



Designation: D4226 – 19^{ε1}

An American National Standard

Standard Test Methods for Impact Resistance of Rigid Poly(Vinyl Chloride) (PVC) Building Products¹

This standard is issued under the fixed designation D4226; 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 reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

ε¹ NOTE—Eq 4 was editorially corrected in August 2020.

1. Scope*

1.1 These test methods cover the determination of the energy required to crack or break rigid poly(vinyl chloride) (PVC) plastic sheeting and profile flat sections used in building products, as well as extruded or molded test samples, under specified conditions of impact from a freefalling standard weight striking an impactor with either of two configurations in contact with the specimen.

1.2 Two test procedures are included:

1.2.1 *Procedure A*, used to determine minimum impact energy required to cause failure (hole, crack, split, shatter, or tear).

1.2.2 *Procedure B*, used to determine minimum impact energy required to cause brittle failure.

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

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

1.5 *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.* Specific precautionary statements are given in Section 8.

1.6 *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 Recom-*

mendations 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

D883 Terminology Relating to Plastics

D5947 Test Methods for Physical Dimensions of Solid Plastics Specimens

E178 Practice for Dealing With Outlying Observations

E456 Terminology Relating to Quality and Statistics

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

E2935 Practice for Conducting Equivalence Tests for Comparing Testing Processes

3. Terminology

3.1 *Definitions*—Definitions are in accordance with Terminology D883, unless otherwise specified. For terms relating to precision and bias and associated issues, the terms used in this standard are defined in accordance with E456.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *failure (of test specimen, as related to impact resistance)*—signified by the presence of a punched hole, crack, split, shatter, or tear that was created in the target area by the impact of the falling weight (see Fig. 1).

3.2.2 *ductile failure (ductile break, as related to impact resistance)*—a tear or split having an angle greater than 0° at the tip and extending through the entire thickness of the specimen such that light is directly visible through the tear or split (see Fig. 1).

3.2.3 *brittle failure (brittle break, as related to impact resistance)*—a punched hole, split, or shatter where a piece of the specimen separates from the main part of the specimen or a crack that has a 0° angle at the tip as viewed by the naked eye (see Fig. 1).

¹ These test methods are under the jurisdiction of ASTM Committee D20 on Plastics and are 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