses with a Noise Reduction Coefficient of .65 and .70 and absorptions at 512 cycles per second of .72 and .78 respectively. (See Technical Data below.)

Edge Treatment—Slotted AUDITONE is made with butt bevel edges for cementing to proper bases without supplementary nailing; supplied with tongue and groove edges for blind nailing directly to joists, studs or nailing strips. The tongue and groove maintains level joints and a smooth appearance. Tongue and groove Slotted AUDITONE is not recommended for application with adhesive. (See Technical Data below.)

Paint and Color—Finish-painted at the factory on face and bevels in high light reflecting white. (See Technical Data below.)

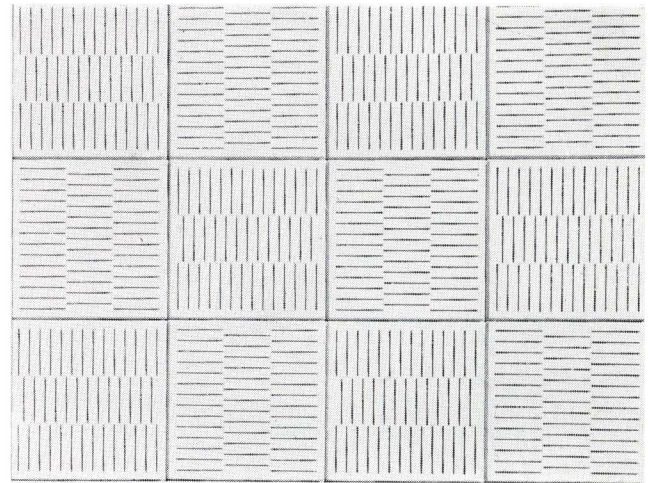
Weight—Slotted AUDITONE weighs approximately .84 lb. per square foot in the $\frac{3}{4}$ " thickness and approximately 1.19 lbs. per square foot for the 1" thickness. (See Technical Data below.)

Paintability and Maintenance

Slotted AUDITONE can be repeatedly brush or spray painted following normal paint procedures with oil, resin emulsion, casein, calcimine or any of the commercial types of paint without loss of sound absorption at 512 cycles per second or in the Noise Reduction Coefficient. Slotted AUDITONE can be cleaned with putty or paste type wallpaper cleaner.

Light Reflection

See Technical Data below.



Fire Resistance

Combustible.

Heat Conductivity

Slotted AUDITONE has a low thermal conductivity ("k" factor = .38)

Resistance to Soiling and Breathing

The smooth, painted finish of Slotted AUDITONE wood fiber acoustical tile resists soiling; and the tongue and groove edge type prevents objectionable air travel through the joints when used on suspended nailing strips.

Cost

Lower in cost than ACOUSTONE.

Limitations of Use

Slotted AUDITONE should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

It is not recommended in dish-washing rooms, or where it will be exposed to steam or constant high humidity.

SLOTTED AUDITONE TECHNICAL DATA SOUND ABSORPTION COEFFICIENTS

Acoustical Materials Association										Bureau of Standards Federal Specifications are Based on Bureau of Standards Tests													
Thick- ness	Mount- ing	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq.Ft.	Thick- ness	Mount- ing	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	SS-A-118a Feb. 12, 1948			
		128	256	512	1024	2048	4096					128	256	512	1024	2048	4096			512 Cycles	N. R.	Type	Class
1"	1	.18	.33	.78	.79	.80	.71	.70	1.19	1"	1	.24	.50	.73	.82	.75	.64	.70	1.14	105	5	II	C
1"	2	.32	.53	.60	.78	.83	.74	.70	1.19	1"	2	.19	.64	.63	.72	.78	.70	.70	1.18	107	5	II	C
¾"	1	.11	.25	.72	.84	.80	.80	.65	.84	¾"	1	.08	.30	.66	.80	.86	.75	.65	.79	106	6	II	C
¾"	2	.15	.48	.58	.81	.82	.78	.65	.84	¾"	2	.16	.64	.52	.60	.72	.77	.60	.97	109	7	II	C

Tile tested were painted with a full finish coat of paint. Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings. Mounting No. 2—Nailed to wood strips.

LIGHT REFLECTION:

Slotted AUDITONE White 78%
Tests by Official A.M.A. Laboratory

HEAT CONDUCTIVITY:

k = .38

FIRE RATING

Combustible

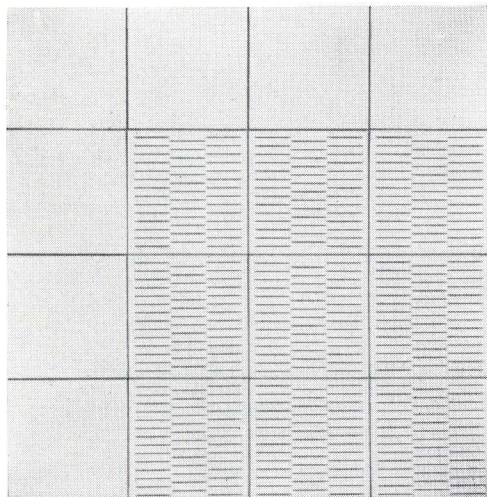
DESIGN DATA

UNITS	SLOTTED	SIZE	CENTER CROSS-SCORED
T&G Edge	Field	($\frac{3}{4}$ " or 1") x 12" x 24"	Yes
	Field Fillers	($\frac{3}{4}$ " or 1") x 12" x 12"	No
	Borders	($\frac{3}{4}$ " or 1") x 12" x 24"	Yes
Butt- Bevel	Field	($\frac{3}{4}$ " or 1") x 12" x 12"	No
	Borders	($\frac{3}{4}$ " or 1") x 12" x 12"	No

SLOTTED AUDITONE ACOUSTICAL TILE

Modern Slotted AUDITONE offers designers almost unlimited scope in ceiling appearance. Below are shown a few suggested patterns.

In addition to high sound absorption, the designs possible with Slotted Auditone can achieve widening, narrowing or directional effects.

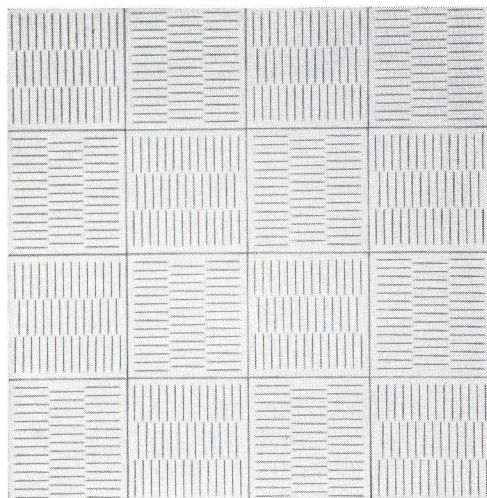


Square Design

**Using T & G
or Butt Bevel
Tile**

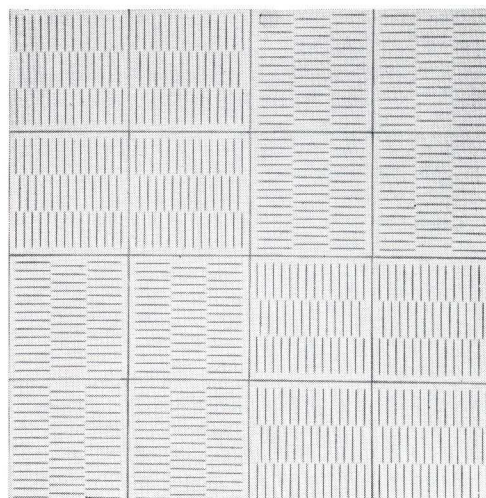


Ashlar Design

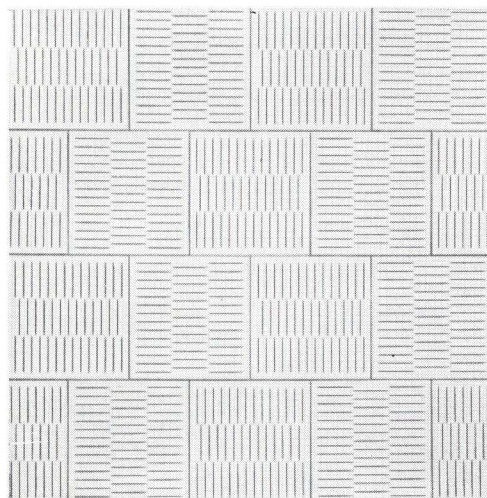


12"x12" Checkerboard Design

**Using Butt
Bevel Tile**

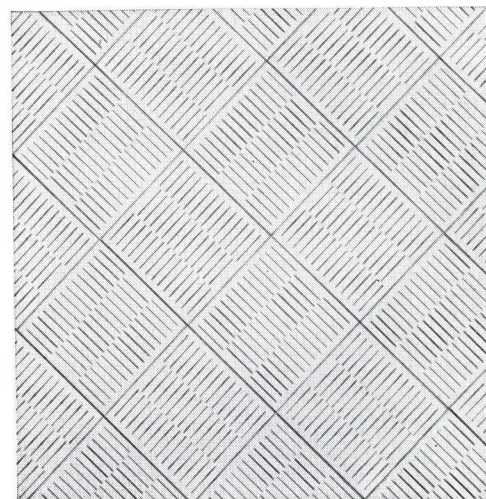


24"x24" Checkerboard Design



Swedish Modern Design

**Using Butt
Bevel Tile**



Diagonal Design

AUDITONE ACOUSTICAL TILE

INSTALLATION METHODS

AUDITONE is installed by approved USG acoustical contractors by one of two methods:

1. Application with adhesive (Butt Bevel Type only with or without nailing).
2. Blind nailing, screwing or stapling directly to wood strips, studs, joists, or gypsum board.

ADHESIVE APPLICATION

See architectural specifications below for amount and type of adhesive recommended.

Size and Type of Units

Should not exceed 12" x 12"; use butt bevel type only.

Bases for Adhesive Application of AUDITONE

Refer to "Bases for Adhesive Application of ACOUSTONE" page 6.

Patterns for Slotted AUDITONE

A variety of ceiling and wall patterns may be obtained by turning the tile to change the direction of slots on adjacent units or groups of units. Diagonal or square patterns with or without plain borders may be used. (Note page 19.)

APPLICATION NAILING, SCREWING OR STAPLING

Size and Type of Units

12" x 24" Tongue and Groove units only are used except for 12" x 12" field filler units adjacent to border.

Bases for Nailing, Screwing or Stapling

Tongue and Groove Slotted AUDITONE 12" x 24" may be nailed or screwed to supports spaced not to exceed 16" on center for square pattern and 12" on center for diagonal pattern. Tongue and Groove Perforated AUDITONE 12" x 24" may be either nailed or screwed to wood supports or may be stapled ($\frac{1}{2}$ " and $\frac{3}{4}$ " thickness only) to wood supports, not to exceed 16" on center for the square pattern or 12" on center for the diagonal pattern.

ARCHITECTURAL SPECIFICATIONS FOR AUDITONE

CEMENTED INSTALLATIONS

(Phrases in parentheses are explanatory.)

1. SCOPE. (List and locate all areas to receive acoustical treatment.)

2. Materials. Acoustical material shall be slotted AUDITONE ($\frac{3}{4}$ " or 1") or perforated AUDITONE ($\frac{1}{2}$ ", $\frac{3}{4}$ " or 1") manufactured by the United States Gypsum Company; and shall be finish-painted on the exposed surface and bevels; with a light reflection coefficient averaging not less than 78% as tested by A.M.A. Laboratories; capable of being brush-painted repeatedly with oil paints without loss of sound absorption at 512 frequency or Noise Reduction Coefficient. The (Noise Reduction Coefficient) (sound absorption coefficient at 512 cps) as tested by A.M.A. shall not be less than (choose value from sound absorption table on page 18).

Units shall be 12" x 12" butt bevelled.

The adhesive shall be (Refer to ACOUSTONE Specification Page 7).

3. Installation. (Refer to page 7 except eliminate any reference to splines and spline alignment.)

NAILED INSTALLATIONS

Note: Use paragraphs 1 and 2, from above specifications except materials shall be T&G AUDITONE 12" x 24".

1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The

Size of nailing strips	Maximum space between supports
1" x 2"	24"
1" x 3"	36"
2" x 2"	42"

Where a suspended ceiling is required, a double grillage is recommended using as main members (2" x 2") (2" x 3") or (2" x 4") which should be cross-furred with wood nailing strips spaced as shown in the above table. Steel channels ($1\frac{1}{2}$ " or 2") may be used in lieu of the main wood members to which wood nailing strips may be wired. Nailing strips (2" x 2") or (2" x 3") will successfully span 48" if a 1" x 2" stiffener strip is nailed to them midway between and parallel to the 48" supports.

AUDITONE SCREWED TO GYPSUM BOARD:

Use only 12"x24" T & G Slotted or any type Perforated AUDITONE. (See drawing Page 21.)

Where an incombustible backing is desired, AUDITONE may be screwed to SHEETROCK or USG Sheathing which has been either mechanically suspended or nailed directly to wood furring strips.

When mechanical suspension of gypsum board is desired, the Pomeroy System listed in Sweet's File may be used with $\frac{1}{2}$ " SHEETROCK or $\frac{1}{2}$ "x2'-0"x8'-0" USG Sheathing. If it is desired to nail gypsum board to wood furring strips, $\frac{3}{8}$ " or $\frac{1}{2}$ " gypsum board can be used, if furring strips are not over 16" o.c. If furring strips are between 16" and not over 24" o.c., $\frac{1}{2}$ " gypsum board should be used.

Patterns for Slotted AUDITONE

Patterns are limited by the requirement that all slots must be parallel when installing T & G Slotted AUDITONE. Tile may be installed perpendicular to wood supports, or diagonally—see above.

units shall be installed by blind nailing, screwing or stapling (see above) through the tongue to (wood joists, studs, furring strips, or suitable nailing surface), spaced not to exceed 16" on centers as specified and furnished in place under section "Carpentry." (Wood grounds shall be installed where necessary to furnish a satisfactory nailing base for border acoustical units at their intersection with walls or other abutting surfaces.) (Reference should be made under "Carpentry" as follows: "Joists or studs or furring strips shall present a suitable level surface to receive acoustical treatment without shimming or additional furring by the acoustical contractor".) Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work.

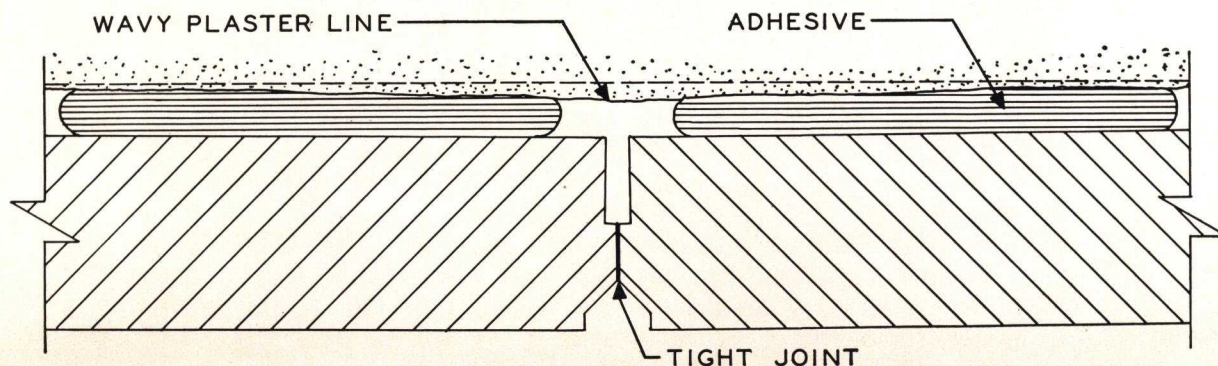
AUDITONE SCREWED TO GYPSUM BOARD:

NOTE: Use paragraphs 1 and 2, from the specifications under cemented installations except material shall be T & G Slotted AUDITONE 12"x24" or any type edge or size of Perforated AUDITONE.

1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The tile shall be applied by screwing (see above) through the tongue of the Slotted AUDITONE, or the shallow holes of Perforated AUDITONE, to gypsum board (either mechanically suspended or nailed to wood furring strips). See above paragraph on mechanical systems and spacing of furring strips.

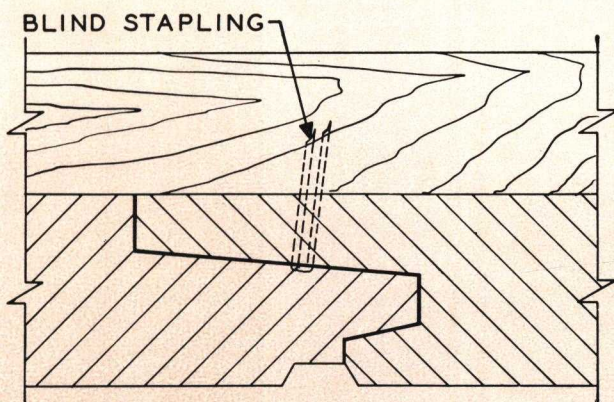
AUDITONE ACOUSTICAL TILE

INSTALLATION DETAILS



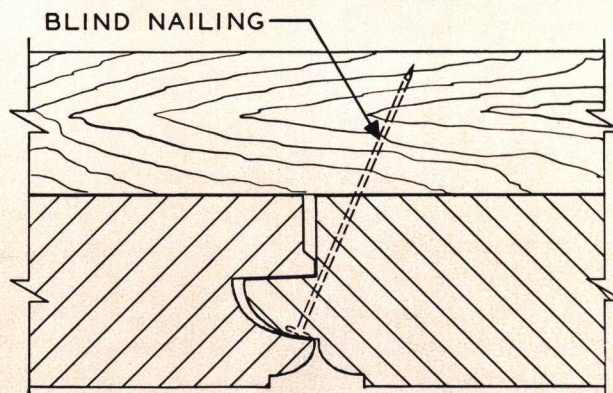
BUTT BEVEL TYPE

FOR ADHESIVE
APPLICATION OF SLOTTED OR PERFORATED AUDITONE



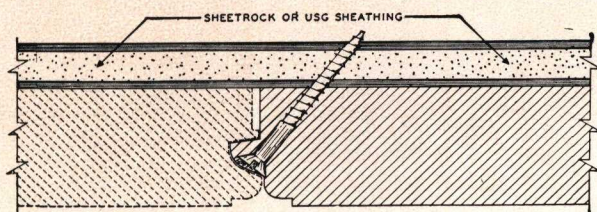
"T" & "G" TYPE

FOR NAILING OR STAPLING
APPLICATION OF PERFORATED AUDITONE

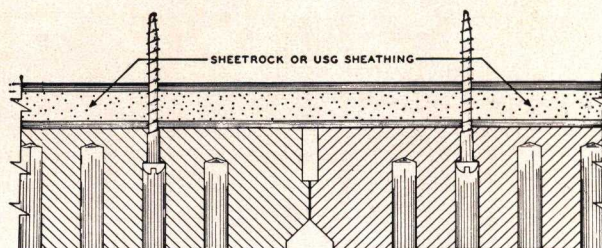


"T" & "G" TYPE

FOR NAILING
APPLICATION OF SLOTTED AUDITONE



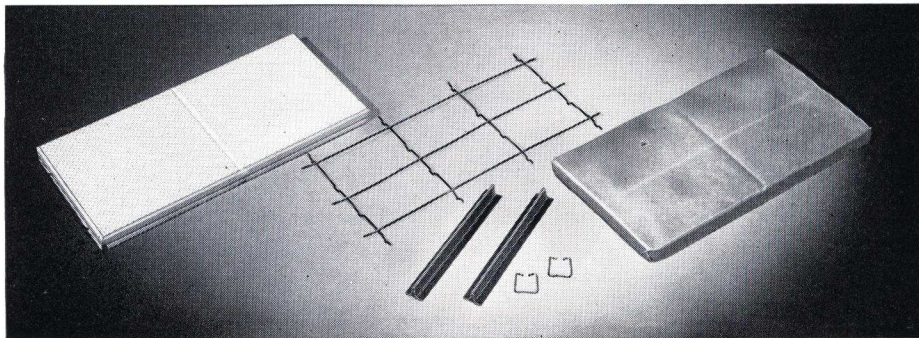
T & G SLOTTED AUDITONE
ATTACHED TO GYPSUM BOARD WITH WOOD SCREWS



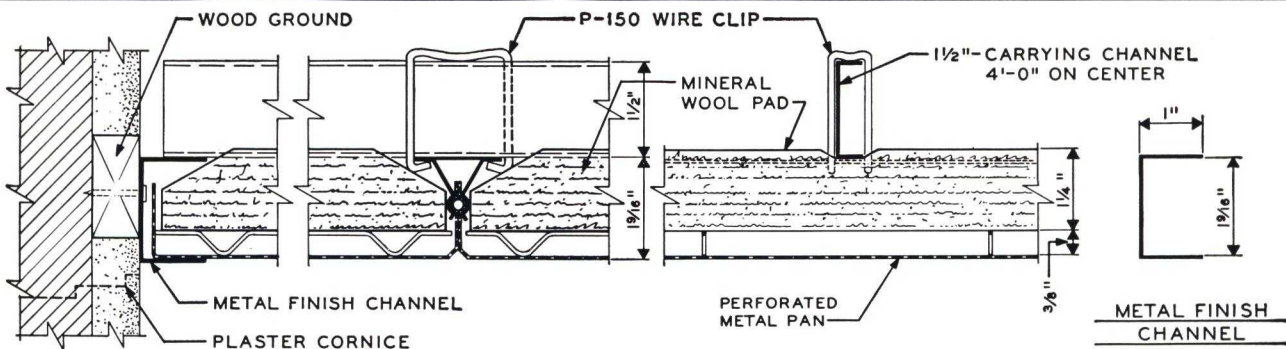
PERFORATED AUDITONE
ATTACHED TO GYPSUM BOARD WITH WOOD SCREWS

PERFATONE* ACOUSTICAL UNITS

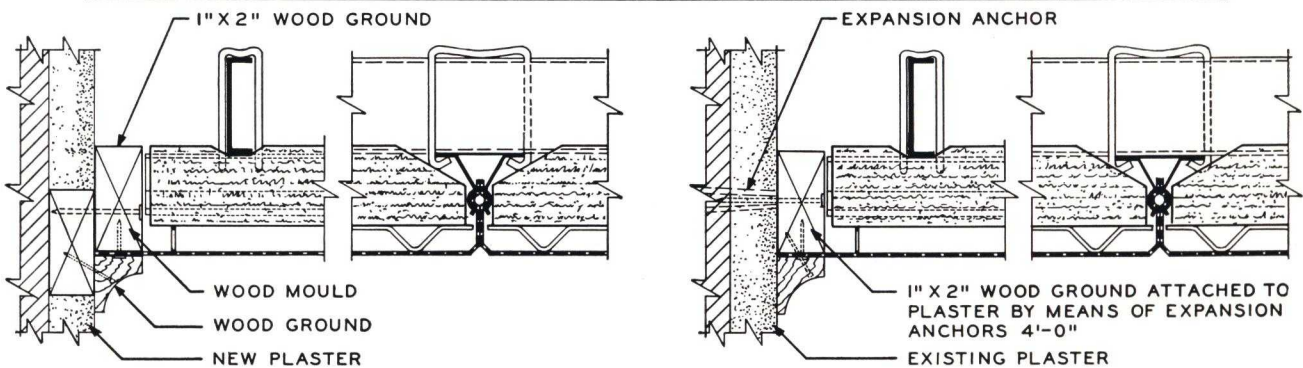
PERFATONE DETAILS



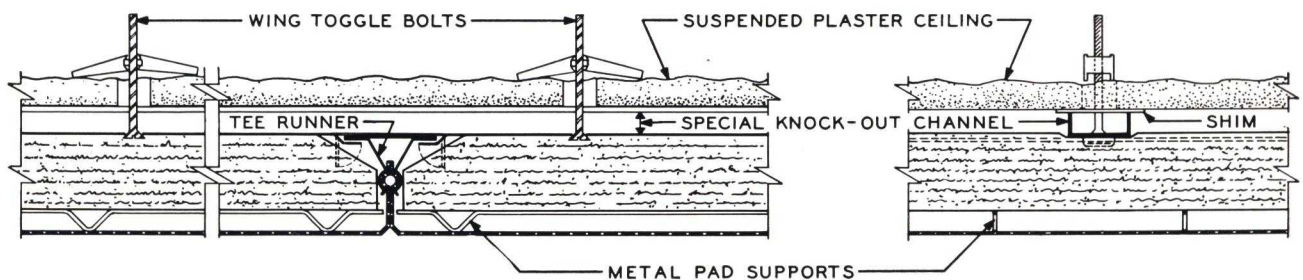
12" x 24" UNITS, CENTER-SCORED TO SIMULATE 12" x 12" UNITS; WIRE GRID SPACER TO SUPPORT MINERAL WOOL PAD; TEE RUNNERS; P-150 CLIPS.



DETAIL SHOWING METAL FINISHING CHANNEL AT WALL



DETAIL SHOWING ATTACHMENT TO NEW AND EXISTING PLASTERED WALLS



SECTIONS SHOWING DIRECT APPLICATION OF PERFATONE CONSTRUCTION USING SPECIAL KNOCK-OUT CHANNELS TO HOLD TEE RUNNERS

PERFATONE* ACOUSTICAL UNITS

DESCRIPTION—PERFATONE acoustical construction consists of perforated 26 ga. zinc-coated, enameled steel units 12"x24" centerscored to simulate 12"x12" units. Enclosed within the metal units are mineral wool sound absorbent pads supported on galvanized wire mesh pad supports which provide an air space between the metal facing and the pads.

PERFATONE units are also available unperforated to be used as border tile or for unusual decorative effects.

FUNCTION AND UTILITY—PERFATONE has high sound absorption and is incombustible, washable and paintable.

HIGH SOUND ABSORPTION—PERFATONE has high absorption and an absorption curve which is unusually flat at the significant pitches.

INCOMBUSTIBLE—The metal units and the mineral wool pads are incombustible. The pads are wrapped in flame-proofed paper.

HIGH LIGHT REFLECTION—PERFATONE has a white baked enamel finish with a light reflection of 76%.

LIMITATIONS OF USE—In areas of high humidity or where moisture might impinge against the acoustical surface, aluminum pans with galvanized fittings or a different architectural design should be considered.

SOUND ABSORPTION COEFFICIENTS									
Acoustical Materials Association									
Mounting	Thickness	Coefficients						Noise Red. Coef.	Wt.(Lbs.) Per Sq. Ft.
		128	256	512	1024	2048	4096		
3	1 1/4"	.30	.57	.98	.98	.77	.63	.85	1.24
Pads were tested in perforated enameled metal pans with pad supports.									
Mounting No. 3—Attached to metal supports applied to 1"x3" wood furring.									
Light Reflection — White 76% Fire Resistance — Incombustible									
Authority: Bureau of Standards (LC-715, January 1943)									
Tests by official A M A Laboratory.									

OTHER USG SOUND CONTROL MATERIALS

PERFORATED ASBESTOS BOARD—An incombustible acoustical construction consisting of perforated 3/16" asbestos board covering rock wool pads or blankets. The perforated facing is attached with wood screws or by other means to furring strips. This construction is commonly used in spaces subject to high humidity, impact or abrasion, and in radio studios. It is in a higher price

ARCHITECTURAL SPECIFICATIONS FOR PERFATONE

(Phrases in parentheses are explanatory)

1. Scope. (List and locate all areas to receive acoustical treatment.)

2. Materials. Acoustical material shall be USG PERFATONE, perforated 26 ga. zinc coated steel units, 12"x24", centerscored to simulate 12"x12" units, the edges of which are beveled and returned vertically to be held firmly in place on the 12" sides by special tee runners. The perforated metal units shall contain mineral wool absorbent pads held slightly away from the perforated metal surface by galvanized wire mesh pad supports. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proofed membrane.

The perforated metal tile shall have a prime coat of baked enamel on the back side; and on the face side, a prime coat and a finish coat of baked enamel.

3. Installation. The installation shall be made by an applicator approved by USG.

A. Suspended ceiling construction. To a standard 1 1/2" channel grillage furnished by others the acoustical contractor shall fasten the special tee runners spacing them 24" on centers to hold the perforated metal units. Perforated metal units, pad supports, and absorbent pads shall be carefully assembled and pressed into position in the special tee runner. All edges shall be kept in alignment, and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by the acoustical contractor (or by others) at the junction of the PERFATONE ceiling with the walls and columns. Care shall be taken in cutting and fitting the units around all openings.

B. Plastered ceiling construction. The same as in "A" except that the special knockout channel spaced 48" o.c. shall be attached to the present ceiling by means of suitable clips or wires and brought to a level surface.

range than ACOUSTONE "F" or AUDITONE.

USG SOUND INSULATION—For insulating rooms against extraneous noises. This special USG construction employs patented resilient floor chairs, and wall and ceiling resilient clips to support room surfaces and furnish an effective barrier against sound travel.

*Trademarks Reg. U. S. Pat. Off.

ACOUSTICAL SERVICE

Installation of acoustical tile is by United States Gypsum Company approved Acoustical Contractors. Upon request, the United States Gypsum Company, or its authorized acoustical contractors, will make analyses and recommendations, without obligation, on sound control problems. A complete line of acoustical materials is available.

USG ACOUSTICAL CONTRACTORS

- ALABAMA**, Birmingham
Shook & Fletcher Insulation Co., 2915 10th Ave. No.
- ALABAMA**, Mobile
Stokes Interiors of the Gulf Coast, 901 So. Washington St.
- ARIZONA**, Phoenix
R. E. Warren Sales Co., 1211 E. McDowell Rd.
- ARKANSAS**, Fort Smith
Harry G. Barr Co., 424 Garrison Ave.
- ARKANSAS**, Little Rock
Nevil C. Withrow Co., Pyramid Bldg.
- CALIFORNIA**, Los Angeles
R. E. Howard Co., 6025 So. Manhattan Pl.
- CALIFORNIA**, San Francisco
F. K. Pinney, Inc., 636 Clay St.
- COLORADO**, Denver
Construction Specialties Co., 2625 Walnut St.
- CONNECTICUT**, E. Hartford
The Acoustical Materials Corp., 46 Judson Ave.
- CONNECTICUT**, Norwalk
The Acoustical Materials Corp., 42 Commerce St.
- DISTRICT OF COLUMBIA**, Washington
(See Alexandria, Virginia)
- FLORIDA**, Miami
Ray-Hof Agencies, 3004 N. W. North River Drive
- FLORIDA**, Jacksonville
Ray-Hof Agencies, Inc., 1034 Hendricks
- FLORIDA**, Orlando
Ray-Hof Agencies, Inc., 1338 W. Church St.
- GEORGIA**, Atlanta
Lewis & Co., 495 Fourth St. N. W.
- ILLINOIS**, Chicago
Anning-Johnson Co., Inc., 1514 W. Van Buren St.
- ILLINOIS**, E. St. Louis
Blazier Huntley Co., 2533 Natalie St.
- ILLINOIS**, Moline
Builders Sales & Service Co., 1516 Fourth Ave.
- ILLINOIS**, Peoria
Watson Engineering Co., 507 First National Bank Bldg.
- ILLINOIS**, Rockford
Acoustical Engineering Co., 614 Shaw St.
- INDIANA**, Indianapolis
Brown-Anning-Johnson Co., 1720 Alvord St.
- IOWA**, Cedar Rapids
O. W. Latimer Co., Security Bldg.
- IOWA**, Davenport
(See Moline, Illinois)
- IOWA**, Des Moines
Anning-Johnson Co., Inc., 914 W. Grand Ave.
- KENTUCKY**, Louisville
Pochel-Chowing Co., Inc., 1404 W. Market St.
- LOUISIANA**, Baton Rouge
Pioneer Contract & Supply Co., 2510 Government St.
- LOUISIANA**, New Orleans
B & D Floor Co., 1402 S. Jefferson Davis Parkway
- MASSACHUSETTS**, Auburndale
Port Products, Inc., 253 Auburn St.
- MASSACHUSETTS**, Boston
See Auburndale, Massachusetts
- MASSACHUSETTS**, Cambridge
W. T. Roberts Construction Co., Third & Rogers Sts.
- MICHIGAN**, Detroit
The Nichols Co., 510 Michigan Bldg.
- MICHIGAN**, Grand Rapids
Harold R. Sobie Co., 959 Cherry St., S. E.
- MINNESOTA**, Minneapolis
Hauenstein & Burmeister, Inc., 614 Third Ave., South
- MISSISSIPPI**, Jackson
Stokes Interiors, Inc., 126 S. Farish St.
- MISSOURI**, Kansas City
The Stokes Company, 2035 Washington St.
- MISSOURI**, St. Louis
Hamilton Co., 4239 Lindell Blvd.
- MISSOURI**, St. Louis
Atkinson-Lindberg Co., 3926 Lindell Blvd.
- NEBRASKA**, Omaha
Porter-Trustin Co., 910 S. Saddle Creek Rd.
- NEW JERSEY**, East Orange
Woolsulate Corporation, 21 S. Sixteenth St.
- NEW MEXICO**, Albuquerque
Welch-Erwin, Inc., 1010 No. First St.
- NEW YORK**, Buffalo
Davis-Fetch & Co., Inc., 236 Scajaquada St.
- NEW YORK**, New York
Waldvogel Bros., Inc., 17 E. 42nd St.
- NEW YORK**, Rochester
S. A. Spencer, 135 Spring St.
- NEW YORK**, Syracuse
A. P. Madden Co., 675 Oswego Blvd.
- NORTH CAROLINA**, Greensboro
Bonitz Insulation Co., 411 Prescott St.
- OHIO**, Cincinnati
R. E. Kramig & Co., 222 East 14th St.
- OHIO**, Cleveland
H. A. Erf Acoustical Co., 3863 Carnegie Ave.
- OKLAHOMA**, Oklahoma City
Denman Floor Co., 3023 N. Oklahoma St.
- OKLAHOMA**, Tulsa
Towner & Co., 7902 E. 11th St.
- OREGON**, Portland
Emert and Zednik Co., 3520 N. E. 57th St.
- PENNSYLVANIA**, Philadelphia
W. M. Moyer Co., 1616 Walnut St.
- PENNSYLVANIA**, Pittsburgh
Standard Floor Co., 185 41st St.
- SOUTH DAKOTA**, Sioux Falls
Builders Supply Co., 113 N. Main St.
- TENNESSEE**, Chattanooga
The Currin Co., 1208 Carter St.
- TENNESSEE**, Memphis
R. Cluck Floor Co., 825 Jefferson Ave.
- TEXAS**, Dallas
Macatee, Inc., 4703 Bengal St.
- TEXAS**, El Paso
Welch-Erwin, Inc., 215 Popular St.
- TEXAS**, Fort Worth
Builders Material Co., Inc., 2307 Montgomery St.
- TEXAS**, Fort Worth
Gunn & Briggs Co., 2111 Montgomery St.
- TEXAS**, Houston
Macatee, Inc., 2209 San Jacinto St.
- TEXAS**, San Antonio
General Supply Co., 227 S. Salado St.
- UTAH**, Salt Lake City
Elias Morris & Sons Co., 250 E. South Temple St.
- VIRGINIA**, Alexandria
Anning-Johnson Co., Inc., 2414 Oakville St.
- VIRGINIA**, Richmond
W. Morton Northen & Co., Inc.,
608 North Seventeenth St.
- WASHINGTON**, Seattle
Pioneer Sand & Gravel Co., 901 Fairview Ave., North
- WASHINGTON**, Spokane
Mansur Materials Co., E. 210 Riverside Ave.
- WEST VIRGINIA**, Huntington
Frank B. Groves, 528 W. 11th Ave.
- WISCONSIN**, Madison
Home Insulation of Madison, Inc.,
1440 E. Washington Ave.
- WISCONSIN**, Milwaukee
Insulation Service, Inc., 1109 N. 108th St.



UNITED STATES GYPSUM COMPANY

