

GYPSUM ASSOCIATION SPECIFICATIONS

COVERING EXISTING INTERIOR WALLS AND CEILINGS WITH GYPSUMBOARD PRODUCTS

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GYPSUM ASSOCIATION

201 North Wells Street, Chicago, Illinois 60606
1800 N. Highland Ave., Hollywood, Calif. 90028

PLAINTIFF'S EXHIBIT

GP-638

SGP 0026737

SPECIFICATIONS FOR COVERING EXISTING INTERIOR WALLS AND CEILINGS WITH GYPSUMBOARD PRODUCTS

I. Introduction

This specification is intended to provide methods for covering interior wall and ceiling surfaces which have been decorated with lead-based paints. Prior to World War II lead-based paints were commonly used for interior decoration.

The purpose of covering these surfaces is to minimize the potential lead poisoning hazard to children who eat paint from wood trim, such as window sills, and paint peeling from walls and ceilings.

In addition to walls and ceilings, all lead-based paint on the following surfaces shall be removed or made inaccessible:

- a. All trim and moldings including base shoe, base, casings, chair rail, wainscot, doors, door jambs, window sills, sash and trim.
- b. All kitchen cabinets, pantry cabinets and shelving, fireplaces, sinks and bathtubs.
- c. All electrical cable, conduit, fixtures, wall plates, receptacles and switches.
- d. All exposed gas and water piping.
- e. Any other surfaces, such as floors.

If the paint on the above cannot be removed or covered, then these items shall be removed.

II. Covering Lead-Base Painted Surfaces.

Section II describes two methods of covering wall and ceiling surfaces, i.e., (1) direct attachment, and (2) furring attachment. Suspended ceiling systems are described in Section III.

Characteristics, properties or performance of materials or systems herein described are based on data obtained under controlled test conditions. The Gypsum Association makes no warranties or other representations as to their characteristics, properties or performance under any variation from such conditions in actual construction. Test condition details will be furnished by the Gypsum Association on request.

A. Material.

Any of the following gypsumboard products, with appropriate accessories, may be used for accomplishing the work described in this specification:

Board Type	Finish
1. Regular tapered edge or special bead resistant edge	Joints taped and finished
2. Regular bevel edged or square edged	Edges butted and painted or covered with battens and painted. (Board applied vertically)
3. Predecorated bevel edged or square edged	Edges butted or edges butted and covered with matching or contrasting batten (Board applied vertically)
4. Veneer plaster base	Edges butted and finished with tape and gypsum veneer plaster
5. Water resistant gypsum backing board	Edges and corners butted and treated to provide a water resistant base for wall tile in wet areas.
6. Gypsum lay-in ceiling panels	Solid (plain or predecorated)

1/4" thick gypsumboard is recommended only for direct application where the base wall is sound, without holes or void spaces, and is flat and level.

3/8" thick gypsumboard requires support not exceeding 16" o.c.

1/2" or 5/8" thick gypsumboard requires support not exceeding 24" o.c.

B. Preparation for Application — Direct Attachment.

1. When gypsumboard products are applied directly over existing walls, all loose plaster and wall-paper shall be removed. When wall surfaces are extremely uneven or unsound, it may be necessary to remove entire wall surfaces.

- 2 Void areas, resulting from removal of loose plaster, shall be shimmed with material of the same thickness as the plaster in order to provide uniform backing support to the gypsumboard. See Figure 1.

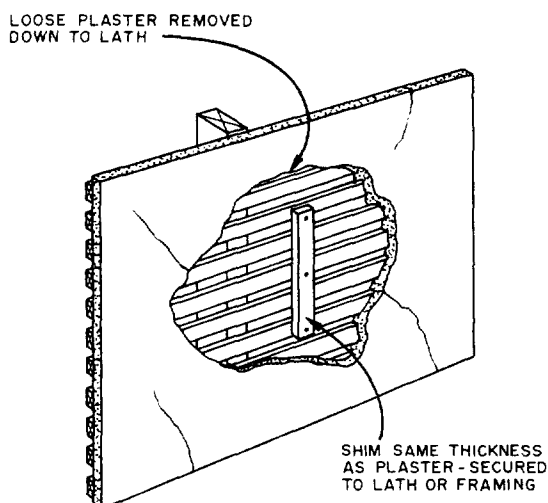


Figure 1 — Treatment of Large Voids in Plaster.

Note: To maintain fire resistive characteristics of walls between adjacent living units or public corridors, void areas shall be treated as follows:

- (1) When 3/8" thick gypsumboard is being used, voids not exceeding 16" shall be filled with plaster or other suitable noncombustible material.
 - (2) When voids exceed 16", 1/2" or 5/8" gypsumboard shall be used and shimmed as illustrated.
- 3 Minimum width of wood shims shall be 1-1/2". Minimum width of gypsumboard shims shall be 2". Care must be taken to make the strips equal in thickness to the surrounding plaster. Shims shall be applied to the exposed framing or wood lath with nails or screws spaced no more than 6" on center. See Figure 1.
- 4 Shims may also be secured to wood lath or masonry with adhesives or masonry nails. If the base is gypsum lath or metal lath, toggle bolts or other approved fasteners can be used.

C. Direct Attachment of Gypsumboard Products to Existing Walls and Ceilings.

Gypsumboard products used over the existing wall and ceiling surfaces shall be applied with mechanical fasteners, such as nails or screws into framing, or with adhesives in combination with nails or screws. See Figure 2.

1 Attachment by Nailing or Screws

Gypsum wallboard may be attached directly over sound wall and ceiling surfaces by nailing or power driven screw application. Framing members must be sound, rigid and aligned, and shall not exceed 16" o.c. for 3/8" thick board or 24"

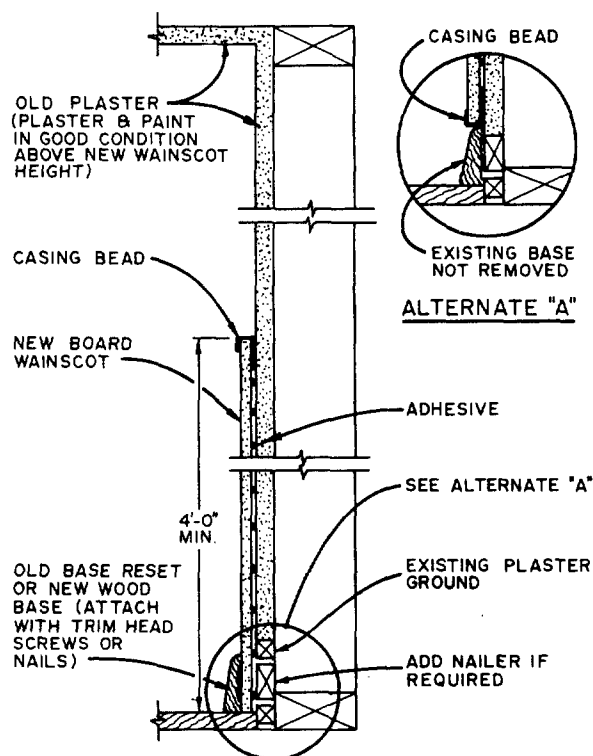


Figure 2 — Wainscot Detail, Direct Attachment Only.

Note: For furred attachment apply new gypsumboard to full wall height.

o.c. for 1/2" and 5/8" board. Drywall nails shall be of sufficient length to penetrate into framing 7/8" plus the thickness of the wallboard and plaster or shims. Power driven drywall screws must penetrate into framing at least 5/8". Fastener spacing shall be 8" o.c. maximum for walls and 7" o.c. maximum for ceilings and not less than 3/8" from board edges and ends.

2 Attachment Using Adhesives

a Testing for strength

When an adhesive is to be used, a test should be made to insure that bond to the wall surface will be adequate. Loose paint or wallpaper must be removed from the plaster so that the adhesive can be applied directly to a sound surface. Apply a single 3/8" by 3" long bead of drywall adhesive to an 8" square sample of gypsum wallboard and press the sample to the wall. Repeat this in several widely separated areas.

Allow sufficient setting time, according to the manufacturer's directions. Adhesive bond is tested by pulling the sample away from the wall. Bond is adequate if the gypsum wallboard paper surface is torn from the wallboard sample.

b. Application.

When it has been determined that bond strength is adequate, wallboard application can proceed as follows:

Board Product	Adhesive Nail-On Application	Modified Contact Adhesive Application
Regular tapered edge or special bead resistant edge	R-1	R-1
Water resistant gypsum backing board	R-1	3
Prefinished (vinyl faced)*	R-2	3
Prefinished (paper faced)*	R-2	R-2

KEY:

- R — 3/8" diameter drywall adhesive beads maximum 16" o.c. applied to back face of boards.
- 1 — Fasteners maximum 24" o.c. throughout (Type G or Type S drywall screws).
- 2 — Fasteners maximum 16" o.c. top and bottom edge (Type G or Type S drywall screws or nails to plates).
- 3 — Not recommended.
- * — Intended for walls only, but can be applied to ceilings, if desired.

NOTE:

- (a) Nails shall penetrate framing 7/8" minimum. Screws shall penetrate framing 5/8" minimum.
- (b) Firm contact shall be maintained with fasteners, braces, or temporary fasteners until the adhesive sets. Wallboard edges are to be snugly butted and squarely aligned.

D. Furring Attachment of Gypsumboard Products Over Existing Walls and Ceilings

When walls and ceilings are not acceptable for direct application as described in IIC, the use of furring is recommended

- 1 Trim need not be removed if it is not covered with lead-based paint, or if the walls are to be furred so that trim would be covered by the new surface finishing materials
- 2 Where furring strips cannot be pulled tight against the surface, because of bulging plaster, remove the bulges so the furring is level across the wall or ceiling

- 3 The minimum width of the face of the wood furring to which gypsumboard is attached shall be 1-1/2"
- 4 The minimum thickness of wood furring attached over other than solid surfaces shall be 1-1/2"
- 5 Steel furring channels are available and may be used if desired
- 6 The use of furring strips or channels can eliminate the need for removal of painted woodwork. Wood trim can be utilized as nailer strips along floor and door and window openings. Furring strips are fastened horizontally to base framing 16" or 24" o.c. with drywall screws or common nails. Furring fasteners must be long enough to penetrate into the framing members a minimum of 3/4". Use two nails at each framing intersection for wood furring. Screws through steel furring channels shall be applied alternately from top to bottom through flanges at each framing member intersection. Stop furring 6 inches short of any trim member. If trim and furring are not equally thick, shims can be used to level out differences. Decorative moldings around doors and windows that project beyond face of the trim should be removed or cut back.
7. Gypsumboard can be applied using adhesives when installed over wood furring. Apply 3/8" diameter beads full length on each furring strip. Supplemental fastening is required. Adhesives are not recommended for installations over metal furring channels
- 8 Nail, screw and steel furring channel standards are listed in Section IV — References

E. Corner and Edge Treatment.

- 1 Exterior Corners — When installations are treated with tape and joint compound, 1-1/8" by 1-1/8" steel corner beads shall be attached by nailing or by crimping the flanges into the gypsumboard at intervals not exceeding 12". Paper backed metal corner beads may be used with the paper flanges bedded in joint compound. Predecorated wallboard joints should be covered with an appropriate wood batten or other suitable molding
- 2 Interior Corners — Interior corners may be finished with tape and joint compound or wood moldings. Moldings may be used for predecorated or bevel edged boards
- 3 Trim Edges — If gypsumboard edges are exposed around door and window openings, edges should be trimmed with a suitable drywall casing bead or wood molding to hide the cut edges. Nail the

casing or molding into framing or abutting wood base or trim. Trim, routed out along the back edge to fit boards, may be used over plain or predecorated wallboard. If intersection gaps are $3/16''$ or less, a permanent type of resilient caulking compound can be used as filler. See Figure 3.

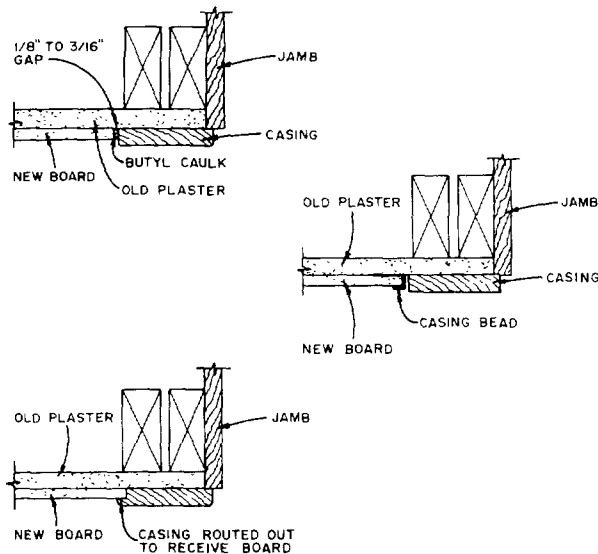


Figure 3—Door Framing Details—Direct Lamination.

- 4 When trim is not removed, and is used instead as a nailing surface, the wall may be finished as shown in Figures 4, 5 and 6.

III. Suspended Ceilings.

Older dwellings often have high ceilings, ten feet or more. If ceilings are high, and in poor condition, it can be advantageous to use a suspended system which will permit covering the old ceiling without removal of ceiling material. The suspension system can be planned so that the new ceiling is 7-1/2 to 8 feet high. Aside from avoiding the mess of tearing down an old ceiling, the decreased height can result in other advantages, such as reduced heating costs and reduced sound transmission between floors. Four suspended ceiling systems are described:

A. Suspended Wood Furring

Suspend 2" x 4" wood furring members by hanger wire attached to the ceiling joists. Gypsum wallboard panels are applied across the 2 x 4's and attached with drywall screws spaced at 12" maximum.

B. Suspended Metal Channels

Suspend 1-1/2" carrying channels from hanger wires attached to screw eyes fastened into the sides of framing members. Steel screw furring channels are clipped or wire-tied to the 1-1/2" carrying chan-

nels on 16" or 24" centers. Gypsumboard is attached with 1" type S drywall screws at 12" maximum spacing.

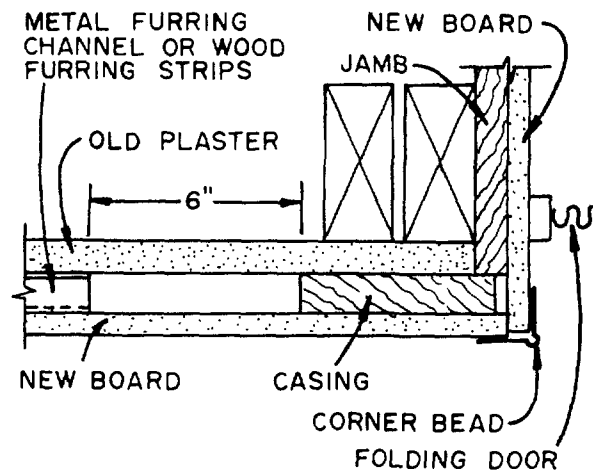


Figure 4—Door Framing Detail with Corner Bead.

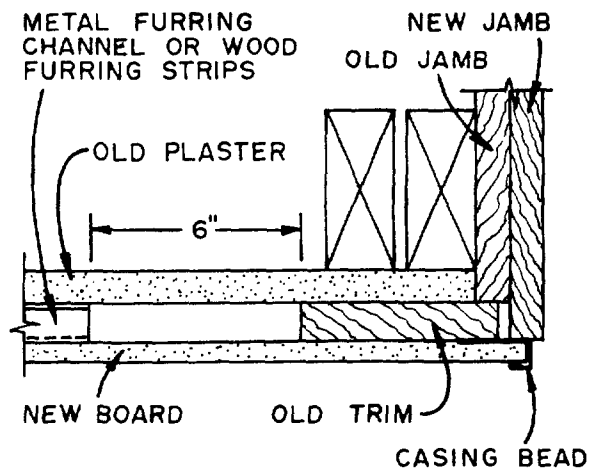


Figure 5—Door Framing Detail with Casing Bead.

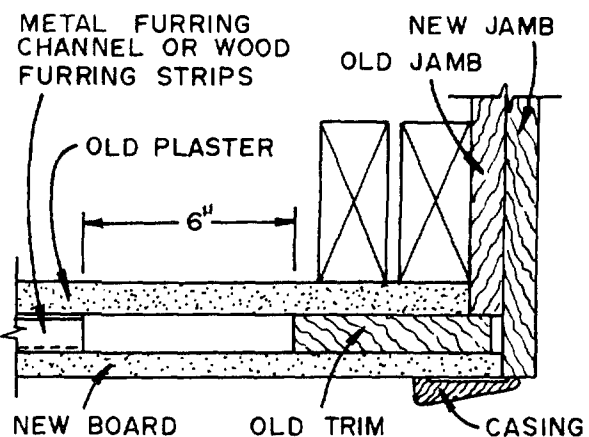


Figure 6—Door Framing Detail with New Casing.

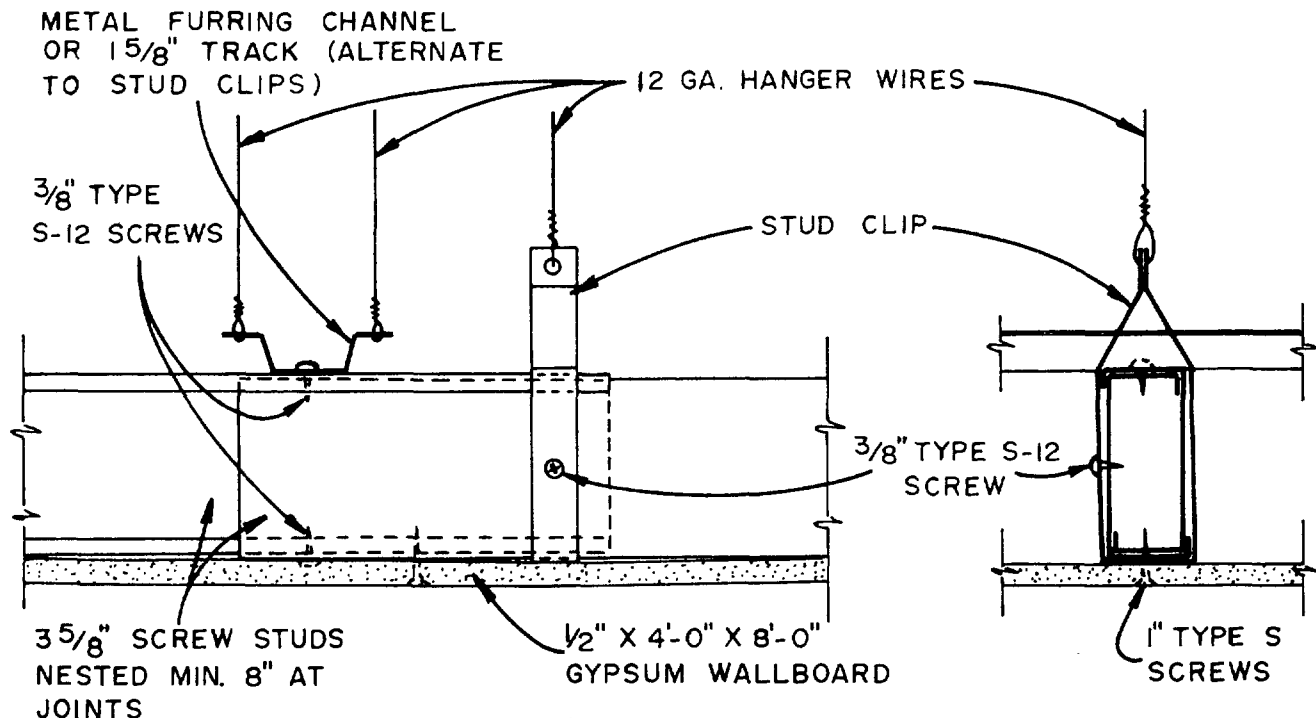


Figure 7—Steel Screw Stud Suspended Ceiling System.

C. Suspended Steel Screw Studs

Suspend steel screw studs on 16" or 24" centers using stud clips suspended from hanger wires. Alternately the screw studs may be attached to 1-1/2" steel screw furring channels suspended by hanger wires attached to ceiling framing. For details see Figure 7.

D. Suspended Gypsumboard Grid Ceiling System

Lay-in panels in 24" square or 24" by 48" sizes are supported in a grid system suspended from the supporting framing by hanger wires. Lay-in panels are non perforated to prevent paint on old ceilings from falling through. Detailed installation instructions are normally available from the material supplier, manufacturer, or described in ASTM Standard C 636. Common to all the ceiling covering methods is the necessity to arrange for adjustment of ceiling electrical fixtures and heating or ventilating ducts, if present. Relocation or adjustment work should be accomplished prior to ceiling installation.

IV. References

- 1 American National Standard Institute Standard Specifications ANSI A97.1 for "The Application and Finishing of Wallboard"

- 2 American Society for Testing and Materials ASTM Designation C 636, "Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels"
- 3 American Society for Testing and Materials ASTM Designation C 514, "Specifications for Nails for the Application of Gypsum Wallboard"
- 4 American Society for Testing and Materials ASTM Designation C 645, "Nonload-Bearing Steel Studs for Screw Application of Gypsum Wallboard, Runners and Rigid Furring Channels"
- 5 American Society for Testing and Materials ASTM Designation C 646, "Specifications for Steel Drill Screws for the Application of Gypsum Sheet Material to Light-Gage Steel Studs"
- 6 Gypsum Association Specifications, "Application of Gypsum Base for Gypsum Veneer Plasters and Application of Gypsum Veneer Plaster"
- 7 Gypsum Association Manual "Using Gypsumboard for Walls and Ceilings"
- 8 "Lead-Based Paint Poisoning Prevention Act" Public Law 91-695, 91st Congress, H.R. 19172, January 13, 1971

NOTES

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201 North Wells Street, Chicago, Illinois 60606
1800 N. Highland Ave., Hollywood, Calif. 90028

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