
Standard Method of Test for

Resistance to Deformation and Cohesion of Hot Mix Asphalt by Means of Hveem Apparatus

AASHTO Designation: T 246-22¹

Technically Revised: 2022

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

ASTM Designation: D1560-15



American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. These methods cover the determination of (1) the resistance to deformation of compacted HMA mixtures by measuring the lateral pressure developed from applying a vertical load by means of the Hveem stabilometer; and (2) the cohesion of compacted bituminous mixtures by measuring the forces required to break or bend the sample as a cantilever beam by means of the Hveem cohesiometer.²
- 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.*

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
 - < T 247, Preparation of Test Specimens of Hot Mix Asphalt (HMA) by Means of California Kneading Compactor
 - < T 312, Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor
- 2.2. *ASTM Standards:*
- < 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 60584-1: 2013 Thermocouples - Part 1: EMF Specifications and Tolerances

RESISTANCE TO DEFORMATION

3. APPARATUS

- 3.1. *Stabilometer*—The Hveem stabilometer (Figures 1 and 2) is a triaxial testing device consisting essentially of a rubber sleeve within a metal cylinder containing a liquid that registers the horizontal pressure developed by a compacted test specimen as a vertical load is applied.

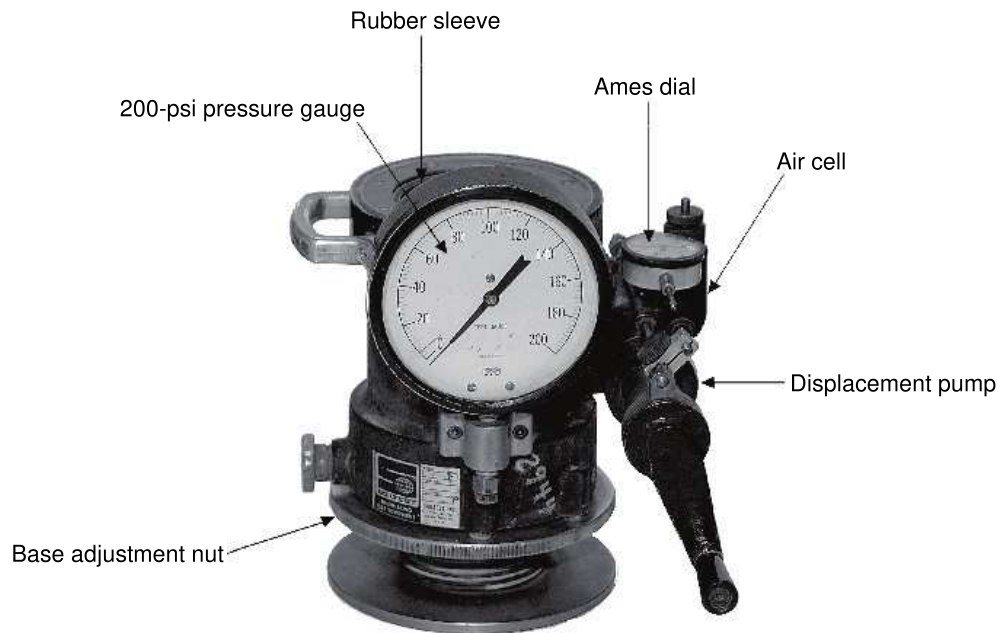
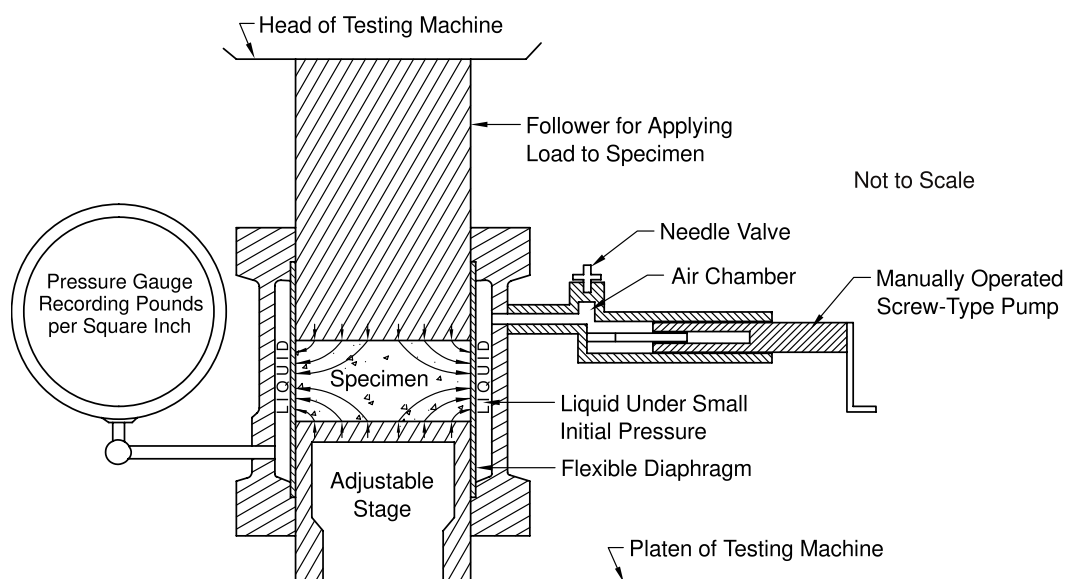


Figure 1—Hveem Stabilometer



- Notes:
1. The specimen is given lateral support by the flexible sidewall, which transmits horizontal pressure to the liquid.
 2. The magnitude of the pressure can be read on the gauge.

Figure 2—Diagrammatic Sketch of the Hveem Stabilometer (not to scale)

- 3.2. *Testing Machine*—A compression testing machine having a minimum capacity of 44.5 kN (10,000 lbf). Figure 3 shows the assembly of the stabilometer in a testing machine. The 222-kN (50,000-lbf) capacity compression testing machine specified in T 247 is normally used to perform the stabilometer test.



Figure 3—Hveem Stabilometer Mounted in the Testing Machine