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Standard Specification for Elastomeric Seals for Joining Concrete Structures¹

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1. Scope

1.1 This specification covers the physical property requirements of elastomeric seals (gaskets) used to seal the joints of precast concrete structures conforming to Specifications C14, C14M, C118, C118M, C361, C361M, C443, C443M, C505, or C505M used in gravity and low head pressure applications.

1.2 Requirements are given for natural or synthetic rubber gaskets, or a combination of both.

1.3 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.

1.4 The following precautionary caveat pertains only to the test method portion, Section 8, 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.*

2. Referenced Documents

2.1 ASTM Standards:²

- C14 Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
- C14M Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe (Metric)
- C118 Specification for Concrete Pipe for Irrigation or Drainage
- C118M Specification for Concrete Pipe for Irrigation or Drainage (Metric)
- C361 Specification for Reinforced Concrete Low-Head Pressure Pipe
- C361M Specification for Reinforced Concrete Low-Head

Pressure Pipe (Metric)

- C443 Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
- C443M Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets (Metric)
- C497 Test Methods for Concrete Pipe, Manhole Sections, or Tile
- C497M Test Methods for Concrete Pipe, Manhole Sections, or Tile [Metric]
- C505 Specification for Nonreinforced Concrete Irrigation Pipe with Rubber Gasket Joints
- C505M Specification for Nonreinforced Concrete Irrigation Pipe With Rubber Gasket Joints (Metric)
- C822 Terminology Relating to Concrete Pipe and Related Products
- D395 Test Methods for Rubber Property—Compression Set
- D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
- D471 Test Method for Rubber Property—Effect of Liquids
- D573 Test Method for Rubber—Deterioration in an Air Oven
- D1149 Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment
- D1566 Terminology Relating to Rubber
- D2240 Test Method for Rubber Property—Durometer Hardness
- D2527 Specification for Rubber Seals—Splice Strength

3. Terminology

3.1 *Definitions*—For definitions of terms relating to concrete pipe, see Terminology C822. For definitions relating to rubber or elastomers, see Terminology D1566.

4. Classification

4.1 In order to provide for the various types of seals and requirements, multiple classifications have been established.

4.1.1 Class A is generally intended to cover seals in low head pressure piping applications not exceeding 125 ft (375 kPa) where premium physical properties are required.

4.1.2 Class B is generally intended for Class A and Class E applications that also require special oil resistant performance.

4.1.3 Class C is generally intended to cover seals in applications not exceeding 30 ft (9.14 m) of hydrostatic head.

¹ This specification is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.08 on Joints for Precast Concrete Structures.

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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.