



Designation: D5361 – 06

# Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing<sup>1</sup>

This standard is issued under the fixed designation D5361; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 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:*<sup>2</sup>

**D979** Practice for Sampling Bituminous Paving Mixtures

**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 Take samples in accordance with the provisions of Practice **D979**. Random sampling procedures as outlined in Practice **D3665** shall be followed when samples obtained will be used in conducting quality control/quality assurance tests.

5.2 The sampling plan must include a clear definition as to whether samples shall be taken adjacent to the pavement edge or construction joints where density may be slightly lower than in the main portion of the paving lane.

NOTE 2—Variations in the pavement condition that can be detected by visual inspection may dictate that samples be taken from areas so identified, apart from the random sampling plan. However, non-random samples violate the principles behind statistically based quality control/quality assurance testing programs. Samples obtained using non-random

<sup>1</sup> 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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<sup>2</sup> 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.