
Standard Method of Test for

Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus

AASHTO Designation: T 245-22

Technically Revised: 2022

**Technical Subcommittee: 2d, Proportioning
of Asphalt–Aggregate Mixtures**



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

- 1.1. This method covers the measurement of the resistance to plastic flow of cylindrical specimens of asphalt mixture loaded on the lateral surface by means of the Marshall apparatus. This method is for use with mixtures containing asphalt binder or asphalt cutback and aggregate up to 25.4-mm (1-in.) maximum size.
- 1.2. *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 339M/M 339, Thermometers Used in the Testing of Construction Materials
 - < R 18, Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories
 - < R 68, Preparation of Asphalt Mixtures by Means of the Marshall Apparatus
- 2.2. *ASTM Standards:*
- < C670, Standard Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
 - < D3549/D3549M, Standard Test Method for Thickness or Height of Compacted Asphalt Mixture Specimens
 - < D5361/D5361M, Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing
 - < E1, Standard Specification for ASTM Liquid-in-Glass Thermometers
 - < E230/E230M, Standard Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
 - < E879, Standard Specification for Thermistor Sensors for General Purpose and Laboratory Temperature Measurements

- 2.3. *International Electrotechnical Commission Standard:*
< IEC 60751: 2008 Industrial Platinum Resistance Thermometers and Platinum Temperature Sensors

3. APPARATUS

- 3.1. *Breaking Head (Figure 1)*—Shall consist of upper and lower cylindrical segments or test heads having an inside radius of curvature of 50.8 mm (2 in.) accurately machined. The lower segment shall be mounted on a base having two perpendicular guide rods or posts extending upward. Guide sleeves in the upper segment shall be in such a position as to direct the two segments together without appreciable binding or loose motion on the guide rods.