



Designation: C1849/C1849M – 17

Standard Test Method for Density and Air Content (Pressure Method) of Freshly Mixed Roller-Compacted Concrete¹

This standard is issued under the fixed designation C1849/C1849M; 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.

1. Scope

1.1 This test method covers the determination of density and air content of freshly mixed roller-compacted concrete (RCC) using the apparatus described in Test Method C231/C231M and the vibrating hammer described in Test Method C1435/C1435M.

1.2 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.

NOTE 1—Sieve size is identified by its standard designation in Specification E11. The alternative designation given in parentheses is for information only and does not represent a different standard sieve size.

1.3 The text of this test method references notes and footnotes that provide explanatory information. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of this 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. (Warning—Fresh hydraulic cementitious mixtures are caustic and may cause chemical burns to skin and tissue upon prolonged exposure.)*²

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This test method 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.

Current edition approved June 15, 2017. Published July 2017. DOI: 10.1520/C1849_C1849M-17.

² Section on Safety Precautions, Manual of Aggregate and Concrete Testing, *Annual Book of ASTM Standards*, Vol 04.02.

2. Referenced Documents

2.1 ASTM Standards:³

- C31/C31M Practice for Making and Curing Concrete Test Specimens in the Field
- C125 Terminology Relating to Concrete and Concrete Aggregates
- C138/C138M Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
- C172/C172M Practice for Sampling Freshly Mixed Concrete
- C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory
- C231/C231M Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
- C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
- C1067 Practice for Conducting a Ruggedness Evaluation or Screening Program for Test Methods for Construction Materials
- C1170/C1170M Test Method for Determining Consistency and Density of Roller-Compacted Concrete Using a Vibrating Table
- C1435/C1435M Practice for Molding Roller-Compacted Concrete in Cylinder Molds Using a Vibrating Hammer
- E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology C125.

4. Significance and Use

4.1 The test determines the air content of freshly mixed RCC exclusive of any air that may exist inside voids within aggregate particles. For this reason, it is applicable to concrete made with normal-density or high-density aggregate particles

³ 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.