
Standard Method of Test for

Preparation of Test Specimens of Hot Mix Asphalt (HMA) by Means of California Kneading Compactor

AASHTO Designation: T 247-22

Technically Revised: 2022

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

ASTM Designation: D1561-92



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

- 1.1. The method covers the compaction of test specimens of hot mix asphalt (HMA) by means of a mechanical compactor that imparts a kneading action to the test specimens by a series of individual impressions made with a ram.
- 1.2. *This standard may involve hazardous materials, operations, and equipment. 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.*
- 1.3. *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
 - < R 30, Laboratory Conditioning of Asphalt Mixtures
 - < T 246, Resistance to Deformation and Cohesion of Hot Mix Asphalt by Means of Hveem Apparatus
 - < T 316, Viscosity Determination of Asphalt Binder Using Rotational Viscometer
- 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
- < E2877, Standard Guide for Digital Contact Thermometers

2.3. *International Electrotechnical Commission Standard:*

- < IEC 60584-1: 2013 Thermocouples - Part 1: EMF Specifications and Tolerances

3. APPARATUS

- 3.1. *California Kneading Compactor*—Mechanical kneading compactor, as shown in Figure 1,¹ for consolidating test specimens.

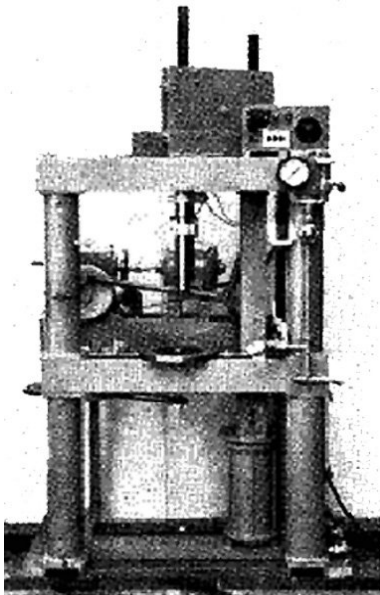


Figure 1—California Kneading Compactor

Note 1—Kneading compactors, which on standardization develop a trace curve similar to that of the California kneading compactor, shall be considered acceptable under this test method. Optionally, any kneading compactor capable of fabricating specimens that will provide stabilometer values equivalent to those obtained from the California kneading compactor shall be acceptable for use under this test method. The supplier has the responsibility of furnishing those substantiating data for his device.

Note 2—Curves are considered within standardization when they show the same peak pressure and dwell time in load time trace obtained in the calibration procedure.

Note 3—This compactor shall be considered in standardization when the peak momentary load applied to a test specimen is held within 5 percent of the intended foot pressure (within the range from 2.4 to 3.4 MPa (350 to 500 psi)).

Note 4—The stabilometer values from replicate specimens fabricated by T 247 and tested in accordance with T 246 shall fall within a range of three units for all dense-graded HMA mixtures containing aggregates not larger than 12.5 mm ($\frac{1}{2}$ in.) and within a range of four units for coarser-graded HMA mixtures containing up to 25.0-mm (1-in.) maximum-sized aggregates.