



Standard Practice for Making Roller-Compacted Concrete in Cylinder Molds Using a Vibrating Table¹

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1. Scope*

1.1 This practice covers procedures for making cylindrical test specimens from concrete when the standard procedures of rodding and internal vibration, as described in Practice C31/C31M, are not practicable. This practice is applicable to freshly mixed concrete, prepared in the laboratory and the field, having a nominal maximum size aggregate of 50 mm [2 in.] or less. If the nominal maximum size aggregate is larger than 50 mm [2 in.], the practice is applicable only when performed on the fraction passing the 50-mm [2-in.] sieve with the larger aggregate being removed in accordance with Practice C172. This practice, intended for use in testing roller-compacted concrete, may be applicable to testing other types of concrete such as cement-treated aggregate and mixtures similar to soil-cement.

1.2 Two methods are provided for making concrete cylinders using a vibrating table:

1.2.1 Method A is a procedure for making test specimens in steel reusable molds attached to a vibrating table.

1.2.2 Method B is a procedure for making test specimens in single-use plastic molds that have been inserted into a metal sleeve attached to a vibrating table.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *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.*

¹ This practice is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.45 on Roller-Compacted Concrete.

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2. Referenced Documents

2.1 ASTM Standards:²

C31/C31M Practice for Making and Curing Concrete Test Specimens in the Field

C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens

C172 Practice for Sampling Freshly Mixed Concrete

C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory

C470/C470M Specification for Molds for Forming Concrete Test Cylinders Vertically

C496/C496M Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens

C1170/C1170M Test Method for Determining Consistency and Density of Roller-Compacted Concrete Using a Vibrating Table

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Summary of Practice

3.1 This practice describes methods for making cylindrical concrete test specimens using a vibrating table. Test specimens are made in cylindrical molds that are attached to the vibrating table under a 9-kg [20-lb] surcharge to facilitate consolidation.

4. Significance and Use

4.1 This practice is intended to be used for stiff to extremely dry concrete mixtures commonly used in roller-compacted concrete construction. This practice is used instead of rodding or internal vibration, which cannot properly consolidate concrete of this consistency (Note 1).

NOTE 1—Further description of this concrete consistency is given in ACI 207.5 Roller-Compacted Mass Concrete³ and 211.3 Guide for Selecting Proportions for No-Slump Concrete³. The consistency of roller-compacted concrete may be determined in accordance with Test Method C1170/C1170M.

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.

³ *ACI Manual of Concrete Practice, Part I*, Materials and General Properties of Concrete, 2005, American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333.

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