



Designation: C 150 – 02a

Standard Specification for Portland Cement¹

This standard is issued under the fixed designation C 150; 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 Department of Defense.

1. Scope

1.1 This specification covers eight types of portland cement, as follows (see Note 2):

1.1.1 *Type I*—For use when the special properties specified for any other type are not required.

1.1.2 *Type IA*—Air-entraining cement for the same uses as Type I, where air-entrainment is desired.

1.1.3 *Type II*—For general use, more especially when moderate sulfate resistance or moderate heat of hydration is desired.

1.1.4 *Type IIA*—Air-entraining cement for the same uses as Type II, where air-entrainment is desired.

1.1.5 *Type III*—For use when high early strength is desired.

1.1.6 *Type IIIA*—Air-entraining cement for the same use as Type III, where air-entrainment is desired.

1.1.7 *Type IV*—For use when a low heat of hydration is desired.

1.1.8 *Type V*—For use when high sulfate resistance is desired.

NOTE 1—Some cements are designated with a combined type classification, such as Type I/II, indicating that the cement meets the requirements of the indicated types and is being offered as suitable for use when either type is desired.

1.2 When both SI and inch-pound units are present, the SI units are the standard. The inch-pound units are approximations listed for information only.

1.3 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:

C 33 Specification for Concrete Aggregates²

C 109/C 109M Test Method for Compressive Strength of

Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)³

C 114 Test Methods for Chemical Analysis of Hydraulic Cement³

C 115 Test Method for Fineness of Portland Cement by the Turbidimeter³

C 151 Test Method for Autoclave Expansion of Portland Cement³

C 183 Practice for Sampling and the Amount of Testing of Hydraulic Cement³

C 185 Test Method for Air Content of Hydraulic Cement Mortar³

C 186 Test Method for Heat of Hydration of Hydraulic Cement³

C 191 Test Method for Time of Setting of Hydraulic Cement by Vicat Needle³

C 204 Test Method for Fineness of Hydraulic Cement by Air Permeability Apparatus³

C 219 Terminology Relating to Hydraulic Cement³

C 226 Specification for Air-Entraining Additions for Use in the Manufacture of Air-Entraining Hydraulic Cement³

C 266 Test Method for Time of Setting of Hydraulic Cement Paste by Gillmore Needles³

C 451 Test Method for Early Stiffening of Hydraulic Cement (Paste Method)³

C 452 Test Method for Potential Expansion of Portland-Cement Mortars Exposed to Sulfate³

C 465 Specification for Processing Additions for Use in the Manufacture of Hydraulic Cements³

C 563 Test Method for Optimum SO₃ in Hydraulic Cement Using 24-h Compressive Strength³

C 1038 Test Method for Expansion of Hydraulic Cement Mortar Bars Stored in Water³

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁴

3. Terminology

3.1 *Definitions*—See Terminology C 219.

¹ This specification is under the jurisdiction of ASTM Committee C01 on Cement and is the direct responsibility of Subcommittee C01.10 on Hydraulic Cements for General Concrete Construction.

Current edition approved Aug. 10, 2002. Published October 2002. Originally published as C 150 – 40 T. Last previous edition C 150 – 02.

² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.01.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.