



Standard Specification for Carbon Black Pigment for Paint¹

This standard is issued under the fixed designation D561; 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.

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.

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

2. Referenced Documents

2.1 *ASTM Standards*:²

[D50 Test Methods for Chemical Analysis of Yellow, Orange, Red, and Brown Pigments Containing Iron and Manganese](#)

[D305 Test Method for Solvent-Extractable Material in Black Pigments](#)

[D387 Test Method for Color and Strength of Chromatic Pigments with a Mechanical Muller](#)

[D1506 Test Methods for Carbon Black—Ash Content](#)

[D1509 Test Methods for Carbon Black—Heating Loss](#)

[D1514 Test Method for Carbon Black—Sieve Residue](#)

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

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

Current edition approved Dec. 1, 2014. Published December 2014. Originally approved in 1940. Last previous edition approved in 2008 as D561 – 82 (2008). DOI: 10.1520/D0561-82R14.

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.

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 [D387](#).

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 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 5000 kg (10 000 lb), 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 [D305](#).

5.1.2 *Color and Tinting Strength*—Test Method [D387](#).

5.1.3 *Carbon Black—Ash Content*—Test Methods [D1506](#).

5.1.4 *Heating Loss*—Test Methods [D1509](#).

5.1.5 *Sieve Residue*—Test Method [D1514](#).

6. Keywords

6.1 carbon black; natural gas; oil; pigment

TABLE 1 Composition and Properties

	Type I	Type II	ASTM Test Method
Ash, max, %	0.2 ^A	1.0 ^A	D1506
Acetone extract, max, %	0.5 ^A	1.0 ^A	D305 D305
Moisture (loss at 105°C) max, %	8.0 ^B	8.0 ^B	D1509
Coarse particles (total residue retained on 45-µm (No. 325) screen, max), %	0.2	0.2	D1514
Organic dyes	none	none	D50

^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.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; http://www.copyright.com/