



Designation: D8223 – 19

Standard Practice for Evaluation of Fire-Retardant Treated Laminated Veneer Lumber¹

This standard is issued under the fixed designation D8223; 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 practice covers procedures for the evaluation of laminated veneer lumber (LVL) pressure-treated with commercially available fire retardants after exposure to both standard environmental conditions and an extended exposure to elevated temperature.

1.2 LVL products utilizing overlays or fire-retardant paints and coatings require other considerations and are outside of the scope of this practice.

1.3 LVL products manufactured for rim board applications require other considerations and are outside of the scope of this practice.

1.4 This practice provides one method to establish design values for fire-retardant treated (FRT) LVL. It is not intended to preclude the use of alternative methods for deriving design values, such as Test Method D5664 and Practice D6841 for FRT lumber.

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

1.6 *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

D9 Terminology Relating to Wood and Wood-Based Products

D3201/D3201M Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products

D5456 Specification for Evaluation of Structural Composite Lumber Products

D5664 Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber

D6841 Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber

E84 Test Method for Surface Burning Characteristics of Building Materials

E2768 Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)

2.2 Other Standards:

ANSI/AWC National Design Specification for Wood Construction³

AWPA E12 Standard Method for Determining Corrosion of Metal in Contact with Treated Wood⁴

UL 723 Test for Surface Burning Characteristics of Building Materials⁵

3. Terminology

3.1 *Definitions*—Definitions used in this practice are in accordance with Terminology D9 and Specification D5456.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *design value adjustment factor*, C_{tr} —factor used to adjust the design value for FRT LVL that will be exposed to end-use temperatures in excess of 38 °C (100 °F) but not exceeding 66 °C (150 °F), depending on the ratio of $f_{tr,108}$ and $f_{tr,0}$, and the climate zone.

3.2.2 $f_{tr,0}$ —mean property of FRT LVL equilibrated to standard conditions of 6.3.1.

3.2.3 $f_{tr,108}$ —mean property of FRT LVL after 108-day exposure to elevated temperature and relative humidity of 6.3.2.

¹ This test method is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.07 on Fire Performance of Wood.

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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.

³ Available from American Wood Council (AWC), 222 Catotcin Circle, SE, Suite 201, Leesburg, VA 20175, <http://www.awc.org>.

⁴ Available from American Wood Protection Association (AWPA), P.O. Box 361784, Birmingham, AL 35236-1784, <http://www.awpa.com>.

⁵ Available from Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062-2096, <https://www.ulstandards.ul.com>.