



Designation: C1440 – 08(Reapproved 2013)

# 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 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 ( $\epsilon$ ) 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 either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

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

- 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
- D573 Test Method for Rubber—Deterioration in an Air Oven
- D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

<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 Coupling 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.

- 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
- D5964 Practice for Rubber IRM 901, IRM 902, and IRM 903 Replacement Oils for ASTM No. 1, ASTM No. 2, and ASTM No. 3 Oils

## 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 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.