



Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile¹

This standard is issued under the fixed designation C4; 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 establishes the criteria for acceptance, prior to installation, of drain tile and perforated drain tile to be used for underdrainage, filter fields, leaching fields, and similar subdrainage installations.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 The following safety hazards caveat pertains only to the Test Methods portion of this specification: *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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—Attention is called to Test Methods C301 and Terminology C896.

2. Referenced Documents

2.1 *ASTM Standards*:²

C301 Test Methods for Vitrified Clay Pipe

C896 Terminology Relating to Clay Products

3. Terminology

3.1 *Definitions*:

3.1.1 *Clay, fire clay, shale, and surface clay* are as defined in Terminology C896.

3.1.2 Within this specification, the terms *tile, drain tile, and clay drain tile* are synonyms.

¹ This specification is under the jurisdiction of ASTM Committee C04 on Vitrified Clay Pipe and is the direct responsibility of Subcommittee C04.20 on Methods of Test and Specifications.

Current edition approved Sept. 1, 2014. Published September 2014. Originally approved in 1914. Last previous edition approved in 2009 as C4 – 04 (2009). DOI: 10.1520/C0004-04R14.

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.

4. Classification

4.1 Four classes of clay drain tile are specified:

4.1.1 Standard.

4.1.2 Extra Quality.

4.1.3 Heavy Duty.

4.1.4 Extra Strength.

4.2 Drain tile of a higher strength classification than that specified by the purchaser may be furnished by the seller, provided the substituted drain tile meets the physical requirements of the class specified.

5. Materials and Manufacture

5.1 Drain tile shall be manufactured from clay, fire clay, shale, surface clay, or a combination of these materials, that, when formed into tile and fired to suitable temperatures, yields a product that conforms to this specification.

6. Physical Properties

6.1 Drain tile shall meet the physical test requirements for the class, as specified in Table 1.

6.2 The maximum water absorption (5-h boiling) shall be as follows:

	Average, %	Individual, %
Standard	13	16
Extra Quality	11	13
Heavy Duty	11	13
Extra Strength	11	13

6.3 The requirements for water absorption (5-h boiling) shall be waived, provided that test specimens meet the requirements of the freezing and thawing test, Section 13, of this specification

7. Sizes and Perforations

7.1 The size of drain tile shall be designated by inside diameter. Not all sizes and strengths may be available from all manufacturers.

7.2 The minimum length of drain tile smaller than 10 in. (255 mm) diameter shall be approximately 12 in. (305 mm).

7.3 The length of drain tile 10 in. (255 mm) through 30 in. (760 mm) diameter shall be not less than 1½ times their diameter.