



## Standard Specification for Molded Glass Fiber Reinforced Gypsum Parts<sup>1</sup>

This standard is issued under the fixed designation C 1381; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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<sup>€1</sup> NOTE—"Permissible Variations" has been editorially changed to "Tolerances" in the title of Section 6 June 2002.

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### 1. Scope

1.1 This specification covers molded glass fiber reinforced gypsum (GRG) parts, which are nonload-bearing, thin-shell, ornamental shapes for architectural embellishment of interior building construction.

1.2 The values stated in either inch-pound or SI units are to be regarded separately as standard. Within the text, the SI units are shown in parentheses. 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 information presented refers to the molded surface of the part.

1.4 The text of this standard references footnotes, which provide explanatory material. These footnotes 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 Systems<sup>2</sup>

C 1355/C 1355M Specification for Glass Fiber Reinforced Gypsum (GRG) Composites<sup>2</sup>

### 3. Terminology

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

#### 3.2 Definitions of Terms Specific to This Standard:

3.2.1 *control thickness, n*—the thickness of the GRG part where abutting other GRG parts, other products or at fastening points.

3.2.2 *embedments, n*—materials encapsulated into the part for the purpose of suspension, attachment, and stiffening.

3.2.3 *finish surface, n*—a surface against a mold.

3.2.4 *GRG part, n*—an individual molded component used as architectural embellishment.

3.2.5 *GRG product, n*—combination of GRG parts used as

architectural embellishment.

3.2.6 *mock-up, n*—a presentation assembly of GRG parts defined by the purchase agreement.

3.2.7 *part thickness, n*—thickness of a part at any measurement point.

### 4. Materials and Manufacture

4.1 *Materials*—GRG parts shall be produced using the same materials used to make the composites in conformance with Specification C 1355/C 1355M.

#### 4.2 Manufacture:

4.2.1 *GRG parts* shall be manufactured from the mixed slurry of alpha gypsum cement, potable water and additives, when used, and not less than 5 % by weight glass fiber reinforcement using either the hand lay-up or the spray-up process in a mold.

4.2.2 *GRG parts* shall be produced according to approved shop drawings.

4.2.3 Shop drawings shall specify part dimensions, quantities, recommended attachment points and methods, reinforcements, embedments, and tolerance.

### 5. Mechanical Properties

5.1 *GRG parts* shall be made from materials to make composites having properties in accordance with Specification C 1355/C 1355M.

### 6. Dimensions and Tolerances of GRG Parts

6.1 *Part Thickness*—The thickness of the GRG part shall be not less than  $\frac{3}{16}$  in. (5 mm).

6.2 *Control Thickness*, shall be not less than  $\frac{5}{16}$  in. (8 mm).

6.3 *Straightness*—At any point on a line generally along a plane, an edge, or a surface, the molded side of the part shall not vary from straight  $\pm \frac{1}{8}$  in. in 8 linear ft (1 mm in 750 mm).

6.4 *Dimensions*, as specified in approved shop drawings, pertaining to the individual part.

6.4.1 *Overall Width*,  $\pm \frac{1}{8}$  in. (3 mm).

6.4.2 *Dimensions Within the Overall Width*,  $\pm \frac{1}{16}$  in. (2 mm).

6.4.3 *Overall Length*,  $\pm \frac{1}{8}$  in. (3 mm).

6.4.4 *Dimensions Within the Overall Length*,  $\pm \frac{1}{16}$  in. (2 mm).

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<sup>1</sup> 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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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.01.

## **7. Workmanship, Finish and Appearance**

7.1 GRG parts shall be produced to quality, tolerances, and surface standards set within this specification.

7.2 The standard finished surface shall be suitable to receive flat paint.

7.3 Finishes with sheen, direct light or special lighting conditions require additional coats of primer, sanding and finishing by the installer or painter.

## **8. Sampling**

8.1 When specified by the purchase agreement, samples of the GRG part shall be taken at the place of manufacture for measuring in accordance with Section 6.

8.2 *Mock-Up*—When specified by the purchase agreement, a mock-up shall be supplied.

## **9. Inspection**

9.1 Inspection of the GRG parts shall be agreed upon between the purchaser and the supplier as part of the purchase agreement.

## **10. Rejection and Rehearing**

10.1 Rejection of GRG parts that fail to conform to the requirements of this specification shall be reported in writing to the producer or supplier within 14 calendar days from receipt of parts and prior to installation.

## **11. Certification**

11.1 When specified in the purchase agreement, the pur-

chaser shall be furnished certification that samples representing each lot have been either tested or inspected as directed in this specification and the requirements have been met. When specified in the purchase agreement, a report of test results shall be furnished.

## **12. Quality Assurance**

12.1 Each manufacturer's measuring of samples shall be representative of actual production procedures and materials. The GRG manufacturer shall certify that the materials are the same as those used to produce the composite according to C 1355/C 1355M.

## **13. Marking**

13.1 Each GRG part shall be marked clearly according to the project shop drawings.

## **14. Packaging**

14.1 Packaging shall ensure that the GRG parts arrive at the jobsite in good condition when handled and shipped according to industry operating standards.

## **15. Keywords**

15.1 glass fiber reinforced gypsum; glass fiber reinforced gypsum composite; glass fiber reinforced gypsum parts; GRG; GRG composites; GRG parts

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