



Designation: D5361/D5361M – 11

Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing¹

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1. Scope

1.1 This practice describes a procedure for removal of a sample of compacted bituminous mixture from a pavement for laboratory testing.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D3665 Practice for Random Sampling of Construction Materials

3. Significance and Use

3.1 Samples obtained in accordance with the procedure given in this practice may be used to measure pavement thickness, density, resilient or dynamic modulus, tensile strength, Marshall or Hveem stability, or for extraction testing, to determine asphalt content, asphalt properties and mix gradation.

4. Apparatus

4.1 To minimize distortion of the compacted bituminous course(s), power equipment shall be used to secure the sample. The equipment may be either a core drill or power saw.

4.2 The cutting edge of the core drill bit shall be of hardened steel or other suitable material with diamond chips embedded in the metal cutting edge.

4.3 Saw blades used in a power saw shall be either a hardened metal blade with diamond chips embedded or an abrasive blade such as carborundum or similar material.

4.4 A source of cooling water, dry ice, liquid nitrogen, or other cooling material is normally required but in some cases may be omitted when only a single sample is to be secured. At any time there is evidence of damage to the edge of the sample due to the generation of heat caused by friction, a cooling material shall be applied to the cutting tool or to the pavement surface to minimize sample distortion or other damage.

4.5 A device (core debonder) for separating core samples from underlying layers is not required to be used. If such device is employed, it shall be a metal semicircle with an inside radius equal to the outside radius of the core and shall have a rigidly attached handle. A split core barrel of the required radius cut in half vertically and welded to a strap iron handle is suitable for this purpose. (See Fig. 1.)

NOTE 1—Differences in manufacturers' tolerances of core barrels' diameters and thicknesses may result in a particular barrel not fitting into the kerf. In such cases, other means may have to be used for debonding.

4.6 A lifting device (core lifter) for removing core samples from holes will preserve the integrity of the core. The device shall be a steel rod of suitable length and with a diameter that will fit into the space between the core and the pavement material. There shall be a 90° bend at the top to form a handle and a 90° bend at the bottom, approximately 50 mm (2 in.) long, to form the lifter.

5. Sampling

5.1 Select the locations to be sampled by a random method from the material in place. Random sampling procedures as outlined in Practice D3665 shall be followed when samples obtained will be used in conducting quality control/quality assurance tests. Obtain at least three samples (cores) selected at random from the lot being sampled. Test each sample and average the test results to determine the acceptability. Take all samples from the roadway for the full depth of the material, taking care to exclude any underlying material. Each sample shall be obtained in such a manner as to ensure a minimum disturbance of the material. Samples obtained using non-random procedures must be used for informational purposes only and not included in statistically based quality control/quality assurance programs

¹ This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.30 on Methods of Sampling.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.