Designation: ~~D4216 – 06~~ D4216 – 13

Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly(Vinyl Chloride) (CPVC) Building Products Compounds[1]

This standard is issued under the fixed designation D4216; 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 Department of Defense.

1. Scope*

1.1 This specification covers rigid plastic PVC and CPVC Exterior compounds composed of poly(vinyl chloride), chlorinated poly(vinyl chloride), vinyl chloride copolymers or vinyl chloride blends, and the necessary compound ingredients intended for use in making building products. The compounding ingredients ~~may~~ are permitted to consist of lubricants, stabilizers, nonpoly(vinyl chloride) resin modifiers, colorants or pigments, or both, and inorganic fillers.

1.2 This specification is intended to provide classification of base compounds used to manufacture PVC and CPVC exterior building products. ~~Physical properties may be determined~~ It is acceptable to determine physical properties by evaluating compounds of any color.

NOTE 1—Two year weathering studies, without specific requirements for color change and physical property change, are recommended for all colors of new compounds and compounds for new applications to provide the basis for agreement between producer and buyer on the suitability of the compound for the intended application.

1.3 The requirements in this specification are intended for qualification, as well as for quality control of compounds used to manufacture building products. They are not applicable to finished building products. ~~See Specifications D3679, D4477, D4726, and F964 for requirements for finished products.~~

1.4 It ~~may~~will be necessary, in special cases, to select specific compounds for unusual applications that require consideration of other properties not covered in this specification.

1.5 The rate of burning test, Test Method D635, is used in this specification only as a screening test for identification of certain properties of the PVC compound; there is no flammability test or flammability requirement for the compound.

1.6 The values stated in SI units are to be regarded as standard. The values given in ~~brackets~~parentheses are for information only.

1.7 The following safety hazards caveat pertains only to the test methods portion, Section 11, 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 2—There ~~are~~is no ~~ISO standards covering the primary subject matter of this specification.~~ known ISO equivalent to this standard.

1.8 The text of this standard references notes and footnotes, which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of this standard.

1.9 ~~Rigid~~ It is possible that rigid PVC recycle plastic meeting the requirements of this specification ~~may~~will be usable in some applications. Refer to the specific requirements in the Materials and Manufacture Section of the applicable product standard.

2. Referenced Documents

2.1 *ASTM Standards*:[2]

D256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics

[1] This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials (Section D20.15.08).

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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**

D618 Practice for Conditioning Plastics for Testing
D635 Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
D638 Test Method for Tensile Properties of Plastics
D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
D696 Test Method for Coefficient of Linear Thermal Expansion of Plastics Between −30°C and 30°C with a Vitreous Silica Dilatometer
D883 Terminology Relating to Plastics
D1435 Practice for Outdoor Weathering of Plastics
D1600 Terminology for Abbreviated Terms Relating to Plastics
~~D1898 Practice for Sampling of Plastics (Withdrawn 1998)[3]~~
~~D3010 Practice for Preparing Compression-Molded Test Sample Plaques of Rigid Poly(Vinyl Chloride) Compounds (Withdrawn 1992)[3]~~
~~D3679 Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding~~
D4226 Test Methods for Impact Resistance of Rigid Poly(Vinyl Chloride) (PVC) Building Products
~~D4477 Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit~~
~~D4726 Specification for Rigid Poly(Vinyl Chloride) (PVC) Exterior-Profile Extrusions Used for Assembled Windows and Doors~~
D5260 Classification for Chemical Resistance of Poly(Vinyl Chloride) (PVC) Homopolymer and Copolymer Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
~~F964 Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profiles Used for Fencing and Railing~~

3. Terminology

3.1 *Definitions:*

3.1.1 *General*—Definitions are in accordance with Terminology D883 and Terminology D1600, unless otherwise indicated.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *temperate northern climate*—in weather testing, a North American metropolitan area testing site located within 73° to 100°W longitude and 37° to 45°N latitude.

4. Classification

4.1 The means for classifying and identifying rigid PVC building products compounds are provided in Table 1. The properties enumerated in this table and the tests defined are expected to provide identification of the compounds selected. They are not necessarily suitable for direct application in design because of differences in shape of part, size, loading, environmental conditions, etc.

4.2 Classes are designated by the cell number for each property in the order in which they are listed in Table 1.

NOTE 3—Because of the large number of property requirements, the properties of classes are divided into groups for easy identification of the selected materials. The groups are the following: kind of resin in compound, strength properties, and dimensional stability. The class numbers are grouped as shown by the following example: