



Standard Guide for Testing Polyurethane “Poured in Place” Thermal Break Materials^{1,2}

This standard is issued under the fixed designation D 5140; 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 guide covers the preparation of a standard-size test sample and basic tests for physical property determinations of solid thermal break materials.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

NOTE 1—There is no similar or equivalent ISO standard.

1.3 The following precautionary caveat pertains only to the test method portion, Sections 6 and 14, 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.*

2. Referenced Documents

2.1 ASTM Standards:

C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus³

C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus³

C 1045 Practice for Calculating Thermal Transmission

Properties from Steady-State Heat Flux Measurements⁴
D 256 Test Methods for Impact Resistance of Plastics and Electrical Insulating Materials⁵
D 297 Test Methods for Rubber Products—Chemical Analysis⁶
D 638M Test Method for Tensile Properties of Plastics [Metric]⁵
D 696 Test Method for Coefficient of Linear Thermal Expansion of Plastics⁴
D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials⁴
D 792 Test Methods for Specific Gravity (Relative Density) and Density of Plastics by Displacement⁴
D 883 Terminology Relating to Plastics⁴
D 1600 Terminology for Abbreviated Terms Relating to Plastics⁴
D 1622 Test Method for Apparent Density of Rigid Cellular Plastics⁴
D 2240 Test Method for Rubber Property—Durometer Hardness⁵
E 228 Test Method for Linear Thermal Expansion of Solid Materials with a Vitreous Silica Dilatometer⁷

3. Terminology

3.1 *Definitions*—Definitions are in accordance with Terminologies D 883 and D 1600, unless otherwise indicated.

3.2 *Descriptions of Terms Specific to This Standard:*

3.2.1 *thermal break, n*—a solid or cellular material, or combination of materials, of low thermal transmission placed between components of high thermal transmission in order to reduce the heat flow across the assembly.

¹ This guide is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.24 on Plastic Building Products.

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³ Annual Book of ASTM Standards, Vol 04.06.

⁴ This guide was revised to include an ISO equivalency statement and a section on Keywords.

⁵ Annual Book of ASTM Standards, Vol 08.01.

⁶ Annual Book of ASTM Standards, Vol 09.01.

⁷ Annual Book of ASTM Standards, Vol 14.02

