



Designation: D7033 – 22

Standard Practice for Establishing Design Capacities for Oriented Strand Board (OSB) Wood-Based Structural-Use Panels¹

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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 (newtons-per-square millimeter) and a design capacity is expressed in the engineering units of strength (that is, inch-pounds (newton-millimeters) of bending strength capacity, pounds (newtons) 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 in flatwise and axial applications. Design capacities for OSB structural-use panels in edgewise applications, such as rim board, are outside the scope of this standard. 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.

NOTE 4—PS 2-10 replaced the use of nominal thicknesses with a classification term known as Performance Category, which is defined in PS 2 as “A panel designation related to the panel thickness range that is linked to the nominal panel thickness designations used in the International Building Code (IBC) and International Residential Code (IRC).” Therefore, the PS 2 Performance Category should be considered equivalent to the term “nominal thickness” used within this standard.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the*

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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