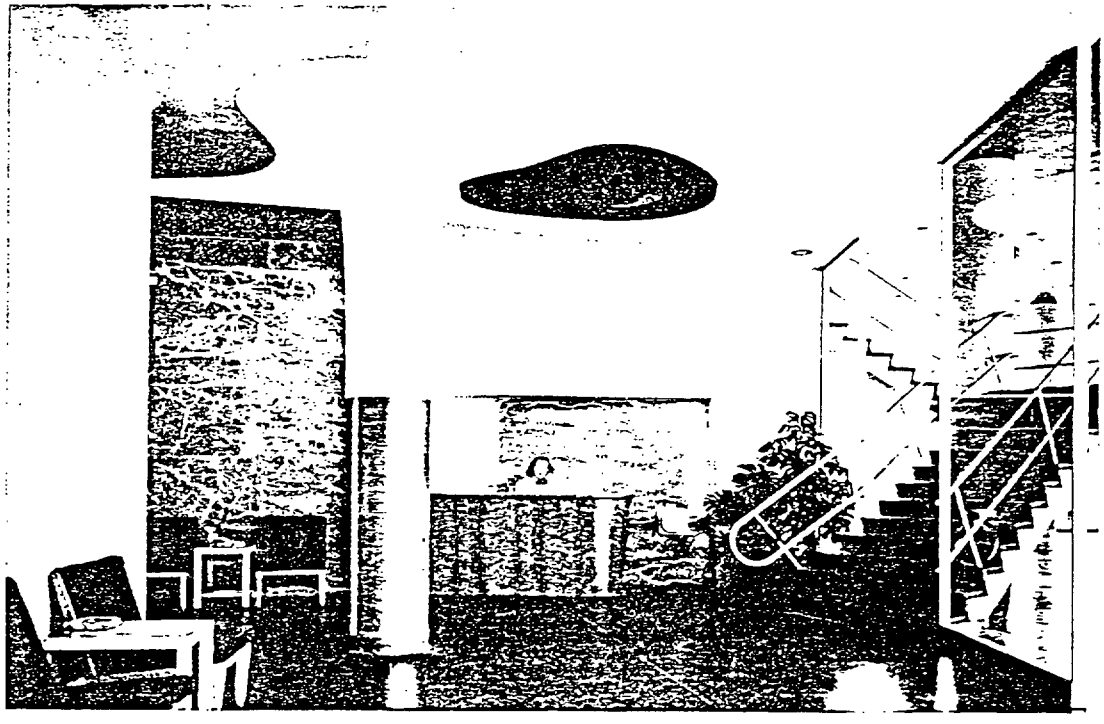
PLAINTIFF'S EXHIBIT

USG-1694

AIA File 39-B

TECHNICAL INFORMATION

ACOUSTICAL PLASTERS



UNITED STATES GYPSUM

1959

BB016 1683

AIA File 39-B

ACOUSTICAL PLASTERS

DESCRIPTION

United States Gypsum Company manufactures three acoustical plasters designed to satisfy specific noise reduction requirements. They are easily applied, provide effective sound conditioning, and being basically mineral, are incombustible.

FUNCTION AND UTILITY

Noise Reduction Coefficients range from .55 to .60. Low in initial cost, they give more sound absorption per dollar than most other commonly used acoustical materials.

For Any Architectural Design their medium to high light reflection properties, combined with a variety of finishes, provide excellent acoustical treatment.

Fire Resistance: In a standard fire test, a floor-ceiling construction consisting of a concrete slab on a cellular steel floor with suspended metal lath ceiling and ⅝" gypsum-perlite basecoat (100:2; 100:3) with ½" Acoustical Plaster finish, endured in excess of 5 hours, easily providing a 4 hour rating.

TECHNICAL DATA

ACOUSTICAL PLASTER	FINISH	THICKNESS AND BASE	LIGHT REFLECTANCE PERCENT	HEAT INSULATION "K" FACTOR
SABINITE	Trowel	One half inch applied to a Gypsum Plaster Basecoat on Metal Lath.	.53	.59
	Float		.51	
HI-LITE	Stippled		.80	.50
	Stipple-Perforated		.77	
AUDICOTE	Darbied Machine Textured		Satin White .65	.50
			Special White .70	.50

Light reflectance from tests at a recognized independent laboratory.
Heat insulation data from tests at USG laboratory.

ACOUSTICAL PLASTER	FINISH	SOUND ABSORPTION FREQUENCY 125	250	500	1000	2000	4000	NRC
SABINITE	Trowel	.54	.27	.47	.76	.99	.88	.60
	Float	.49	.32	.42	.66	.83	.81	.55
HI-LITE	Stippled	.41	.26	.59	.78	.84	.65	.60
	Stipple-Perforated	.20	.24	.50	.76	.83	.76	.60
AUDICOTE	Darbied Machine Textured	.64	.29	.55	.83	.80	.80	.60
		.59	.28	.51	.73	.77	.77	.55

Base—One half inch applied to a Gypsum Plaster Basecoat on Metal Lath.
Sound absorption from tests at a recognized independent laboratory.

HI-LITE* ACOUSTICAL PLASTER

DESCRIPTION

HI-LITE Acoustical Plaster may be applied over properly prepared gypsum plaster or portland cement-lime plaster basecoats. Formulated for hand application, it develops its maximum acoustical efficiency through mechanical opening of the surface, and therefore must be stippled or stipple-perforated. Requires the addition of water only.

Colors—Available in white only.

FUNCTION AND UTILITY

Sound Absorption—Noise reduction coefficient of .60 when stippled or stipple-perforated. (See table for individual frequencies.)

High Light Reflection—Light reflection is in excess of .75 for both stippled and stipple-perforated finish. (See table.)

Maintenance—HI-LITE Acoustical Plaster may be cleaned with a vacuum cleaner using hose and brush attachments.

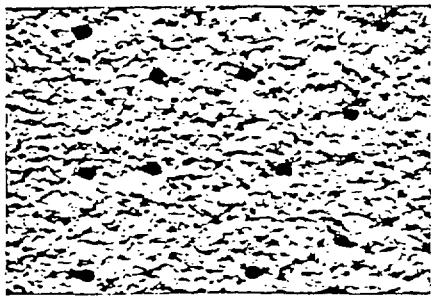
Paintable—May be redecorated with TEXOLITE* paint (Standard or Imperial). Tests by a nationally recognized laboratory showed HI-LITE Acoustical Plaster with a stipple-perforated finish had no loss in the noise Reduction Coefficient after 4 spray coats of Imperial TEXOLITE paint were applied.

Adaptability—HI-LITE, when applied to a portland cement-lime basecoat, may be used in areas of moderately high humidity such as ceilings over swimming pools.

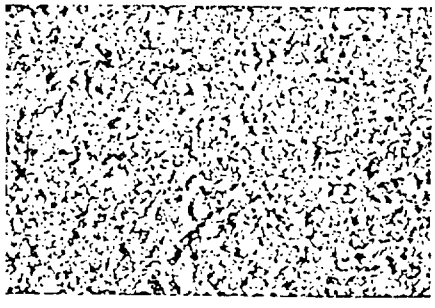
LIMITATIONS OF USE

1. HI-LITE must be machine mixed to develop proper density.
2. Designed for use on ceilings or wall areas not subject to contact.
3. When perforated, a special perforator with rust resistant prongs should be used.
4. HI-LITE is not recommended for use over radiant heating panels, or for direct application to monolithic concrete.

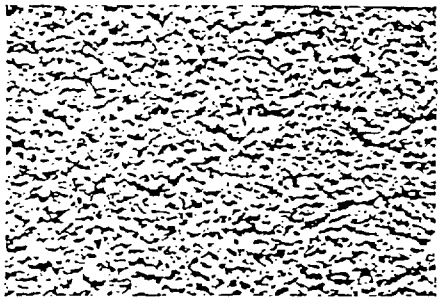
*T. M. Reg. U. S. Pat. Off.



HI-LITE Stipple-Perforated



AUDICOTE Machine-Textured Finish



SABINITE Trowel Finish

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AUDICOTE* ACOUSTICAL PLASTER

DESCRIPTION

AUDICOTE Acoustical Plaster may be applied over properly prepared gypsum plaster or portland cement-lime plaster basecoats, or direct to monolithic concrete. Although developed primarily for machine application it may also be applied by hand. In addition to a fine or medium machine textured finish, it may be stippled, stipple-perforated, floated or trowelled. AUDICOTE attains its hardness through drying, and develops its acoustical properties by fissuring. Requires the addition of water only. Particularly adaptable to large unbroken ceiling areas where machine application will result in a uniform textured finish.

Colors
Available in Satin White and Special White.

FUNCTION AND UTILITY

Sound Absorption—Noise Reduction Coefficient of .55 for machine textured finish; .60 for hand darbied finish. (See table for individual frequencies.)

Light Reflection
Either machine textured finish or hand applied finish has a light reflection of .65 for Satin White and .70 for Special White.

Paintable—Tests show no loss in Noise Reduction Coefficient after 2 spray coats of TEXOLITE (Standard or Imperial) applied to U.S.G. specification for painting acoustical plasters.

Maintenance—May be spray painted or refinished with a spray applied coat of AUDICOTE.

LIMITATIONS OF USE

1. AUDICOTE is designed for use on ceiling and wall areas not subject to contact.
2. While a rust inhibitor is used in Audicote, a full brown coat is necessary to help eliminate the possibility of rusting through of tie wires or exposed metal lath.
3. AUDICOTE is not recommended for use over radiant heating panels.

SABINITE* ACOUSTICAL PLASTER

DESCRIPTION

For application over a properly prepared gypsum basecoat. Formulated for hand application, it may be finished with trowel or float, and requires the addition of water only. Any good plaster craftsman can apply.

Colors—Available in Oyster White, Antique Ivory, Spanish Buff, Caenstone, and Colonial Cream.

FUNCTION AND UTILITY

Sound Absorption—Noise reduction coefficient of .60 with Trowel Finish; .55 for float finish. (See table for individual frequencies.)

Light Reflection—Laboratory tests of Oyster White indicate light reflection of .53 for Trowel Finish and .51 for Float Finish.

Maintenance—SABINITE trowel or float finish may be cleaned with a vacuum cleaner, using hose and brush attachment. SABINITE trowel finish may also be cleaned with a putty type wallpaper cleaner.

Painting—SABINITE may be redecorated with TEXOLITE* paint (Standard or Imperial). Apply according to U.S.G. specification for painting SABINITE. Tests show no loss in the noise reduction coefficient after two spray coats.

LIMITATIONS OF USE

1. Designed for use on ceilings and areas not subject to contact.
2. SABINITE Acoustical Plaster should not be used where exposed to excessive moisture, nor on exterior areas where exposed to the elements.
3. SABINITE is not recommended for use over radiant heating panels.

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

SPECIFICATIONS

The following short form specification may be used in the general plastering specifications.

GENERAL PROVISIONS
General provisions for plastering apply to acoustical plaster application.

SCOPE
As indicated on drawings, all walls and ceilings shall be finished as herein described.

MATERIALS
Acoustical plaster shall be (choose one)

1. SABINITE Acoustical Plaster (Trowel Finish) (Float Finish).
2. HI-LITE Acoustical Plaster (Stippled Finish) (Stipple-Perforated Finish).
3. AUDICOTE Acoustical Plaster (Machine Textured Finish) (Stipple Finish) (Trowel Finish) (Darbied Finish) as manufactured by the United States Gypsum Company. Color shall be as selected by the architect.

MIXING AND APPLICATION
Mixing and application of acoustical plaster and basecoat plaster shall be in strict accordance with the manufacturer's latest printed directions which are hereby made a part of this specification.

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MIXING AND APPLICATION

SABINITE ACOUSTICAL PLASTER—

Trowel or Float Finish

Mixing

Machine mixing recommended. Put 22 quarts clean water in mixer for each bag of SABINITE. Add SABINITE to water and mix until mortar weighs 15 to 18 lbs. net per 12-qt. pail (usually 3 to 5 minutes, depending on speed of mixer). For hand mixing, place SABINITE in one end of mixing box. For each bag of SABINITE add 23 qts. of clean water in other end. Hoe SABINITE into water. The mix will appear dry, but do not add more water. Mix until mortar weighs 15 to 18 lbs. net per 12-qt. pail (approximately 8–10 minutes per 2-bag batch).

Application

SABINITE shall be applied in 2 coats to a uniform total thickness of ½" over a basecoat of RED TOP* gypsum plaster. A full scratch and brown coat are required over metal lath, ROCKLATH* plaster base, and masonry bases (excluding monolithic concrete) to provide proper rigidity, strength, and a solid base for the acoustical plaster.

Apply the first coat of SABINITE ¼" thick by scratching in and doubling back over a set semi-green gypsum plaster basecoat that is level and cross raked. If basecoat is dry, spray lightly to reduce suction. Allow to set and partially dry (at least overnight) before applying finish coat.

Apply SABINITE finish coat to a thickness of ¼" scratching in and doubling back, over a set, partially dry first coat. Bring total thickness to ½". Leave surface uniformly level and free of trowel marks, working from wet edge. Finish areas in one operation to avoid joinings. Trowel Finish—after gloss leaves surface and surface is firm, trowel lightly to a uniform texture. *Do not use water during troweling.* Float Finish—float second coat 5 to 10 minutes after gloss has left surface and surface is firm. Use a shingle, cork, or carpet float. *Do not use water in floating.*

HI-LITE ACOUSTICAL PLASTER

Stipple or Stipple-Perforated Finish

Mixing

Machine Mixing Required: Use approximately 33 quarts of clean water per bag of plaster. Add HI-LITE Acoustical Plaster to clean water and mix until *MORTAR WEIGHS 15 TO 17 POUNDS NET PER 12-QUART PAIL.* (Approximately 10 to 15 minutes mixing time is required depending on speed of mixer.)

Do not retemper or mix one batch with another. Keep all tools and equipment clean. Mix no more than can be used in one hour.

Application

USG HI-LITE Acoustical Plaster shall be applied in two coats to a uniform thickness of ½". A full scratch and brown coat of gypsum plaster or portland cement plaster that has been cross-raked is required over metal lath, gypsum lath and masonry bases (except monolithic concrete) to provide proper rigidity, strength and a solid base for the acoustical plaster.

First Coat: Apply the first coat of HI-LITE Acoustical Plaster ⅜" thick, by scratching in firmly and immediately doubling back over a *set and dry, partially dry or semi-green* basecoat. Darby lightly to a level surface. Allow to set and dry fairly well (at least overnight) before applying finish coat.

Finish Coat: Apply the finish coat ⅛" thick, to a set and fairly dry HI-LITE first coat, scratching in and immediately doubling back, leaving surface free of trowel marks. Work from a wet edge to avoid joinings.

When surface gloss has disappeared or surface is crisp and hard enough to give clean perforations, stipple the surface with a rice root stippling brush to a uniform texture.

To obtain a stipple-perforated finish, perforate the surface not sooner than 30 minutes after stippling but before set (or when surface is hard enough to give clean perforations without tearing). Use perforator as furnished by the U.S. Gypsum Company. Perforations should number approximately 500 per square foot and should be at least 3/16" deep.

RED TOP AUDICOTE ACOUSTICAL PLASTER

Surface Preparation

Surfaces to receive AUDICOTE must be firm, clean, and free from oily film or water soluble materials.

Raw surfaces or edges of steel in contact with Audicote shall be galvanized or primed with rust inhibitive paint. Raw edges shall be similarly primed. In reinforced concrete slabs, ends of bar chairs shall be treated to prevent rusting and other raw steel in the exposed surfaces shall be held to a minimum. (See related inclusion of specifications for concrete.) For best results, base coats of gypsum plaster or portland cement plaster should be semi-green to dry.

Related inclusion (for concrete specifications):

Where AUDICOTE is specified to be applied direct to monolithic concrete, low reinforcing bar chair legs shall be galvanized with ends turned up and high reinforcing bar chair legs shall be dipped in rust inhibitive paint. Other raw steel in the exposed surface of the concrete shall be held to a minimum.

Mixing

Machine Mixing—Machine mixing is recommended. Add AUDICOTE to the water. Use approximately 55 quarts of clean water per bag for the first coat of acoustical plaster. For machine application of the finish coat more water will be required, 70 to 90 quarts, depending upon the type of machine used and the degree of texture desired. An increase in the amount of water used per bag will give a finer texture when machine applied. If hand application of the finish coat is required use approximately 55 quarts of water per bag for the finish coat. Each bag will cover 7 to 8 square yards ½" thick. Mix for a minimum of five minutes in the mixer to develop the proper consistency.

Hand Mixing—If hand mixing is required the material must be hoed sufficiently to develop even consistency free of humps.

Machine Application—The first coat of acoustical plaster should be applied to a thickness of ⅜". Level with a darby and point up with a trowel, if necessary, to provide a smooth and level base for the finish coat. Allow to dry before applying finish coat. Apply finish coat ⅛" thick.

Hand Application—Apply first coat of acoustical plaster by firmly scratching in ⅛" and immediately doubling back to full thickness of ⅜". Level with a darby to provide a smooth and level base for the finish coat. Allow to dry before proceeding with the finish coat. Apply finish coat by scratching in and immediately doubling back to ⅛" thickness. After finish coat has taken up sufficiently, it may be stippled, stipple-perforated, floated, darbied or trowelled to produce the desired finish.

Caution

Allow RED TOP AUDICOTE Acoustical Plaster to dry naturally, furnishing proper heat and ventilation in slow drying weather. Avoid fast or uneven drying which would result in excessive fissuring. Large fissures should be filled and leveled prior to application of the finish coat.

PAINTING ACOUSTICAL PLASTERS

Surface Preparation

Remove all loose dirt or dust by use of a vacuum cleaner with hose and brush attachment.

Paint: Should be water-thinned. TEXOLITE* (Standard or Imperial) is recommended. First coat—mix one part TEXOLITE paste to one part water by volume. Second coat if required—mix one part TEXOLITE paste to two parts water by volume.

Spray on with any gun with a medium fine spray. DeVilbiss spray gun, type MBD, with a No. 30 nozzle or equivalent is recommended. Use 30 to 40 lbs. pressure in the gun and 20 to 30 lbs. on the paint.

Hold nozzle 14 to 18 in. away from work. Use a slow, uniform motion. Cover surface in one pass. Do not pass over same area several times as this builds up paint unnecessarily.

Allow at least overnight drying between coats. If weather is extremely humid, allow additional drying as necessary.

NOTE: Brush painting is not recommended.

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