



Designation: C1440 – 21

Standard Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems¹

This standard is issued under the fixed designation C1440; 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 thermoplastic elastomeric (TPE) gasket materials for preformed elastomeric gaskets used in shielded and non-shielded mechanical couplings. These couplings are used in gravity flow drain, waste, and vent (DWV), sewer, sanitary, and storm plumbing systems. They include couplings to join similar and dissimilar piping sizes and material.

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 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

A644 Terminology Relating to Iron Castings

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

¹ This specification is under the jurisdiction of ASTM Committee A04 on Iron Castings and is the direct responsibility of Subcommittee A04.75 on Gaskets and Coupling for Plumbing and Sewer Piping.

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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.

D573 Test Method for Rubber—Deterioration in an Air Oven

D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

D1149 Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment

D1415 Test Method for Rubber Property—International Hardness

D2240 Test Method for Rubber Property—Durometer Hardness

3. Terminology

3.1 *Definitions*—Refer to Terminology A644 for definitions of the following terms used in this specification: *elastomer*, *elastomeric*, *elongation*, *gasket*, *hardness*, *preformed gasket* (see *gasket*), *thermoplastic elastomer*.

4. Materials and Manufacture

4.1 Gaskets shall be made of virgin thermoplastic elastomeric compound, where the primary elastomer is a thermoplastic vulcanizate containing only clean, reworked thermoplastic elastomer material from the manufacturer's own production of the same compound.

4.2 Where splices are made in the gasket, the strength of the splice shall be such that the gasket will withstand the stretch test described in 8.9 with no visible separation or peeling.

4.3 Many thermoplastic elastomeric materials (TPEs) are temperature sensitive. Designed operating temperature range for the 90 Shore A TPE materials is 0 to 130 °F (–18 to 55 °C). These materials are not designed or intended for prolonged operation outside this range.

5. Physical Properties

5.1 Gaskets representative of the manufacturer's production shall be selected as specified in Section 7 and shall conform to the requirements for physical properties listed in Table 1 when tested in accordance with the methods specified in Section 8.

6. Workmanship, Finish, and Appearance

6.1 The surface of the gasket shall be smooth and free of pitting, cracks, blisters, air marks, and any other imperfections