
Standard Practice for

Use of Apparatus for the

Determination of Length

Change of Hardened Cement

Paste, Mortar, and Concrete

AASHTO Designation: R 70-16¹

Release: Group 1 (April 2016)

ASTM Designation: C490/C490M-11^{ε1}



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Use of Apparatus for the Determination of Length Change of Hardened Cement Paste, Mortar, and Concrete

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1. SCOPE

- 1.1. This standard practice covers the requirements for the apparatus and equipment used to prepare specimens for the determination of length change in hardened cement paste, mortar, and concrete; the apparatus and equipment used for the determination of these length changes; and the procedures for its use.
- 1.2. Methods for the preparation and curing of test specimens, conditions of testing and curing, and detailed procedures for calculating and reporting test results are contained in applicable test methods.
- 1.3. The values stated in either SI units or inch-pound units are to be regarded separately as the 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 nonconformance with the standard.

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standard:*
- M 201, Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes
- 2.2. *ASTM Standard:*
- C1005, Standard Specification for Reference Masses and Devices for Determining Mass and Volume for Use in the Physical Testing of Hydraulic Cements

3. TERMINOLOGY

- 3.1. *length change*—an increase or decrease in the linear dimension of a test specimen, measured along the longitudinal axis, due to causes other than applied load.

4. SIGNIFICANCE AND USE

- 4.1. This practice is intended to provide standard requirements for apparatus common to many test methods used in connection with cement and concrete and standardized procedures for its use. The