Designation: D 7033 – 07

Standard Practice for Establishing Design Capacities for Oriented Strand Board (OSB) Wood-Based Structural-Use Panels[1]

This standard is issued under the fixed designation D 7033; 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.

INTRODUCTION

Oriented strand board (OSB) wood-based structural-use panels have been used in a variety of applications since the 1970s. OSB panels manufactured for use in North America generally comply with U.S. Department of Commerce Standard PS-2. Panels that comply with PS-2 are subjected to various kinds of qualification performance testing and ongoing quality assurance testing. While many panel applications are specified simply on the basis of meeting a given "span rating" as defined in PS-2, some construction and specialty applications may require a complete set of engineering design values. Based on the structural tests required by PS-2 (flexure), along with data for other properties, a set of baseline capacities has been available since 1988. As is customary for structural-use panels, design values will be discussed in this practice in terms of design capacities rather than design properties, where the difference is that a design property is expressed in units of stress (that is, pounds-per-square inch) and a design capacity is expressed in the engineering units of strength (that is, inch-pounds of bending strength capacity, pounds of tensile capacity, and so forth). The term "design values" will be used generically and can apply to either properties or capacities.

As uses for OSB wood-based structural-use panels extend into new applications, it becomes increasingly important that manufacturers, qualified agencies, and regulatory bodies reference a set of common, consensus-based procedures for establishment of design values. The purpose of this practice is to provide these common procedures.

1. Scope

1.1 This practice covers the basis for code recognition of design capacities for OSB structural-use panels. Procedures are provided to establish or re-evaluate design capacities for OSB structural-use panels. Procedures for sampling and testing are also provided. Design values stated as capacity per unit dimension are to be regarded as standard. Design capacities developed in accordance with this practice are applicable to panels intended for use in dry in-service conditions.

NOTE 1—This practice is based on ICC-ES Acceptance Criteria AC-182. Relative to the scope of AC-182, this practice is limited to OSB panels.

NOTE 2—While this practice makes reference to PS-2, this practice applies similarly to products certified to other standards such as CAN/CSA O325.

NOTE 3—OSB produced under PS-2 is rated with the "Exposure 1" bond classification. Exposure 1 panels covered by PS-2 are intended for dry use applications where the in-service equilibrium moisture content conditions are expected to be less than 16 %. Exposure 1 panels are intended to resist the effects of moisture due to construction delays, or other conditions of similar severity. Guidelines on use of OSB are available from manufacturers and qualified agencies.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

D 9 Terminology Relating to Wood and Wood-Based Products

D 143 Test Methods for Small Clear Specimens of Timber

D 1037 Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials

D 1761 Test Methods for Mechanical Fasteners in Wood

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

D 2555 Practice for Establishing Clear Wood Strength Values

D 2718 Test Methods for Structural Panels in Planar Shear (Rolling Shear)

[1] This practice is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.03 on Panel 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.

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