



Designation: D4 – 86 (Reapproved 2024)

Standard Test Method for Bitumen Content¹

This standard is issued under the fixed designation D4; 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.

Although this test method was withdrawn by the Society in June 1966 at the request of Committee D04, the Committee on Standards has approved its reinstatement under the jurisdiction of Committee D08 on the basis that Procedure No. 2 still applies to their interest. Procedure No. 1 has been replaced by Method D2042, Test for Solubility of Asphalt Materials in Trichloroethylene.

1. Scope

1.1 This test method covers the determination of bitumen content in materials containing at least 25 % bitumen. Bitumen content may usually be expeditiously and accurately determined by Procedure No. 1, Section 7. However, some bituminous materials containing finely divided mineral matter may clog the filter or the mineral residue may not be easily retained, in which cases Procedure No. 2, Section 8, shall be followed.

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

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, health, and environmental practices and determine the applicability and regulatory limitations prior to use.* For specific precautionary information, see Section 4.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D370 Practice for Dehydration of Oil-Type Preservatives

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

¹ This test method is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.03 on Surfacing and Bituminous Materials for Membrane Waterproofing and Built-up Roofing.

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

3. Apparatus, Reagents, and Materials

3.1 *Filtering Crucible*, porcelain, high-form, 25 to 40 mL capacity, with fine-porosity bottom, 7 μm maximum porosity.

NOTE 1—Selas grade 01, size FC 30 or FC 40, or equivalent. Available from various laboratory supply houses.

3.2 *Celite Analytical Filter Aid (CAFA)*, dried to constant mass at 105 °C and stored in a tightly stoppered container.

NOTE 2—Use Celite 211 or Celite 505.

3.3 *Beakers*—One 30 mL beaker, Griffin low-form, and one 150 mL beaker, Griffin low-form.

3.4 *Carbon Disulfide*, cp.

NOTE 3—For filled asphaltic materials, trichloroethylene may be directly substituted for carbon disulfide if desired. However, carbon disulfide shall be used in referee testing.

3.5 *Filtering Flask*, with crucible adapter.

3.6 *Drying Oven*.

3.7 *Bunsen Burner or Muffle Furnace*.

3.8 *Suction Pump*.

3.9 *Analytical Balance*.

3.10 *Desiccator*.

3.11 *Evaporating Dish*.

3.12 *Watch Glasses*.

4. Safety Precautions

4.1 Carbon disulfide is extremely flammable. The vapor will often ignite spontaneously on contact with a hot surface such as a hot plate, oven, or radiator. When using this solvent, be sure that the filtration is conducted under a hood and well away from flame or other sources of heat. Before placing crucibles or other containers in the oven, all traces of carbon disulfide should be removed (as indicated by the disappearance of all odor). Otherwise, the vapors will ignite. Carbon disulfide is also very irritating to the skin and direct contact should be avoided.