
Standard Method of Test for

Determination of Moisture in Soils by Means of a Calcium Carbide Gas Pressure Moisture Tester

AASHTO Designation: T 217-14 (2022)

Technically Revised: 2014

Reviewed but Not Updated: 2022

Editorially Revised: 2021

Technical Subcommittee: 1a, Soil and Unbound Recycled Materials



**American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. This test method is intended to determine the moisture content of soils by means of a calcium carbide gas pressure moisture tester. The manufacturer's instructions shall be followed for the proper use of the equipment.
- 1.2. The following applies to all specified limits in this standard: For the purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded off "to the nearest unit" in the last right-hand place of figures used in expressing the limiting value, in accordance with [ASTM E29](#).
- Note 1**—This method shall not be used on granular materials having particles large enough to affect the accuracy of the test—in general any appreciable amount retained on a 4.75-mm sieve. The super 200 D tester is intended to be used to test aggregate.
- 1.3. The values stated in SI units are to be regarded as the standard.
- 1.4. Refer to OSHA referenced documents for regulatory information for chemicals.
- 1.5. *The quality of the results produced by this standard are dependent on the competence of the personnel performing the procedure and the capability, calibration, and maintenance of the equipment used. Agencies that meet the criteria of [R 18](#) are generally considered capable of competent and objective testing/sampling/inspection/etc. Users of this standard are cautioned that compliance with [R 18](#) alone does not completely assure reliable results. Reliable results depend on many factors; following the suggestions of [R 18](#) or some similar acceptable guideline provides a means of evaluating and controlling some of those factors.*
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2. REFERENCED DOCUMENTS

- 2.1. AASHTO Standards:
- [M 231](#), Weighing Devices Used in the Testing of Materials
 - [R 18](#), Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories
 - [T 265](#), Laboratory Determination of Moisture Content of Soils

- 2.2. *ASTM Standard:*
- E29, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- 2.3. *Federal Standard:*
- Fed. Std. No. 29, CFR 1910.1200, OSHA Hazard Communication Standard; see also Permissible Exposure Limits—Annotated Tables, available at <https://www.osha.gov/dsg/annotated-pels/>

3. APPARATUS

- 3.1. *Calcium Carbide Pressure Moisture Tester*—A chamber with attached pressure gauge for the water content of specimens having a mass of at least 20 g (Figure 1).
- 3.2. *Balance*—Shall conform to M 231, Class G 2.
- 3.3. *Steel Balls*—Two 31.75-mm (1.25-in.) steel balls.
- 3.4. *Cleaning brush and cloth.*
- 3.5. *Scoop*—For measuring calcium carbide reagent.