Designation: D 5055 – 04

Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists[1]

This standard is issued under the fixed designation D 5055; 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 *General*—This specification gives procedures for establishing, monitoring, and reevaluating structural capacities of prefabricated wood I-joists. Capacities considered are shear, moment, and stiffness. Procedures for establishing common details are given and certain design considerations specific to wood I-joists are itemized.

1.2 *Contents of the Standard*—An index and brief description of the main features of this specification are given in X1.1.1.

1.3 *Development of the Standard*—The development and intent of this specification is discussed in Appendix X1.

1.4 *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.* A specific precautionary statement is given in 6.1.1.5.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

D 198 Test Methods of Static Tests of Lumber in Structural Sizes

D 245 Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber

D 1990 Practice for Establishing Allowable Properties for Visually-Graded Dimension Lumber from In-Grade Tests of Full-Size Specimens

D 2559 Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions

D 2915 Practice for Evaluating Allowable Properties for Grades of Structural Lumber

D 4761 Test Methods for Mechanical Properties of Lumber and Wood-Base Structural Material

D 5457 Specification for Computing the Reference Resistance of Wood-Based Materials and Structural Connections for Load and Resistance Factor Design

E 4 Practices for Force Verification of Testing Machines

E 529 Guide for Conducting Flexural Tests on Beams and Girders for Building Construction

E 699 Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM Committee E06

IEEE/ASTM-S1–10 Standard for Use of the International System of Units (SI): The Modern Metric System

2.2 *Other Standards:*

U.S. Product Standard PS-1 Construction and Industrial Plywood[3]

U.S. Product Standard PS-2 Performance Standard for Wood-Based Structural-Use Panels[3]

CSA O112.7 Resorcinol and Phenol-Resorcinal Resin Adhesives[4]

CSA O151 Canadian Softwood Plywood[4]

CSA O325.0 Construction Sheathing[4]

CSA O452 Design Rated OSB[4]

Lumber Grading Rules Approved by American Lumber Standards Committee (ALSC) or Canadian Lumber Standards Accreditation Board (CLSAB)[5]

3. Terminology

3.1 *Definition:*

3.1.1 *prefabricated wood I-joist*—a structural member manufactured using sawn or structural composite lumber flanges and structural panel webs, bonded together with exterior exposure adhesives, forming an "I" cross-sectional shape. These members are primarily used as joists in floor and roof construction.

[1] This specification is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.02 on Lumber and Engineered Wood Products.

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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 APA The Engineered Wood Association, P.O. Box 11700, Tacoma, WA 98411and PFS Research Foundation, 2402 Daniels Street, Madison, WI 53718.

[4] Available from Canadian Standards Association, 178 Rexdale Blvd., Etobicoke, Ontario, Canada M9W 1R3.

[5] Available from American Lumber Standard Committee (ALSC), P.O. Box 210, Germantown, MD 20874. Canadian Lumber Standards Accreditation Board (CLSAB), 1055 W. Hastings St., Vancouver, BC, Canada V6E 2E9.

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