Designation: C1542/C1542M – 14

StandardTest 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 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

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 as measured along its axis. This length is used in conjunction with length to diameter relationships, condition surveys, absorption, density and voids analysis, petrography, cement content analysis, and other applications. It does not meet requirements for determining the distance between two parallel surfaces, which represents the thickness of a structural element often used to establish compliance with design specifications as outlined by Test Method C174.

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 0.03 mm [0.001 in.].

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. Procedure

6.1 *Jaw Caliper Procedure:*

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

6.1.2 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.

6.2 *Ruler Procedure:*

6.2.1 Position core with finished or formed face placed down against flat and level surface. Place ruler on flat surface against side of core and measure length to nearest 1 mm [1⁄16 or 0.05 in.] and record. Rotate core and repeat measurements at approximately 90°, 180°, and 270°.

NOTE 1—This procedure does not intend to include in the length measurement adhered pieces of material not part of the original concrete mixture.

7. Report

7.1 *Jaw Caliper*—Average five measurements and report to nearest 1 mm [0.05 in.].

7.2 *Ruler*—Average four measurements and report to nearest 1 mm [0.05 in.].

[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**