



## Standard Specification for Flexible Transition Couplings for Underground Piping Systems<sup>1</sup>

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### 1. Scope

1.1 These specifications describe the properties of devices or assemblies suitable for use as flexible transition couplings, hereinafter referred to as couplings, for underground drainage and sewer piping systems.

1.2 Couplings that may include bushings or inserts and that meet the requirements of this standard are suitable for joining plain end pipe or fittings. The pipe to be joined shall be of similar or dissimilar materials, size, or both.

1.3 The values stated in inch-pound units shall be regarded as standard.

1.4 The ASTM standards referenced herein shall be considered mandatory.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- C 717 Terminology of Building Seals and Sealants<sup>2</sup>
- D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension<sup>3</sup>
- D 471 Test Method for Rubber Property—Effect of Liquids<sup>3</sup>
- D 518 Test Method for Rubber Deterioration—Surface Cracking<sup>3</sup>
- D 543 Practice for Evaluating Resistance of Plastics to Chemical Reagents<sup>4</sup>
- D 573 Test Method for Rubber—Deterioration in an Air Oven<sup>3</sup>
- D 638 Test Method for Tensile Properties of Plastics<sup>4</sup>
- D 1149 Test Method for Rubber Deterioration Surface Ozone Cracking in a Chamber<sup>3</sup>
- D 2240 Test Method for Rubber Property—Durometer Hardness<sup>3</sup>
- D 3045 Practice for Heat Aging of Plastics Without Load<sup>5</sup>

### 3. Terminology

3.1 *Definitions*—For definitions of terms used in this stan-

dard, see Terminology C 717.

#### 3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *center stop*—an integral part of the gasket centered on its axial length intended to limit the insertion depth of the pipe to be coupled.

3.2.2 *fitting*—parts of a pipeline other than the straight pipe couplings, or valves.

3.2.3 *flexible transition couplings*—devices used to form a leakproof joint between sections of plain end pipe or fittings of the same or different materials, of the same or different size, or any combination of materials or pipe sizes.

3.2.4 *free torque*—the torque value expressed in lbf·in./Nm when the clamp is tightened four revolutions of the screw nut; while in the free state, this value does not include any breakaway effects due to staking or passage of the band ends beyond the screw heads.

3.2.5 *inserts*—a bushing or ring placed into the coupling socket to accommodate pipe materials of differing outside diameters.

3.2.6 *joint*—the completed assembly of parts consisting of the flexible transition coupling and the joined pipes, or fittings, or both.

3.2.7 *lot*—a specific quantity of similar material or collection of similar units from a common source; the quantity offered for inspection and acceptance at any one time. A lot might comprise a shipment, batch, or similar quantity.

3.2.8 *plain end pipe*—any pipe that does not include any bell, hub, threaded area, or other means of joining.

3.2.9 *shear ring*—an interior or exterior element which is used to span the distance between the pipe ends within a coupling so as to provide increased resistance to axial displacement.

### 4. Classification

4.1 The couplings shall be permitted to have a center stop. The components shall be designed so that the elastomeric material is compressed to form a hydrostatic seal when the joint is assembled. The couplings shall be of the types described in 4.1.1-4.1.3.

4.1.1 *Type A*—A coupling consisting of an elastomeric sleeve incorporating corrosion resistance tension bands and a tightening mechanism. Couplings shall be fabricated with or without shear rings, and with or without a center stop.

4.1.2 *Type B*—A coupling consisting of an elastomeric or

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.07.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 09.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 08.01.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 08.02.