



Designation: D7249/D7249M – 18

Standard Test Method for Facesheet Properties of Sandwich Constructions by Long Beam Flexure¹

This standard is issued under the fixed designation D7249/D7249M; 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 determination of facesheet properties of flat sandwich constructions subjected to flexure in such a manner that the applied moments produce curvature of the sandwich facesheet planes and result in compressive and tensile forces in the facesheets. Permissible core material forms include those with continuous bonding surfaces (such as balsa wood and foams) as well as those with discontinuous bonding surfaces (such as honeycomb).

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.2.1 Within the text, the inch-pound units are shown in brackets.

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.*

NOTE 1—Alternate procedures for determining the compressive strength of unidirectional polymer matrix composites materials in a sandwich beam configuration may be found in Test Method [D5467/D5467M](#).

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 [D30](#) on Composite Materials and is the direct responsibility of Subcommittee [D30.09](#) on Sandwich Construction.

Current edition approved April 1, 2018. Published April 2018. Originally approved in 2006. Last previous edition approved in 2016 as D7249/D7249M – 16^{e1}. DOI: 10.1520/D7249_D7249M-18.

2. Referenced Documents

2.1 *ASTM Standards:*²

[C273/C273M](#) Test Method for Shear Properties of Sandwich Core Materials

[C393/C393M](#) Test Method for Core Shear Properties of Sandwich Constructions by Beam Flexure

[D3410/D3410M](#) Test Method for Compressive Properties of Polymer Matrix Composite Materials with Unsupported Gage Section by Shear Loading

[D3878](#) Terminology for Composite Materials

[D5229/D5229M](#) Test Method for Moisture Absorption Properties and Equilibrium Conditioning of Polymer Matrix Composite Materials

[D5467/D5467M](#) Test Method for Compressive Properties of Unidirectional Polymer Matrix Composite Materials Using a Sandwich Beam

[D7250/D7250M](#) Practice for Determining Sandwich Beam Flexural and Shear Stiffness

[E6](#) Terminology Relating to Methods of Mechanical Testing

[E122](#) Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

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

[E251](#) Test Methods for Performance Characteristics of Metallic Bonded Resistance Strain Gages

[E456](#) Terminology Relating to Quality and Statistics

[E1237](#) Guide for Installing Bonded Resistance Strain Gages

3. Terminology

3.1 *Definitions*—Terminology [D3878](#) defines terms relating to high-modulus fibers and their composites. Terminology [E6](#) defines terms relating to mechanical testing. Terminology [E456](#) and Practice [E177](#) define terms relating to statistics. In the event of a conflict between terms, Terminology [D3878](#) shall have precedence over the other terminologies.

3.2 *Symbols:*

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.