



Designation: ~~D71 – 94 (Reapproved 2009)~~ D71 – 94 (Reapproved 2015)^{ε1}

Standard Test Method for Relative Density of Solid Pitch and Asphalt (Displacement Method)¹

This standard is issued under the fixed designation D71; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

^{ε1} NOTE—SI unit formatting was corrected editorially in May 2015.

1. Scope

1.1 This test method covers the determination of relative density by water displacement of hard pitches and asphalts with softening points above ~~70°C; 70 °C~~.

1.2 The relative density of hard pitch and asphalt shall be determined, whenever possible, on homogeneous natural fragments free of cracks. The use of cast cubes is not recommended due to the difficulty of avoiding incorporation of air bubbles.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *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

[D61 Test Method for Softening Point of Pitches \(Cube-in-Water Method\)](#)

[D140 Practice for Sampling Bituminous Materials](#)

[D4296 Practice for Sampling Pitch](#)

3. Terminology

3.1 *Definitions:*

3.1.1 *relative density*—the ratio of a given volume of material at ~~25°C; 25 °C~~ to the weightmass of an equal volume of water at the same temperature (specific gravity).

4. Summary of Test Method

4.1 The sample is suspended from a thin wire and weighed, first in air, then submerged in water at ~~25.0°C; 25.0 °C~~. The relative density is calculated from these ~~weights; masses~~.

5. Significance and Use

5.1 This test method is useful in characterizing pitches and asphalts as one element in establishing uniformity of shipments and sources of supply.

6. Apparatus

6.1 *Pan Straddle*, suitable for use with an analytical balance.

6.2 *Analytical Balance*, equipped with a hook above the pan and capable of weighing a ~~20-g; 20 g~~ specimen to ~~1-mg; 1 mg~~.

¹ This test method is under the jurisdiction of ASTM Committee [D02](#) on Petroleum Products—Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee [D02.05](#) on Properties of Fuels, Petroleum Coke and Carbon Material.

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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.