



Standard Specification for Gypsum Formboard¹

This standard is issued under the fixed designation C 318/C 318M; 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.

^{ε1} NOTE—The word “variances” was editorially corrected to “tolerances” in Section 6 in July 2002.

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:

- C 11 Terminology Relating to Gypsum and Related Building Materials and Systems²
- C 473 Test Methods for Physical Testing of Gypsum Board Products and Gypsum Lath²
- C 1264 Specification for Sampling, Inspection, Rejection, Certification, Packaging, Marking, Shipping, Handling and Storage of Gypsum Board²
- G 21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi³

3. Terminology

3.1 *Definitions*—Definitions of terms used in this standard shall be in accordance with Terminology C 11.

4. Materials and Manufacture

4.1 Gypsum formboard shall consist of a noncombustible core, essentially gypsum, 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 C 473.

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 C 1264.

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 Parallel Fiber of Surfacing, Face, lbf [N]	Bearing Edges Parallel Fiber of Surfacing, 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 G 21, 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 C 473.

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

6.2.2 *Width*—The nominal width shall be 32 in. [813 mm] with a tolerance of 1/8 in. [3 mm] over the specified width, and 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

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.

Current edition approved July 10, 2000. Published August 2000. Originally published as C 318 – 53 T. Last previous edition C 318/C 318M-96.

² *Annual Book of ASTM Standards*, Vol 04.01.

³ *Annual Book of ASTM Standards*, Vol 14.02.

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

tolerances of $\pm 1/4$ in. [6 mm] from the nominal length.

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 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 C 1264.

9. Keywords

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

SUMMARY OF CHANGES

This section identifies the location of changes to this specification that have been incorporated since the last issue. Committee C-11 has highlighted those changes that affect the technical interpretation or use of this specification.

(I) SI values in paragraphs 5.1.2 and 5.1.4 were rationalized to the nearest 5N.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).