



Designation: C1280 – 11

Standard Specification for Application of Gypsum Sheathing¹

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1. Scope*

1.1 This specification covers the minimum requirements for and methods of application of gypsum sheathing for use as a substrate for exterior wall cladding.

1.2 Details of construction for a specific assembly to achieve the required fire resistance shall be obtained from reports of fire-resistance tests, engineering evaluations, or listings from recognized fire testing laboratories.

1.2.1 This specification shall govern where it is more stringent (size or thickness of framing and size and spacing of fasteners) than the fire-rated construction.

1.3 Where sound control is required for a gypsum sheathing assembly, the details of construction shall be in accordance with the acoustical test report of an assembly that has met the required acoustical value(s).

1.3.1 This specification shall govern where it is more stringent (size or thickness of framing and size and spacing of fasteners) than the sound-rated construction.

1.4 Where resistance to racking loads or shear is required for a gypsum sheathing assembly, the details of construction shall be in accordance with the racking or shear test report of an assembly that has met the required racking or shear value(s).

1.4.1 This specification shall govern where it is more stringent (size or thickness of framing and size and spacing of fasteners) than the racking or shear-tested construction.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 The text of this standard references footnotes which provide explanatory material. These footnotes shall not be considered as requirements of the standard.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

C11 Terminology Relating to Gypsum and Related Building Materials and Systems

C954 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness

C955 Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases

C1002 Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs

C1007 Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories

C1063 Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster

C1396/C1396M Specification for Gypsum Board

2.2 *U.S. Department of Commerce Publication*:

PS20 American Softwood Lumber Standard³

3. Terminology

3.1 *Definitions*: Definitions shall be in accordance with Terminology **C11**.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *exterior cladding, n*—a permanent material or system that impedes the transmission of environmental elements to the sheathing.

3.2.2 *fastener, n*—nails, staples, or screws used for application of the sheathing.

3.2.3 *framing member, n*—studs, headers, bracing, and blocking that serve to receive the sheathing.

3.2.4 *horizontal application, n*—a synonym for *perpendicular application*.

¹ This specification is under the jurisdiction of ASTM Committee C11 on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee C11.03 on Specifications for the Application of Gypsum and Other Products in Assemblies.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

*A Summary of Changes section appears at the end of this standard.

3.2.5 *parallel application, n*—gypsum sheathing applied with the edges parallel to the framing members; a synonym for *vertical application*.

3.2.6 *perpendicular application, n*—gypsum sheathing applied with the edges at right angles to the framing members; a synonym for *horizontal application*.

3.2.7 *require, v*—to mandate by a force outside this specification, such as a building code, project specification, contract, or purchase order.

3.2.8 *specified, adj*—pertaining to a mandatory requirement of this specification or a referenced requirement.

3.2.9 *specify, v*—to mandate by an obligation of this standard or a referenced document.

3.2.10 *vertical application, n*—synonym for *parallel application*.

3.2.11 *weather resistive barrier, n*—a temporarily exposed protective membrane that is intended to impede the penetration of environmental elements until the installation of a permanent exterior cladding.

4. Exposure After Installation

4.1 Gypsum sheathing board is a substrate that shall be covered by an exterior cladding or other weather-resistive barrier and is not intended for long-term exposure. It shall not be exposed to the elements for more than 30 days after it has been installed. Gypsum sheathing shall be covered with a weather-resistive barrier within 30 days if the exposure time will be more than 30 days.

NOTE 1—Some building codes require an additional weather-resistive barrier. The exterior face paper of the sheathing shall be dry prior to application of the additional weather-resistive barrier.

5. Materials and Manufacture

5.1 *Gypsum Sheathing*—Specification **C1396/C1396M**.

5.1.1 *Type X (Special Fire-Resistant) Gypsum Sheathing*—Gypsum sheathing that provides a greater degree of fire resistance than regular gypsum sheathing as defined in Specification **C1396/C1396M**.

5.2 *Fasteners*—Fasteners shall be as described in 5.2.1 through 5.2.3. The fastener length shall be not less than that specified in Table 1.

5.2.1 *Nails*—Nails shall be not less than 12-gauge galvanized, 7/16-in. (11.1-mm) diameter head.

5.2.2 *Screws*:

5.2.2.1 Screws for fastening gypsum sheathing to wood framing members, and to steel framing members less than

0.033 in. (0.84 mm) in thickness, shall meet the requirements of Specification **C1002**.

5.2.2.2 Screws for fastening gypsum sheathing to steel framing members from 0.033 to 0.112 in. (0.84 to 2.84 mm) in thickness shall meet the requirements of Specification **C954**.

5.2.2.3 Trim-head screws shall not be permitted for the attachment of gypsum sheathing.

5.2.2.4 Screws for fastening self-furred metal lath over gypsum sheathing as described in 8.2.7 shall be as specified in Specification **C1063**.

5.2.3 *Staples*—Staples shall be of galvanized steel, not less than 16-gauge, 7/16-in. (11.1-mm) wide crown outside measurement. Legs shall have divergent points.

5.3 *Framing Members*:

5.3.1 *Wood Framing*—Wood framing members shall conform to **PS20**.

5.3.2 *Steel Framing*—Load-bearing steel framing shall meet the requirements of Specification **C955**.

6. Substrate, Surface Preparation

6.1 The maximum spacing for framing members for gypsum sheathing shall be not more than 24 in. (610 mm) on center on walls.

6.1.1 Wood framing shall be straight and true, attached securely following accepted engineering practices and as required for the intended design. The surfaces to which abutting edges or ends of gypsum sheathing are to be attached shall be not less than 1½-in. (38-mm) wide. The bearing surface shall be not less than ¾ in. (19 mm) for internal corners or angles.

6.1.2 Load-bearing metal framing members shall be of the proper size and design for their intended use and shall be installed in accordance with Specification **C1007**.

7. Framing Alignment

7.1 Framing members shall be installed so that the surface will be in an even plane, unless otherwise specified, after the gypsum sheathing has been applied.

8. Cutting and Application of Gypsum Sheathing

8.1 *Cutting Gypsum Sheathing*:

8.1.1 The gypsum sheathing shall be cut by scoring and breaking or by sawing, working from the face side. The face paper shall be cut with a sharp knife or other suitable tool when cutting by scoring. The gypsum sheathing shall be broken by snapping the gypsum sheathing in the reverse direction or by cutting the back paper with a knife or suitable tool.

8.1.2 The cut edges and ends of gypsum sheathing shall be trimmed to obtain neat fitting joints when installed.

8.1.3 Holes for pipes, fixtures, or other small openings shall be scored on the face paper before removing the cutout with a saw or special tool designed for this purpose.

8.1.4 Where gypsum sheathing meets projecting surfaces, the gypsum sheathing shall be scribed and cut neatly.

8.2 *Application of Gypsum Sheathing*:

8.2.1 Gypsum sheathing shall be fitted snugly around all window and door openings.

8.2.1.1 Sheathing joints shall be offset a minimum of 4 in. (100 mm) from the edge of any opening.

TABLE 1 Minimum Fastener Lengths

Framing Type	Fastener Type	Sheathing Thickness, in. (mm)	Minimum Fastener Length, in. (mm)	
Wood	nails	½ (12.7)	1½ (38)	
		⅝ (15.9)	1¾ (45)	
	screws	½ (12.7)	1¼ (32)	
		⅝ (15.9)	1¼ (32)	
		staples	½ (12.7)	1½ (38)
			⅝ (15.9)	1¾ (45)
Steel	screws	½ (12.7)	1 (25)	
		⅝ (15.9)	1¼ (32)	