



Designation: C1140 – 03a

Standard Practice for Preparing and Testing Specimens from Shotcrete Test Panels¹

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1. Scope

1.1 This practice covers procedures for preparing test panels of dry-mix or wet-mix shotcrete and for testing specimens sawed or cored from the panels.

1.2 The values stated in inch-pound units are to be regarded as the standard.

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:²

- C42/C42M Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- C78 Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
- C138/C138M Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
- C143/C143M Test Method for Slump of Hydraulic-Cement Concrete
- C171 Specification for Sheet Materials for Curing Concrete
- C231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
- C457 Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete
- C511 Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes
- C513 Test Method for Obtaining and Testing Specimens of

Hardened Lightweight Insulating Concrete for Compressive Strength³

C642 Test Method for Density, Absorption, and Voids in Hardened Concrete

C995 Test Method for Time of Flow of Fiber-Reinforced Concrete Through Inverted Slump Cone³

C1018 Test Method for Flexural Toughness and First-Crack Strength of Fiber-Reinforced Concrete (Using Beam With Third-Point Loading)³

C1399 Test Method for Obtaining Average Residual-Strength of Fiber-Reinforced Concrete

3. Summary of Practice

3.1 Test panels of shotcrete are fabricated using the personnel, materials, equipment, and shooting positions under investigation. Specimens are core drilled or sawed from these panels for evaluation.

4. Significance and Use

4.1 Specimens obtained in accordance with the procedure section of this practice may be used for preconstruction studies of shotcrete mixtures, to qualify nozzlemen and equipment, or for quality control, or compressive or flexural strength testing, during the progress of a project.

5. Test Panels

5.1 Forms for Panels:

5.1.1 The form for receiving the shotcrete shall be either wood or steel construction and sufficiently rigid to prevent dislodging of the shotcrete through vibration or deformation. The form shall have a minimum width and length of 24 in. (610 mm) and a minimum depth of 3½ in. (89 mm) with either square or sloped sides. Larger panels may be desirable for qualifying nozzlemen, equipment, or mixture design.

5.1.1.1 *Wood Forms*—Wood forms shall have a back made from plywood at least ¾ in. (19 mm) thick. Side pieces shall be made of lumber with a minimum thickness of 1½ in. (38 mm).

³ Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

¹ This practice is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.46 on Shotcrete.

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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.