



Standard Test Methods for Measurement of Thickness of Sandwich Cores¹

This standard is issued under the fixed designation C366/C366M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 These test methods cover plant manufacturing procedures for measuring the thickness of flat sandwich cores. 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). The two test methods covered include the following:

1.1.1 *Test Method A*—Roller-Type Thickness Tester.

1.1.2 *Test Method B*—Disk-Type Thickness Tester.

NOTE 1—These test methods are designed for measuring thickness of core as it is produced and are not intended for use in determining dimensions of core specimens for other tests.

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

2. Referenced Documents

2.1 *ASTM Standards*:²

D883 Terminology Relating to Plastics

D3878 Terminology for Composite Materials

D5229/D5229M Test Method for Moisture Absorption Properties and Equilibrium Conditioning of Polymer Matrix

¹ These test methods are 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 March 15, 2016. Published March 2016. Originally approved in 1955. Last previous edition approved in 2011 as C366 – 11. DOI: 10.1520/C0366_C0366M-16.

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.

Composite Materials

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

E171 Practice for Conditioning and Testing Flexible Barrier Packaging

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E456 Terminology Relating to Quality and Statistics

3. Terminology

3.1 *Definitions*—Terminology D3878 defines terms relating to high-modulus fibers and their composites, as well as terms relating to sandwich constructions. Terminology D883 defines terms relating to plastics. 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*:

3.2.1 CV —coefficient of variation statistic of a sample population for a given property (in percent)

3.2.2 S_{n-1} —standard deviation statistic of a sample population for a given property

3.2.3 X_i —test result for an individual specimen from the sample population for a given property

3.2.4 $\bar{x}$ —mean or average (estimate of mean) of a sample population for a given property

4. Summary of Test Methods

4.1 These test methods consist of environmentally conditioning a sandwich core specimen, zeroing a thickness tester, placing the core underneath the tester, and measuring the core thickness by sliding the core underneath the tester. Procedures are provided for thickness measurement using both roller-type and disk-type thickness testers.

5. Significance and Use

5.1 Normally, a close tolerance is desirable for core thickness so that sandwich panels may be manufactured with all the sandwich components fitting properly and without crushing the core.