



Designation: C 877 – 00

Standard Specification for External Sealing Bands for Noncircular Concrete Sewer, Storm Drain, and Culvert Pipe¹

This standard is issued under the fixed designation C 877; 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.

1. Scope

1.1 This specification covers external sealing bands to be used in conjunction with noncircular concrete pipe as defined in Terminology C 822 and conforming to Specifications C 506, C 507, C 789, and C 850.

1.1.1 Type I, Rubber and Mastic Bands.

1.1.2 Type II, Plastic Film and Mesh Reinforced Mastic Bands.

1.1.3 Type III, Chemically Bonded Adhesive Butyl Bands.

1.2 A complete metric companion to Specification C 877 has been developed—C 877M; therefore, no metric equivalents are presented in this specification.

NOTE 1—This specification covers only the design and material of the sealing bands. Sealing bands covered by this specification should be adequate, when properly installed, for external hydrostatic pressures up to 13 psi, (30 ft) without leakage. The amount of infiltration or exfiltration flow in an installed pipeline is dependent upon many factors other than the sealing bands; allowable quantities and suitable testing of the installed pipeline and system must be covered by other specifications.

2. Referenced Documents

2.1 ASTM Standards:

C 506 Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe²

C 507 Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe²

C 681 Test Method for Volatility of Oil- and Resin-Based, Knife-Grade, Channel Glazing Compounds³

C 789 Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers²

C 822 Terminology Relating to Concrete Pipe and Related Products²

C 850 Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers with Less Than 2 ft of Cover Subjected to Highway Loadings²

C 990 Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants²

¹ This specification is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.08 on Rubber Gaskets.

Current edition approved April 10, 2000. Published June 2000. Originally published as C 877–77. Last previous edition C 877–94.

² Annual Book of ASTM Standards, Vol 04.05.

³ Annual Book of ASTM Standards, Vol 04.07.

D 5 Test Method for Penetration of Bituminous Materials⁴

D 36 Test Method for Softening Point of Bitumen (Ring and Ball Apparatus)⁵

D 217 Test Method for Cone Penetration of Lubricating Grease⁶

D 395 Test Methods for Rubber Property—Compression Set⁷

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension⁷

D 471 Test Method for Rubber Property—Effect of Liquids⁷

D 570 Test Method for Water Absorption of Plastics⁸

D 573 Test Method for Rubber—Deterioration in an Air Oven⁷

D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers⁷

D 882 Test Methods for Tensile Properties of Thin Plastic Sheet⁸

D 1171 Test Method for Rubber Deterioration—Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens)⁷

D 1278 Test Methods for Rubber from Natural Sources—Chemical Analysis⁷

D 1682 Test Methods for Breaking Load and Elongation of Textile Fabrics⁹

D 1963 Test Method for Specific Gravity of Drying Oils, Varnishes, Resins, and Related Materials at 25/25 C¹⁰

D 2202 Test Method for Slump of Sealants³

D 2240 Test Method for Rubber Property—Durometer Hardness⁷

D 3407 Methods of Testing for Joint Sealants, Hot-Poured, for Concrete and Asphalt Pavements⁴

D 3953 Specification for Strapping, Flat Steel and Seals¹¹

3. Terminology

3.1 *Definitions*—For definitions of terms relating to concrete pipe, see Terminology C 822.

⁴ Annual Book of ASTM Standards, Vol 04.03.

⁵ Annual Book of ASTM Standards, Vol 04.04.

⁶ Annual Book of ASTM Standards, Vol 05.01.

⁷ Annual Book of ASTM Standards, Vol 09.01.

⁸ Annual Book of ASTM Standards, Vol 08.01.

⁹ Annual Book of ASTM Standards, Vol 07.01.

¹⁰ Annual Book of ASTM Standards, Vol 06.03.

¹¹ Annual Book of ASTM Standards, Vol 15.09.