



Standard Specification for Gypsum Formboard¹

This standard is issued under the fixed designation C318/C318M; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This specification covers the minimum requirements for gypsum formboard designed for use as a permanent form for poured-in-place reinforced gypsum concrete roof decks.

1.2 The values stated in either inch-pound units or SI (metric) are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system shall be used independent of the other. Values from the two systems shall not be combined.

1.3 The text of this standard references notes which provide explanatory material. These notes shall not be considered requirements of the standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

C11 Terminology Relating to Gypsum and Related Building Materials and Systems

C22 Specification for Gypsum

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

G21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

3. Terminology

3.1 *Definitions*—Definitions of terms used in this standard shall be in accordance with Terminology **C11**.

4. Materials and Manufacture

4.1 Gypsum formboard shall consist of a noncombustible core, essentially gypsum complying with Specification **C22**,

containing not more than 15 % by weight of fiber, either mineral or organic, synthetic or natural.

4.2 The face surface shall be specifically treated to resist fungus growth.

5. Physical Properties

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

NOTE 1—Since this product is laid between subpurlins without mechanical attachment, a nail pull requirement is not specified for this gypsum panel product.

5.1.1 Specimens shall be taken from the samples obtained in accordance with Specification **C1264**.

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

| | Bearing Edges Across Fiber of Surfacing, lbf [N] | Bearing Edges Par- allel Fiber of Sur- facing, Face, lbf [N] | Bearing Edges Par- allel Fiber of Sur- facing, Back, lbf [N] |
|----------|--|--|--|
| Method A | 160 [715] | 60 [270] | 40 [180] |
| Method B | 157 [700] | 56 [250] | 36 [160] |

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

| Thickness, in. (mm) | Humidified Deflection, Eighths of an in. (mm) |
|------------------------|--|
| ½ [12.7] | 10 [32] |

5.1.4 *Core, End, and Edge Hardness*—The specimens shall have an average hardness of 15 lbf [65 N] when tested by Method A and 11 lbf [50 N] when tested by Method B.

5.1.5 *Resistance to Fungi*—The specimens shall obtain a rating not more than 1 (one) when judged in accordance with Practice **G21**, paragraph 9.3, (Observation for Visible Effects).

6. Dimensions and Tolerances

6.1 Specimens shall be taken from the samples obtained in accordance with Section 8.

6.2 Thickness, width, length, and end squareness shall be determined in accordance with Test Methods **C473**.

6.2.1 *Thickness*—The nominal thickness shall be ½ in. [12.7 mm] with tolerances in the nominal thickness of $\pm 1/64$ in. [0.4 mm] with local variations of $\pm 1/32$ in. [0.8 mm] from the nominal thickness.

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 **C11.01** 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.



6.2.2 *Width*—The nominal width shall be 32 in. [813 mm] with a tolerance of $\frac{1}{8}$ in. [3 mm] over the specified width, and $\frac{1}{4}$ in. [6 mm] under the specified width.

6.2.3 *Length*—The nominal length of gypsum formboard shall conform to the purlin spacing of multiples thereof, with tolerances of $\pm \frac{1}{4}$ in. [6 mm] from the nominal length.

6.2.4 *End Squareness*—Corners shall be square with a tolerance of $\pm \frac{1}{8}$ in. [± 3 mm] in the full width of the board.

6.3 *Edges and Ends*—The edges and ends shall be square ($90 \pm 10^\circ$), straight, and solid.

7. Finish and Appearance

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

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

8.1 The sampling, inspection, rejection, certification, packaging and package marking, shipping, handling and storage shall be conducted in accordance with Specification C1264.

9. Keywords

9.1 gypsum; gypsum concrete; gypsum formboard; gypsum panel product; roof decks

SUMMARY OF CHANGES

Committee C11 has identified the location of selected changes to this specification since the last issue, C318/C318M–00 (Reapproved 2010), that may impact the use of this specification. (Approved Oct. 1, 2013)

(1) Revised 2.1 and 4.1.

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