



Designation: C1761/C1761M – 17

Standard Specification for Lightweight Aggregate for Internal Curing of Concrete¹

This standard is issued under the fixed designation C1761/C1761M; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope*

1.1 This specification covers lightweight aggregate intended to provide water for internal curing of concrete. It includes test methods for determining the absorption and desorption properties of lightweight aggregate.

NOTE 1—Internal curing provides an additional source of water to sustain hydration and substantially reduce the early-age autogenous shrinkage and self-desiccation that can be significant contributors to early-age cracking. **Appendix X1** provides guidance on calculating the quantity of lightweight aggregate for internal curing.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance. Some values have only SI units because the inch-pound equivalents are not used in practice.

NOTE 2—Sieve size is identified by its standard designation in Specification **E11**. The alternative designation given in parentheses is for information only and does not represent a different standard sieve size.

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

1.4 *This specification 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 and health 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.*

¹ This specification is under the jurisdiction of ASTM Committee **C09** on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee **C09.21** on Lightweight Aggregates and Concrete.

Current edition approved June 15, 2017. Published July 2017. Originally approved in 2012. Last previous edition approved in 2015 as C1761/C1761M – 15. DOI: 10.1520/C1761_C1761M-17.

2. Referenced Documents

2.1 ASTM Standards:²

- C29/C29M** Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
- C40/C40M** Test Method for Organic Impurities in Fine Aggregates for Concrete
- C87/C87M** Test Method for Effect of Organic Impurities in Fine Aggregate on Strength of Mortar
- C114** Test Methods for Chemical Analysis of Hydraulic Cement
- C125** Terminology Relating to Concrete and Concrete Aggregates
- C128** Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate
- C136/C136M** Test Method for Sieve Analysis of Fine and Coarse Aggregates
- C142/C142M** Test Method for Clay Lumps and Friable Particles in Aggregates
- C330/C330M** Specification for Lightweight Aggregates for Structural Concrete
- C641** Test Method for Iron Staining Materials in Lightweight Concrete Aggregates
- C702/C702M** Practice for Reducing Samples of Aggregate to Testing Size
- C1498** Test Method for Hygroscopic Sorption Isotherms of Building Materials
- C1608** Test Method for Chemical Shrinkage of Hydraulic Cement Paste
- C1698** Test Method for Autogenous Strain of Cement Paste and Mortar
- D75/D75M** Practice for Sampling Aggregates
- E11** Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this practice, refer to Terminology **C125**.

3.2 Definitions of Terms Specific to This Standard:

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