Designation: C 1395/C 1395M – 04ε1

Specification for Gypsum Ceiling Board[1]

This standard is issued under the fixed designation C 1395/C 1395M; 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.

ε[1] NOTE—The word rating(s) was added to the term fire resistance throughout editorially October 2004.

1. Scope*

1.1 This specification covers ½ in. [12.7 mm] thick gypsum ceiling board designed for use on interior ceilings with framing spaced not more than 24 in. [610 mm] on center and that affords a surface suitable to receive water–based texture and other decoration. This product is also suitable for use on interior walls.

NOTE 1—Specification C 840 contains application procedures for gypsum ceiling board.

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.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

C 11 Terminology Relating to Gypsum and Related Building Materials and Systems

C 473 Test Methods for Physical Testing of Gypsum Panel Products

C 645 Specification for Nonstructural Steel Framing Members

C 840 Specification for Application and Finishing of Gypsum Board

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

E 84 Test Method for Surface Burning Characteristics of Building Materials

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

3. Terminology

3.1 Definitions used in this specification shall be in accordance with Terminology C 11.

4. Materials and Manufacture

4.1 Gypsum ceiling board shall consist of a noncombustible core, essentially gypsum, surfaced with paper bonded to the core.

4.2 *Gypsum ceiling board, type X (special fire-resistant)*, designates gypsum ceiling board complying with this specification that provides not less than ¾-h fire resistance rating for boards applied parallel with and on each side of load bearing 2 × 4 wood studs spaced 16 in. [406 mm] on centers with 6d coated nails, 1⅞ in. [48 mm] long, 0.0915 in. [2.3 mm] diameter shank, ¼ in. [6.4 mm] diameter heads, spaced 7 in. [178 mm] on centers with gypsum board joints staggered 16 in. [406 mm] on each side of the partition and tested in accordance with Test Methods E 119.

NOTE 2—Consult producers for independent test data on assembly details and fire resistance ratings for other types of construction. See fire test reports or listings from recognized fire testing laboratories for assembly particulars, materials, and ratings.

4.3 Gypsum ceiling board shall have a flame spread index of not more than 25 when tested in accordance with Test Method E 84.

5. Physical Properties

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

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

5.1.2 *Flexural Strength*—The specimens shall be tested face up and face down. The average breaking load shall be not less than that given in Table 1.

5.1.3 *Humidified Deflection*—The specimens shall have an average deflection of not more than 5/16 in. [8 mm].

[1] This test method is under the jurisdiction of ASTM 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.

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

TABLE 1 Flexural Strength

METHOD A		METHOD B	
Load, lbf [N] Bearing Edges Across Fiber of Surfacing	Load, lbf [N] Bearing Edges Parallel to Fiber of Surfacing	Load, lbf [N] Bearing Edges Across Fiber of Surfacing	Load, lbf [N] Bearing Edges Parallel to Fiber of Surfacing
110 [489]	40 [178]	107 [476]	36 [160]

5.1.4 *Core, End, and Edge Hardness*—The specimens shall have an average hardness of not less than 15 lbf [67 N] when tested by Method A and 11 lbf [49 N] when tested by Method B.

5.1.5 *Nail Pull Resistance*—The specimens shall have an average nail-pull resistance of not less 80 lbf [356 N] when tested by Method A and 77 lbf [343 N] when tested by Method B.

6. Dimensions and Tolerances

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

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 width shall be up to 48 in. [1220 mm] with a tolerance of 3/32 in. [3 mm] under the specified width.

6.2.3 *Length*—The tolerances in length shall be ±¼ in. [6 mm].

6.2.4 *Tapered Edge Depth*—The average thickness of the edge of recessed or tapered edge shall be not less than 0.020 in. [0.51 mm] but not more than 0.090 in. [2.29 mm] less than the average thickness of the gypsum ceiling board.

6.2.5 *End Squareness*—Corners shall be square with tolerances of ±⅛ in. [±3 mm] in the full width of the board.

6.3 *Edges and Ends*—The edges and ends shall be straight and either square, beveled, featured, tapered, or featured and tapered.

7. Finish and Appearance

7.1 The surfaces of gypsum ceiling board 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 gypsum ceiling board shall be in accordance with Specification C 1264.

9. Keywords

9.1 ceiling; drywall; gypsum; gypsum board; gypsum ceiling board; gypsum wallboard; type X

APPENDIX

(Nonmandatory Information)

This Appendix gives general information and also suggestions for inclusions to be made elsewhere by the specifier. It is not part of this specification.

The definition of type X as given in 4.2 and the alternate definition given in this appendix, are intended only as a test to define the gypsum board as meeting the requirements of type X. These tests do not indicate a preferred application, nor do they limit the use of the product in other fire rated assemblies.

All gypsum panel products for which type X is defined, except gypsum lath and gypsum shaftliner board, use the same test for type X products, therefore the type X definition indicates a consistent level of fire resistance.

X1. ALTERNATE DEFINITION FOR TYPE X

X1.1 Gypsum ceiling board, type X (special fire-resistant) designates gypsum ceiling board providing a greater fire resistance than regular gypsum ceiling board of the same thickness. Type X (special fire-resistant) gypsum ceiling board, when tested in accordance with Test Methods E 119, shall provide the following minimum fire resistance ratings for the assembly described.

X1.1.1 2-h for a ½ in. [12.7 mm] thickness applied to a partition in a double layer application an each side of 2-½ in. [64 mm] deep non–loadbearing galvanized steel studs complying with Specification C 645 spaced 24 in. [610 mm] on center. The base layer 48 in. [1220 mm] wide shall be attached using 1 in. [25 mm] long drywall screws spaced 12 in. [305 mm] on center along board edges, ends, and along intermediate studs. Joints shall be oriented parallel to and located over studs and staggered on opposite sides of the assembly. The face layer 48 in. [1220 mm] wide shall be attached using 1-⅝ in. [41 mm] long drywall screws spaced 12 in. [305 mm] along board edges, ends, and along intermediate studs. Joints shall be oriented parallel to and located over studs, offset 24 in. [610 mm] from the base layer joints, and staggered on opposite sides of the assembly. All joints in the face layer shall be filled with

joint compound, covered with joint tape and covered with an additional coat of joint compound. All screw heads in the face layer shall be covered with two coats of joint compound.

SUMMARY OF CHANGES

Committee C11 has identified the location of selected changes to this specification since the last issue, C 1395 – 01, that may impact the use of this specification. (Approved January 1, 2004)

(*1*) Deleted "recessed" from paragraph 6.3.

Committee C11 has identified the location of selected changes to this specification since the last issue, C 1395 – 98, that may impact the use of this specification. (Approved May 10, 2001)

(*1*) Note 1 was revised.

(*2*) Definition of type X statement was added to the Appendix.