



Designation: D8427 – 21

Standard Specification for Rigid Poly Vinyl Chloride (PVC) Exterior Profiles Used for Sheet Piling¹

This standard is issued under the fixed designation D8427; 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.

1. Scope

1.1 This specification establishes requirements for the material properties and physical properties, including dimensional tolerances, of rigid poly(vinyl chloride) (PVC) exterior profiles used for heavy construction, geotechnical, commercial, and residential sheet piling. Methods for testing and for identifying exterior profile extrusions that comply with this specification are also provided.

1.2 The material used in these exterior profiles is limited to rigid PVC compounds in a single homogeneous extrusion or in a coextrusion of two or more PVC compounds in distinct layers.

1.3 The values stated in inch-pound units are to be regarded as the standard.

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

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

D618 Practice for Conditioning Plastics for Testing
D638 Test Method for Tensile Properties of Plastics
D883 Terminology Relating to Plastics
D1600 Terminology for Abbreviated Terms Relating to Plastics

¹ This specification is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.06 on Geosynthetic Specifications.

Current edition approved Dec. 1, 2021. Published December 2021. DOI: 10.1520/D8427-21.

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.

D4216 Specification for Rigid Poly(Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly(Vinyl Chloride) (CPVC) Building Products Compounds
D4226 Test Methods for Impact Resistance of Rigid Poly(Vinyl Chloride) (PVC) Building Products

3. Terminology

3.1 *Definitions*—General definitions are in accordance with Terminologies D883 and D1600, unless otherwise indicated.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *capstock, n*—the outer layer in a coextrusion exposed to weathering.

3.2.2 *coextrusion, n*—the process of coextruding profiles from two or more streams of PVC compounds.

3.2.3 *reworked material, n*—material from the manufacturer's facility of known, compatible composition meeting the material requirement of this specification that has been re-ground or pelletized after having been previously processed by extrusion, and so forth.

3.2.4 *single-layer profile, n*—profiles extruded from a single PVC compound (also sometimes called monoextrusion).

3.2.5 *substrate, n*—inner layer(s) of a coextrusion not exposed to weathering.

4. Ordering Information

4.1 PVC sheet piling is ordered to a particular length, often in increments of 1 ft or 2 ft. The width and profile shape needed are determined by the engineer (see Fig. 1).

5. Materials and Manufacture

5.1 The rigid poly vinyl chloride (PVC) compound for exterior profile extrusions meeting the requirements of this specification are categorized by the cell class requirements in accordance with Specification D4216.

5.2 The virgin PVC compounds used for the products meeting this specification shall meet cell 1-42443-33 as defined in Specification D4216. Compounds that have a higher cell classification because one or more properties are superior to those in the specified compound are acceptable.

5.3 *Color*—The color of the profiles shall be as agreed upon between the purchaser and the seller. When no surface features