Designation: C778 – 21

Standard Specification for Standard Sand[1]

This standard is issued under the fixed designation C778; 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.

1. Scope*

1.1 This specification covers standard sand for use in the testing of hydraulic cements.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 Values in SI units shall be obtained by measurement in SI units or by appropriate conversion, using the Rules for Conversion and Rounding given in IEEE/ASTM SI 10, of measurements made in other units.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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]

C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens)

C127 Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

C150 Specification for Portland Cement

C185 Test Method for Air Content of Hydraulic Cement Mortar

C219 Terminology Relating to Hydraulic and Other Inorganic Cements

C595 Specification for Blended Hydraulic Cements

C702 Practice for Reducing Samples of Aggregate to Testing Size

C1005 Specification for Reference Masses and Devices for Determining Mass and Volume for Use in Physical Testing of Hydraulic Cements

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

IEEE/ASTM SI 10 Standard for Use of the International System of Units (SI): The Modern Metric System

3. Terminology

3.1 For definitions of terms used in this test method, refer to Terminology C219.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *20-30 sand, n*—standard sand, predominantly graded to pass a 850-µm (No. 20) sieve and be retained on a 600-µm (No. 30) sieve.

3.2.2 *graded sand, n*—standard sand, predominantly graded between the 600-µm (No. 30) sieve and the 150-µm (No. 100) sieve.

3.2.3 *standard sand, n*—silica sand, composed almost entirely of naturally rounded grains of nearly pure quartz, used for preparing mortars in the testing of hydraulic cements.

4. Requirements

4.1 Sand shall meet the requirements of Table 1 with respect to grading, source of sand, and absence of undesirable air entraining characteristics.

METHODS OF SAMPLING AND TESTING STANDARD SANDS

5. Apparatus

5.1 *Sieves*—The sieves shall be standard 203-mm (8-in.) diameter, full-height, wire-cloth sieves, conforming to the requirements of Specification E11, and of the following sizes:

[1] This specification is under the jurisdiction of ASTM Committee C01 on Cement and is the direct responsibility of Subcommittee C01.95 on Coordination of Standards.

Current edition approved Dec. 1, 2021. Published December 2021. Originally approved in 1974. Last previous edition approved in 20137 as C778 – 17. DOI: 10.1520/C0778-21.

[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.

***A Summary of Changes section appears at the end of this standard**