



Standard Specification for Factory-Laminated Gypsum Panel Products¹

This standard is issued under the fixed designation C1766; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers the factory-laminated gypsum panel products designed either for use on walls, ceilings, or partitions as part of a sound control system; or for use as a gypsum stud or gypsum coreboard.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *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

C473 Test Methods for Physical Testing of Gypsum Panel Products

C1264 Specification for Sampling, Inspection, Rejection, Certification, Packaging, Marking, Shipping, Handling, and Storage of Gypsum Panel Products

C1278 Specification for Fiber-Reinforced Gypsum Panel

C1396 Specification for Gypsum Board

C1658 Specification for Glass Mat Gypsum Panels

E84 Test Method for Surface Burning Characteristics of Building Materials

E119 Test Methods for Fire Tests of Building Construction and Materials

¹ This test method is under the jurisdiction of ASTM Committee C11 on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee C11.01 on Specifications and Test Methods for Gypsum Products.

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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. Terminology

3.1 Definitions used in this specification shall be in accordance with Terminology **C11**.

4. Materials and Manufacture

4.1 Factory-laminated gypsum panel products shall be composed of two or more gypsum panel products factory-laminated into a composite panel.

4.1.1 The individual gypsum panel products shall comply with Specification **C1278**, **C1396**, or **C1658**.

4.2 Laminating adhesive shall be applied to either one or both of the surfaces being laminated.

4.3 Factory-laminated gypsum panel products shall have a flame spread index of not more than 25 when tested in accordance with Test Method **E84**.

4.4 Factory-laminated gypsum panel products, type X (Special Fire-Resistant):

4.4.1 Factory-laminated gypsum panel products, type X, designates factory-laminated gypsum panel products complying with this specification that provides not less than 1 h fire-resistance rating for panels 5/8 in. [15.9 mm] thick or 3/4 h fire-resistance rating for panels 1/2 in. [12.7 mm] thick, applied parallel with and on each side of load bearing 2 by 4 wood studs spaced 16 in. [406 mm] on centers with 6d coated nails, 1 7/8-in. [48-mm] long, 0.0915-in. [2.3-mm] diameter shank, 1/4-in. [6.4-mm] diameter heads, spaced 7 in. [178 mm] on centers with gypsum panel joints staggered 16 in. [406 mm] on each side of the partition and tested in accordance with Test Methods **E119**.

5. Physical Properties

5.1 Specimens of factory-laminated gypsum panel products shall be taken from the samples obtained in accordance with Specification **C1264**.

5.2 Specimens shall be tested in accordance with Test Methods **C473**.

5.2.1 *Flexural Strength*—The specimens shall be tested face up and face down. The average breaking load shall be not less than the following:

Thickness, in. [mm]	Method A Bearing Edges Perpendicular to Panel Length, lbf [N]	Method A Bearing Edges Parallel to Panel Length, lbf [N]	Method B Bearing Edges Perpendicular to Panel Length, lbf [N]	Method B Bearing Edges Parallel to Panel Length, lbf [N]
1/2 [12.7]	110 [489]	40 [178]	107 [476]	36 [160]
5/8 [15.9]	140 [622]	50 [222]	137 [609]	46 [205]
3/4 [19.0]	170 [756]	60 [267]	167 [743]	56 [249]
1 [25.4]	230 [1023]	80 [356]	228 [1014]	77 [343]

5.2.2 *Humidified Deflection*—The specimens shall have an average deflection of not more than the following:

Thickness, in. [mm]	Deflection, in. [mm]
1/2 [12.7]	1-1/4 [32]
5/8 [15.9]	5/8 [16]
3/4 [19.0]	not required
1 [25.4]	not required

5.2.3 *Nail Pull Resistance*—The specimens shall have an average nail-pull resistance of not less than the following:

Thickness, in. [mm]	Method A, lbf [N]	Method B, lbf [N]
1/2 [12.7]	80 [356]	77 [343]
5/8 [15.9]	90 [400]	87 [387]
3/4 [19.0]	100 [445]	97 [432]
1 [25.4]	not required	not required

6. Dimensions and Tolerances

6.1 Specimens of factory-laminated gypsum panel products shall be taken from the samples obtained in accordance with Specification C1264.

6.2 Specimens shall be tested in accordance with Test Methods C473.

6.2.1 *Thickness*—The thickness shall be from 1/2 to 1 in. [12.7 to 25.4 mm] with tolerances of ± 0.030 in. [± 0.80 mm], with local variations of ± 0.060 in. [± 1.6 mm].

6.2.2 *Width*—The width tolerance for the composite panel shall be not more than 1/8 in. [3.2 mm] under the specified width.

6.2.3 *Length*—The length tolerance for the composite panel shall be $\pm 1/4$ in. [± 6 mm].

6.2.4 *End Squareness*—Corners shall be square with a tolerance of $\pm 1/8$ in. [± 3 mm] in the full width of the factory-laminated gypsum panel product.

6.3 *Edges and Ends*—The edges and ends shall be straight and the edges shall be either tapered, square, beveled, round, V-tongue and groove, or featured.

6.4 *Panel Alignment*—The individual gypsum panel products comprising the composite panel shall be aligned with each other. The offset between panels shall not be greater than 1/4 in. (6.4 mm) at the ends and 1/8 in. (3.2 mm) at the edges as shown in Fig. 1.

6.4.1 *Width*—The widths of the individual gypsum panel products comprising the composite panel shall not differ by more than 3/32 in. [0.2 mm].

6.4.2 *Length*—The lengths of the individual gypsum panel products comprising the composite panel shall not differ by more than 3/16 in. [0.5 mm].

7. Finish and Appearance

7.1 The surfaces of factory-laminated gypsum panel products shall be true and free from imperfections that would render it unfit for use with or without decoration.

8. Sampling, Inspection, Rejection, Certification, Packaging, Marking, Shipping, Handling, and Storage

8.1 Sampling, inspection, rejection, certification, packaging, marking, shipping, handling, and storage of factory-laminated gypsum panel products shall be in accordance with Specification C1264.

9. Keywords

9.1 ceiling; coreboard; drywall; factory-laminated; gypsum; gypsum board; gypsum ceiling board; gypsum coreboard; gypsum wallboard; partitions; plaster; sound control; wall; wallboard

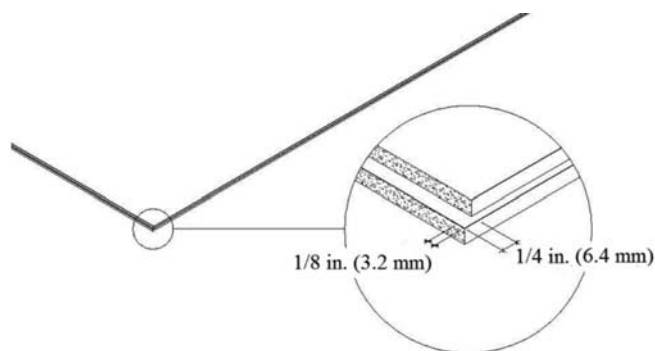


FIG. 1 Maximum Permissible Offsets

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