



Designation: D1667 – 17

Standard Specification for Flexible Cellular Materials—Poly (Vinyl Chloride) Foam (Closed-Cell)¹

This standard is issued under the fixed designation D1667; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers flexible closed-cell or non-interconnecting cellular products, the elastomer content of which is predominantly poly(vinyl chloride) or copolymers thereof.

1.2 In the case of conflict between the provisions of this specification and those of detailed specifications or methods of test for a particular product, the latter shall take precedence.

1.3 Reference to the methods for testing closed-cell poly(vinyl chloride) contained herein shall specifically state the particular test or tests desired and not refer to these methods of test as a whole.

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

1.5 The following precautionary statement pertains to the test method portions only 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.*

NOTE 1—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

D395 Test Methods for Rubber Property—Compression Set

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.22 on Cellular Materials - Plastics and Elastomers.

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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

D1056 Specification for Flexible Cellular Materials—Sponge or Expanded Rubber

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *closed cell*—an expanded structure consisting of a multitude of individual, non-connecting, gas-tight cells.

3.1.2 *flexible cellular material*—a cellular organic polymeric material which will not rupture when a specimen 200 by 25 by 25 mm (8 by 1 by 1 in.) is bent around at 25-mm (1-in.) diameter mandrel at a uniform rate of one lap in 5 s at a temperature between 18 and 29°C (65 and 85°F).

3.1.3 *surface skin*—the smooth surface on the material formed during manufacture by contact with the molds, cover plate, or air.

3.1.4 *V*—the ASTM symbol designating nonrigid vinyl cellular plastics.

3.1.5 *vinyl or PVC*—these terms refer to poly(vinyl chloride) or copolymers thereof.

4. Materials and Manufacture

4.1 Closed-cell vinyl is produced in sheet, strip, molded, or simple specific shapes.

5. Grades of Closed-Cell Vinyl or PVC-Symbol VE

5.1 Closed-cell vinyl shall be designated by two symbol letters VE, indicating V for vinyl and E for closed cell. The grade shall be designated by two digits, the first of which designates closed cell, and the second of which indicates the degree of firmness, the softer grades being identified with the lower numbers and the firmer grades with the higher numbers.

NOTE 2—*Examples*—VE-41 is a closed cell (expanded) vinyl of soft grade (see Table 1).

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