



Standard Specification for Poly (Vinyl Chloride) (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems¹

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1. Scope*

1.1 This specification describes material and physical requirements for nonrigid poly (vinyl chloride) (PVC) preformed molded and spliced gaskets used in 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 piping material.

1.2 Recycled materials may be used in this product in accordance with the requirements in Section 4.

~~1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are given for information only.~~

1.3 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.

~~NOTE—There are no ISO standards covering the primary subject matter of this specification. 1—There is no known ISO equivalent to this standard.~~

1.4 The following safety hazards caveat pertains only to the test method portion, Section 7, of this specification: *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:*²

C 717 Terminology of Building Seals and Sealants

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

D 471 Test Method for Rubber Property—Effect of Liquids

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

D 618 ~~Practice for Conditioning Plastics and Electrical Insulating Materials for Testing~~ Practice for Conditioning Plastics for Testing

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

D 746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

D 883 Terminology Relating to Plastics

~~D 1149 Test Method for Rubber Deterioration—Surface Ozone Cracking in a Chamber~~ Test Methods for Rubber Deterioration Cracking in an Ozone Controlled Environment

D 1203 Test Methods for Volatile Loss from From Plastics Using Activated Carbon Methods

D 1600 Terminology for Abbreviated Terms Relating to Plastics ~~D 1898 Practice for Sampling of Plastics~~

D 2240 Test Method for Rubber Property—Durometer Hardness

D 2287 Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds

D 3892 Practice for Packaging/Packing of Plastics

~~D 5033 Guide for the Development of Standards Relating to the Proper Use of Recycled Plastics~~ 4968 Guide for Annual Review of Test Methods and Specifications for Plastics

~~D 6147 Test Method for Vulcanized Rubber and Thermoplastic Elastomer—Determination of Force Decay (Stress Relaxation) in Compression~~ Test Method for Vulcanized Rubber and Thermoplastic Elastomer Determination of Force Decay (Stress Relaxation) in Compression

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is under the direct responsibility of Subcommittee D20.24 on Plastic Building Products.

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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.

*A Summary of Changes section appears at the end of this standard.

3. Terminology

3.1 *General*—Definitions are in accordance with Terminologies C 717, D 883 and D 1600, ~~D883 and D1600~~, unless otherwise indicated.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *flash*—the excess material protruding from the surface of a molded article at the mold junction.

4. Materials and Manufacture

4.1 This specification covers preformed gaskets made principally from virgin nonrigid PVC molding compound conforming to the requirements of Specification D 2287 for general purpose, electrical requirements excluded class PVC 30267, 40366 or 50465. Refer to Table 1 in Specification D 2287.

4.1.1 This class compound has the following material property requirements:

TABLE 1 Material Property Requirements

Properties Tested	ASTM Method	Requirement	Requirement	Requirement
Durometer hardness, A scale	Test Method D 2240	55 to 64	65 to 74	75 to 84
Tensile strength, min, psi (MPa)	Test Method D 412	1000 (8.9)	1285 (8.8)	1575 (10.8)
Volatile loss at 105°C, max, %	Test Method D 1203	6.0	6.0	6.0
Brittleness temperature, max	Test Method D 746	−40°C	−30°C	−20°C
Heat Aging :	Test Method D 573			
Hardness increase, max, pts. Shore A		10	10	10
Loss in tensile strength, max, %		25	25	25
Loss in elongation, max, %		35	35	35
Water Absorption, Weight increase,max, %	Test Method D 471	20	20	20
Ozone Resistance, No Cracks at 2 times Magnification	Test Method D 1149	No Cracks	No Cracks	No Cracks
Oil Immersion in IRM 903 Oil:	Test Method D 471			
Max volume increase, %		10	10	10
Max volume decrease, %		50	50	50
Stress Relaxation, Min. % Force Retention	Test Method D 6147	30	30	30

4.2 The molding compound shall have a minimum percent elongation by Test Method D 412 of 250 %.

4.3 The molding compound shall have a minimum tear strength by Test Method D 624 of 150 lb/in. (268.5 N/cm).

~~4.4 Recycled materials, as defined in Guide D5033, may be used in this product if all the requirements in Sections 4.4 Recycled materials, as defined in Guide D 7209, shall meet all the requirements in Sections 4 and 5 are met by the recycle material when used in this product.~~

4.5 Qualification testing for material physical requirements shall be conducted by the material manufacturer on the specific compound supplied and not on the molded gaskets, since the physical properties do not change on molding.

NOTE 2—The material manufacturer shall reassess the need for requalification of the specific compound supplied any time the compound formulation is changed or the PVC resin or any compound ingredient is changed.

4.6 The compound manufacturer shall certify in writing to the gasket manufacturer that the compound supplied meets all the requirements of this specification.

5. Requirements

5.1 *Dimensions*—Gaskets shall conform to the dimensions and dimensional tolerances as agreed upon between the supplier and the purchaser. All dimensions shall be compatible with the dimensions and tolerances of the specific piping materials and sizes to which it is designed to join.