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.

Designation: D5456 – 21$^{\varepsilon 1}$

Standard Specification for Evaluation of Structural Composite Lumber Products[1]

This standard is issued under the fixed designation D5456; 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—Eq X5.1 was corrected editorially in June 2021.

INTRODUCTION

Structural composite lumber is intended for use as an engineering material for a variety of end-use applications. The composition of the lumber varies by wood species, adhesive composition, wood element size, shape, and arrangement. To provide the intended performance, composite lumber products require: (*1*) an evaluation of the mechanical and physical properties and their response to end-use environments, and (*2*) establishment of and conformance to standard performance specifications for quality.

Procedures contained in this specification are also to be used for establishing the design properties and for checking the effectiveness of property assignment and quality assurance procedures.

The quality assurance sections in this specification are intended to serve as a basis for designing quality-control programs specific to each product. The objective is to ensure that design values established in the qualification process are maintained.

This specification is arranged as follows:

	Section
Qualification	6
Determination of Allowable Design Stresses	7
Independent Inspection	8
Quality Assurance	10

1. Scope

1.1 This specification recognizes the complexity of structural glued products. Consequently, this specification covers both specific procedures and statements of intent that sampling and analysis must relate to the specific product.

1.2 This specification was developed in the light of currently manufactured products as defined in 3.2. Materials that do not conform to the definitions are beyond the scope of this specification. A brief discussion is found in Appendix X2.

1.3 Details of manufacturing procedures are beyond the scope of this specification.

NOTE 1—There is some potential for manufacturing variables to affect the properties of members that are loaded for sustained periods of time. Users of this specification are advised to consider the commentary on this topic in Appendix X2.

1.4 This specification primarily considers end use in dry service conditions defined in the governing code-referenced design standards, such as in most covered structures. The conditioning environment of 6.3 is considered representative of such uses.

1.5 The performance of structural composite lumber is affected by wood species, wood element size and shape, and adhesive and production parameters. Therefore, products produced by each individual manufacturer shall be evaluated to determine their product properties, regardless of the similarity in characteristics to products produced by other manufacturers. Where a manufacturer produces product in more than one facility, each production facility shall be evaluated independently. For additional production facilities, any revisions to the full qualification program in accordance with this specification shall be approved by the independent qualifying agency.

1.6 This specification is intended to provide manufacturers, regulatory agencies, and end users with a means to evaluate a composite lumber product intended for use as a structural material.

[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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