Designation: C1542/C1542M – 16a

Standard Test Method for Measuring Length of Concrete Cores[1]

This standard is issued under the fixed designation C1542/C1542M; 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 is used to determine the length of a core drilled from concrete.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the inch-pound units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other.

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

C125 Terminology Relating to Concrete and Concrete Aggregates

C174/C174M Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores

C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

C1604/C1604M Test Method for Obtaining and Testing Drilled Cores of Shotcrete

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 This test method provides two procedures for determining the length of a core obtained in accordance with either Test Method C42/C42M or Test Method C1604/C1604M. This length is used in conjunction with condition surveys, density and voids analysis, and other applications.

4.2 This procedure does not intend to include in the length measurement adhered particles not part of the concrete mixture.

4.3 Test Method C174/C174M also determines the length of concrete cores using a different measuring apparatus and procedure.

NOTE 1—Test Method C174/C174M uses an apparatus that establishes two parallel planes a known distance apart. The length of the core is determined by calculation using the known distance between the two parallel planes and the measured distance from the upper plane to the top of the core.

5. Apparatus

5.1 *Jaw Caliper,* minimum depth of jaw 65 mm [2.5 in.]. Measuring range 0 to 300 mm [0 to 12 in.]. Accuracy to 0.02 mm [0.001 in.] or better.

5.1.1 Offset points as part of caliper accessory kit to permit length measurements at points not on the core perimeter.

5.2 *Ruler,* 300 to 380 mm [12 to 15 in.] divided into 1 mm [1⁄16 or 0.1 in.] graduations.

6. Test Specimens

6.1 Cores shall be obtained in accordance with Test Method C42/C42M or Test Method C1604/C1604M.

6.2 Cores shall be intact and be free of any coatings.

7. Procedure

7.1 *Jaw Caliper Procedure:*

7.1.1 Attach offset points to caliper jaws and initialize zero reading.

7.1.2 Hold the specimen and place the open jaws of the caliper midpoint between the center and edge of the specimen. Measure and record the value to the nearest 0.25 mm [0.01 in.]. Rotate the specimen 90°, 180°, and 270° and repeat procedure. Obtain one measurement along the axis of the specimen and record.

7.1.3 Re-zero the calipers. If the zero reading has changed by more than 0.25 mm [0.01 in.] take a new set of measurements as described in 7.1.2.

7.2 *Ruler Procedure:*

[1] This test method is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.61 on Testing for Strength.

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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.

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