



Designation: D 561 – 82 (Reapproved 1996)^{ε1}

AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Carbon Black Pigment for Paint¹

This standard is issued under the fixed designation D 561; 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.

^{ε1} NOTE—Keywords were added editorially in May 1996.

1. Scope

1.1 This specification covers the pigment commercially known as carbon black, which is suitable for use in the manufacture of protective or decorative coatings.

2. Referenced Documents

2.1 ASTM Standards:

- D 305 Test Method for Solvent-Extractable Material in Black Pigments²
- D 387 Test Method for Color and Strength of Color Pigments with a Mechanical Muller³
- D 1506 Test Method for Carbon Black—Ash Content⁴
- D 1509 Test Method for Carbon Black—Heating Loss⁴
- D 1514 Test Method for Carbon Black—Sieve Residue⁴

3. Composition and Properties

3.1 The pigment shall be made by burning natural gas (Type I) or oil (Type II) in such a manner as to form a deposit of carbon. It shall be free of adulterants and be in the form of powder or dustless pellets and shall conform to the requirements specified in Table 1.

3.2 The mass color and character of the tint and tinting strength formed by a mixture with a white pigment shall be within mutually agreed upon limits of a standard acceptable to both the purchaser and the seller when tested in accordance with Test Method D 387.

NOTE 1—For the tinting strength test a ratio of 100 parts of white to 1 part of black is usually suitable.

4. Sampling

4.1 Two samples shall be taken at random from different

¹ This specification is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications, and is the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

Current edition approved Oct. 29, 1982. Published February 1983. Originally published as D561 – 40. Last previous edition D561 – 77.

² Annual Book of ASTM Standards, Vol 06.03.

³ Annual Book of ASTM Standards, Vol 06.01.

⁴ Annual Book of ASTM Standards, Vol 09.01.

TABLE 1 Composition and Properties

	Type I	Type II	ASTM Test Method
Ash, max, %	0.2 ^A	1.0 ^A	D 1506
Acetone extract, max, %	0.5 ^A	1.0 ^A	D 305
Moisture (loss at 105°C) max, %	8.0 ^B	8.0 ^B	D 1509
Coarse particles (total residue retained on 45- μ m (No. 325) screen, max), %	0.2	0.2	D 1514
Organic dyes	none	none	D 50

^A When mutually agreed upon by the purchaser and the seller, higher maximum ash and acetone extract values may be allowed if final product requirements necessitate the use of additional treating agents.

^B It may be necessary for the purchaser and the seller to agree upon a higher maximum moisture content in high-color black. High-color blacks are very hygroscopic and should be protected against moisture during storage.

packages from each lot, batch, day's pack, or other unit of production in a shipment. When no markings distinguishing between units of production appear, samples shall be taken from different packages in the ratio of two samples for each 10 000 lb (5000 kg), except that for shipments of less than 10 000 lb two samples shall be taken.

4.2 At the option of the purchaser, the samples may be tested separately or, after blending the samples from the same production unit in equal quantities, tested as a composite sample.

5. Test Methods

5.1 Tests shall be conducted in accordance with the following ASTM test methods. Test procedures not covered by ASTM test methods shall be mutually agreed upon between the purchaser and the seller.

5.1.1 *Solvent Extractable Material*—Test Method D 305.

5.1.2 *Color and Tinting Strength*—Test Method D 387.

5.1.3 *Carbon Black—Ash Content*—Test Method D 1506.

5.1.4 *Heating Loss*—Test Method D 1509.

5.1.5 *Sieve Residue*—Test Method D 1514.

6. Keywords

6.1 carbon black; natural gas; oil; pigment