



Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards¹

This standard is issued under the fixed designation D 6662; 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 specification covers polyolefin-based plastic lumber products for use as exterior residential decking boards.

1.2 Plastic lumber products are currently made predominantly with recycled polyolefin plastics (in particular high-density polyethylene) where the products are more or less non-homogenous in the cross-section. However, this specification may also be applicable to similar manufactured plastic products made from other plastic and plastic composite materials that have non-homogenous cross-sections.

1.3 This specification details a procedure to calculate recommended span lengths for spacing of support joists. This procedure was developed using experimental data from a typical unreinforced plastic lumber made predominantly from recycled high-density polyethylene. The methodology to develop span lengths for other types and compositions of plastic lumber is detailed in Appendix X1 of this standard.

1.4 The values are stated in inch-pound units, as these are currently the most common units used by the construction industry. Equivalent SI units are indicated in parentheses. However, the units stated for irradiance exposure in the weatherability section (6.3) are in SI units as these are the units commonly used for testing of this type.

1.5 *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.*

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

2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this specification to the extent referenced herein:

2.2 ASTM Standards:

D 883 Terminology Relating to Plastics²

D 2565 Practice for Xenon Arc Exposure of Plastics Intended for Outdoor Applications³

D 2915 Evaluating Allowable Properties for Grades of Structural Lumber⁴

D 4329 Practice for Operating Light and Water Apparatus (Fluorescent UV and Condensation Type) for Exposure of Plastics⁵

D 5033 The Development of Standards Relating to the Proper Use of Recycled Plastics⁵

D 6109 Test Method for Flexural Properties of Unreinforced and Reinforced Plastic Lumber⁵

D 6112 Test Methods for Compressive and Flexural Creep and Creep-Rupture of Plastic Lumber and Shapes⁵

D 6341 Test Method for Determination of Thermal Expansion of Plastic Lumber and Plastic Lumber Shapes Between -30 °F and 140 °F (-34 °C and 60 °C)⁵

E 84 Test Method for Surface Burning Characteristics of Building Materials⁶

E 108 Test Methods for Fire Tests of Roof Coverings⁶

G 151 Practice for Exposing Nonmetallic Materials in accelerated Test Devices that Use Laboratory Light Sources⁷

G 154 Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials⁷

G 155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials⁷

3. Terminology

3.1 Definitions:

3.1.1 *plastic lumber, n*—a manufactured product composed of more than 50 weight percent resin, and in which the product generally is rectangular in cross-section and typically supplied in sizes that correspond to traditional lumber board and dimensional lumber sizes, may be filled or unfilled, and may be composed of single or commingled resins.

3.1.2 *resin, n*—a solid or pseudo solid organic material often of high molecular weight, which exhibits a tendency to flow when subjected to stress, usually has a softening or melting range, and usually fractures conchoidally. (See Terminology D 883.)

3.1.2.1 *Discussion*—In a broad sense, the term is used to designate any polymer that is a basic material for plastics. (1982)

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.20 on Plastic Products. Current edition approved April 10, 2001. Published July 2001.

² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 08.02.

⁴ *Annual Book of ASTM Standards*, Vol 04.10.

⁵ *Annual Book of ASTM Standards*, Vol 08.03.

⁶ *Annual Book of ASTM Standards*, Vol 04.07.

⁷ *Annual Book of ASTM Standards*, Vol 14.04.