



Designation: D 1734 – 93 (Reapproved 1998)

## Standard Practice for Making Cementitious Panels for Testing Coatings<sup>1</sup>

This standard is issued under the fixed designation D 1734; 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.

### 1. Scope

1.1 This practice covers procedures for molding and curing cementitious panels for use in exposure testing of coatings designed for masonry or cementitious surfaces, although these may be suitable for other tests.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

C 109/C 109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50 mm Cube Specimens)<sup>2</sup>

C 150 Specification for Portland Cement<sup>2</sup>

C 230 Specification for Flow Table for Use in Tests of Hydraulic Cement<sup>2</sup>

C 305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency<sup>2</sup>

C 511 Specification for Moist Cabinets, Moist Rooms and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes<sup>2</sup>

C 778 Specification for Standard Sand<sup>2</sup>

C 1005 Specification for Weights and Weighing Devices for Use in Physical Testing of Hydraulic Cements<sup>2</sup>

D 4258 Practice for Surface Cleaning Concrete for Coating<sup>3</sup>

D 4259 Practice for Abrading Concrete<sup>3</sup>

D 4260 Practice for Acid Etching Concrete<sup>3</sup>

### 3. Significance and Use

3.1 Researchers in the field of coatings have recognized the need for a standardized substrate for evaluating coatings

intended for use on cementitious surfaces. This practice describes the preparation of such panels.

### 4. Apparatus

4.1 *Molds*—High density polyethylene molds to make the panels as required.<sup>4</sup>

4.1.1 *Outdoor Exposure Tests*, for use on outdoor exposure testing racks, the panels shall be 8 by 12 by  $\frac{1}{16}$  in. (200 by 300 by 15 mm) in size.

4.1.2 *Machine Exposure Tests*, for machine exposure tests, the typical panel is 3 by 6 by  $\frac{1}{16}$  in. (75 by 150 by 15 mm) in size.

4.1.3 Other sizes to fit specific equipment may be used.

4.2 *Trowel*, rectangular having a steel blade approximately 4 to 6 in. (100 to 150 mm) in length, with straight edges, and 3 to 5 in. (75 to 125 mm) in width is generally recommended.

4.3 *Weights and Weighing Devices*, conforming to the requirements of Specification C 1005. The weighing device shall be evaluated for precision and bias at a total load of 2000 g.

4.4 *Mechanical Mixer*—An electrically driven mechanical mixer of the type equipped with a paddle and mixing bowl, as specified in Practice C 305.

4.5 *Flow Table*, as described in Specification C 230.

### 5. Materials

5.1 *White Portland Cement*, conforming to the requirements of Type I of Specification C 150.

5.2 *Graded Standard Sand*, conforming to the requirements of Specification C 778.

### 6. Procedure

6.1 *Preparation of Material*—Mix the cement:sand:water in a ratio of 1:2:0.43 to obtain a flow of  $110 \pm 5\%$ , when determined as specified in 10.3 of Test Method C 109. Typically, for three large test panels, weigh out 1800 g of portland cement, 3600 g of graded sand and 770 g of water. For three small test panels, use 350 g of portland cement, 700 g of sand and 150 g of water.

NOTE 1—Minor adjustments to the flow may be made by the addition

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings and Materials and is the direct responsibility of Subcommittee D01.47 on Masonry Treatments.

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

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 06.02.

<sup>4</sup> The sole source of supply of molds known to the committee at this time is the American Cube Mold, Macedonia, OH 44056. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend.