



Designation: D8160 – 20

Standard Test Method for Un-notched Cantilever Beam Impact Resistance (Izod Impact) Testing of Thermoplastic Pavement Marking Materials¹

This standard is issued under the fixed designation D8160; 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 test method covers the sample preparation for cantilever beams and test methodology of thermoplastic pavement marking materials, similar to the “Izod Impact” method listed in Test Method [D4812](#).

1.1.1 Some methods call for results in inch pound-force (in·lbf) as opposed to the common foot pound-force/inch (ft·lbf/in.) or Joule/meter (J/m) (energy absorbed per unit of specimen of similar cross-section). This method does not purport to cover all the issues involved with the pendulum impact of cantilever beams and suggests that Test Method [D4812](#) and Test Methods [D256](#) be reviewed before this methodology is attempted.

1.1.2 Thermoplastic pavement marking materials are a highly filled polymer matrix. Depending on the formula the resulting matrix may be brittle, therefore possibly resulting in inconsistent test results.

1.2 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.

1.3 *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.*

1.4 *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.*

¹ This test method is under the jurisdiction of ASTM Committee [D01](#) on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee [D01.44](#) on Traffic Coatings.

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2. Referenced Documents

2.1 *ASTM Standards:*²

[D256](#) Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics

[D883](#) Terminology Relating to Plastics

[D4812](#) Test Method for Unnotched Cantilever Beam Impact Resistance of Plastics

[D7307](#) Practice for Sampling of Thermoplastic Traffic Marking Materials

[D7308](#) Practice for Sample Preparation of Thermoplastic Pavement Marking Materials

[E177](#) Practice for Use of the Terms Precision and Bias in ASTM Test Methods

[E284](#) Terminology of Appearance

[E691](#) Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 *ISO Standard:*³

[ISO 180:2019](#) Plastics — Determination of Izod impact strength

3. Terminology

3.1 The terms and definitions in Terminology [D883](#) and Terminology [E284](#) apply to this method.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *impact tester, n*—“standardized” (see Test Methods [D256](#)) pendulum-type hammers, mounted in “standardized” machines, in breaking standard specimens with one pendulum swing.

3.2.2 *thermoplastic pavement marking (materials), n*—a highly filled 100 % total solids pavement marking system that when heated to the manufacturer’s recommended temperature under agitation can be applied onto a pavement surface and when cooled forms a solid durable delineator or marking.

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.

³ Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.