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An American National Standard

Standard Practice for Specimen Preparation and Mounting of Plastic Composites for Use as Deck Boards, Stair Treads, Guards or Handrails to Assess Surface Burning Characteristics[1]

This standard is issued under the fixed designation E3202; 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.

~~ε[1] NOTE—The terms *flame spread index* and *smoke developed index* were moved editorially from under the heading *Definitions of Terms Specific to this Standard* to *Definitions*,3.1, in July 2020.~~

1. Scope

1.1 This practice describes a procedure for specimen preparation and mounting when testing plastic composite materials for use as deck boards, stair treads, guards or handrails to assess flame spread index as a surface burning characteristic using Test Method E84.

1.2 This practice applies to plastic composite materials, including plastic lumber and wood-plastic composites. The test specimens shall be self-supporting or held in place by added supports along the test surface, in accordance with Annex A4 of Test Method E84.

1.3 This practice does not provide pass/fail criteria that can be used as a regulatory tool.

1.4 This practice is applicable to (*a*) materials that are self-supporting and (*b*) materials that are not self-supporting but where the test specimen is held in place by added supports throughout the test duration without such severe sagging that it interferes with the effect of the gas flame on the test specimen.

NOTE 1—Paragraph 1.4 reflects requirements contained in plastic lumber specifications.

1.5 Use the values stated in inch-pound units as the standard in referee decisions. The values in the SI system of units are given in parentheses, for information only; see IEEE/ASTM SI-10 for further details.

1.6 This fire standard cannot be used to provide quantitative measures.

1.7 *Fire testing of products and materials is inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting these tests. Fire testing involves hazardous materials, operations and equipment.*

1.8 This practice gives instructions on specimen preparation and mounting but the fire-test-response method shall be conducted in accordance with Test Method E84. See also Section 8 for information on operator safety.

[1] This practice is under the jurisdiction of ASTM Committee E05 on Fire Standards and is the direct responsibility of Subcommittee E05.22 on Surface Burning.

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

1.10 *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.*

1.11 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D883 Terminology Relating to Plastics
E84 Test Method for Surface Burning Characteristics of Building Materials
E176 Terminology of Fire Standards
E2579 Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics
IEEE/ASTM SI-10 International System of Units (SI) The Modernized Metric System

3. Terminology

3.1 *Definitions:* For definitions of terms used in this practice and associated with fire issues refer to Terminology E176. For definitions of terms used in this practice and associated with plastics issues refer to Terminology D883.

3.1.1 *flame spread index, n*—a comparative measure expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time in Test Method E84. **E176**

3.1.2 *smoke developed index, n*—a comparative measure expressed as a dimensionless number, derived from measurements of smoke obscuration versus time in Test Method E84. **E176**

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *plastic composite, n—as related to code use in decking applications*, a generic designation that refers to wood/plastic composites, plastic lumber and similar materials.

3.2.1.1 *Discussion—*
This definition is used in codes.

3.2.2 *plastic lumber, n*—a manufactured product made primarily from plastic materials (filled or unfilled), typically used as a building material for purposes similar to those of traditional lumber, which is usually rectangular in cross-section. **D883**

3.2.2.1 *Discussion—*
Plastic lumber is typically supplied in sizes similar to those of traditional lumber board, timber and dimension lumber; however the tolerances for plastic lumber and for traditional lumber are not necessarily the same. **D883**

3.2.3 ~~*self-supporting specimen,*~~ *self-supporting, n—adj—~~a specimen~~ as related to fire testing of specimens,*~~that remains in place by its own structural characteristics both before and during the fire~~ having the ability to remain on the ceiling of the test apparatus without the use of additional supporting elements and without exhibiting behavior, such as sagging and falling debris, that interferes with the burner flame and progression of the flame front over the surface of the specimen before the application of the burner flame and at any time during the test.

3.2.3.1 *Discussion—*
Self-supporting specimens, after being mounted on the ledges of the test furnace, are structurally capable of supporting their own weight prior to the test and during the test without the use of additional supports. Examples of self-supporting specimen behavior include the ability to do the following without the use of additional supporting elements:

(1) Prior to and during the test, the specimen stays in its position to such an extent that it does not interfere with the effect of the burner flame.

[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.