



Designation: C 1178/C 1178M – 01

Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel¹

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1. Scope *

1.1 This specification covers glass mat water-resistant gypsum backing panel designed for use on ceilings and walls in bath and shower areas as a base for the application of ceramic or plastic tile.

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 independently of the other. Values from the two systems shall not be combined.

1.3 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as 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 Panel Products²

C 645 Specification for Nonstructural Steel Framing Members²

C 1264 Specification for Sampling, Inspection, Rejection, Certification, Packaging, Marking, Shipping, Handling, and Storage of Gypsum Board²

E 119 Test Methods for Fire Tests of Building Construction and Materials³

3. Terminology

3.1 Definitions shall be in accordance with Terminology C 11.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *glass mat, n*—a mat of glass fibers with or without a binder.

3.2.2 *edge, n*—the bound edge as manufactured.

3.2.3 *face, n*—the coated surface.

4. Materials and Manufacture

4.1 *Glass mat water-resistant gypsum backing panel* shall consist of a noncombustible water-resistant core, essentially gypsum, surfaced with glass mat, partially or completely embedded in the core, and with a water resistant coating on one surface.

4.2 Glass mat water-resistant gypsum panels, type X (special fire-resistant) designates glass mat gypsum panels complying with this specification that provide not less than 1-h fire-resistance for boards $\frac{5}{8}$ in. [15.9 mm] thick or $\frac{3}{4}$ -h fire-resistance for panels $\frac{1}{2}$ 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 center with 6d coated nails, 1 $\frac{7}{8}$ in. [48-mm] long, 0.0915 in. [2.3 mm] diameter shank, $\frac{1}{4}$ in. [6.4 mm] diameter heads, spaced 7 in. [178 mm] on center with glass mat gypsum panel joints staggered 16 in. [406 mm] on each side of the partition and tested in accordance with Test Methods E 119.

NOTE 1—Consult manufacturers for independent test data on assembly details and fire resistance classifications for other types of construction. See fire test reports or listings from recognized fire testing laboratories for assembly particulars, materials, and classifications.

5. Physical Properties

5.1 Specimens shall be taken from the samples obtained in accordance with Specification C 1264.

5.2 Specimens shall be tested in accordance with Test Methods C 473.

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

Thickness, in. [mm]	Method B Load, lbf [N]	
	Bearing edges perpendicular to the board edge	Bearing edges parallel to the board edge
$\frac{1}{4}$ [6.4]	50 [222]	40 [178]
$\frac{1}{2}$ [12.7]	100 [445]	80 [356]
$\frac{5}{8}$ [15.9]	140 [623]	100 [445]

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

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 on Specifications and Test Methods for Gypsum Products.

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

³ *Annual Book of ASTM Standards*, Vol 04.07.

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