



Designation: C 1440 – 03

# Standard Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems<sup>1</sup>

This standard is issued under the fixed designation C 1440; 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 ( $\epsilon$ ) 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 metric or inch/pound units shall be regarded separately as normative for this specification. The values in each system are not exact equivalents; therefore, each system shall be used independently without combining values.

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

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

- C 717 Terminology of Building Seals and Sealants
- C 395 Test Methods for Rubber Property-Compression Set
- D 412 Test Methods for Rubber Properties in Tension
- D 471 Test Method for Rubber Property-Effect of Liquids
- D 573 Test Method for Rubber-Deterioration in an Air Oven
- D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- D 1149 Test Method for Rubber Deterioration-Surface Ozone Cracking in a Chamber
- D 1415 Test Method for Rubber Property-International Hardness

D 2240 Test Method for Rubber Property-Durometer Hardness

D 5964 Standard Practice for Rubber IRM 902 and IRM 903 Replacement Oils for ASTM No. 2 and ASTM No. 3 Oils

## 3. Terminology

3.1 *Definitions*—Refer to Terminology C 717 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 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 (TPE) are temperature sensitive. Designed operating temperature range for the 87 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 that will affect its behavior in service. The body of the gasket shall be free of porosity and air pockets.

6.2 Neither the flash thickness nor the flash extension shall exceed 1/32 in. (0.8 mm), at any point on the ring.

<sup>1</sup> 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 Couplings for Plumbing and Sewer Piping.

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<sup>2</sup> 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.