

Roof Diaphragm Capacity

The engineer responsible for designing the lateral load resisting system of the structure should reference the design values given in IBC 2006 (Table 2306.3.1) or NDS 2005 *Special Design Provisions For Wind and Seismic* (Appendix A). This design approach only utilizes the capacity of the sheathing on the underside of the roof panel. *Be sure to incorporate all footnotes associated with the tables and utilize the modification allowed in IBC 2006 section 2306.3.2.*

The following assumptions should be used to determine the applicable values in the documents identified above. *The justification for each assumption can be found below in italics.*

Panel Grade: Sheathing, single floor and other grades covered in DOC PS 1 and PS 2

The sheathing on the underside of our panels is rated as APA PR-N610, which is a higher quality.

Common Nail Size: 8d (2 ½" x 0.131")

Our roof details require the sheathing to be fastened to the supporting member with a SIPTP, SIPLD, or SIPHD fastener. As indicated on page 34 of our 2010-2011 Product Catalog, the lateral load resistance of a SIPTP, SIPLD, or SIPHD fastener through our panel into an SPF 2x4 is 943 lb. According to Table 11Q in 2005 NDS, the lateral load resistance of an 8d (2 ½" x 0.131") in the same scenario, including all applicable factors, is less than 200 lb. Therefore, at a minimum, our connection will provide the same capacity.

Minimum Fastener Penetration: 1 3/8"

Our roof details require the SIPTP fastener penetrate into the framing a minimum of xyz which, at a minimum, will provide the same capacity.

Minimum Nominal Panel Thickness: 7/16"

As indicated in section 4.2.1.in the NTA Listing Report numbered PSC121907-22, the underside of our roof panel has a thickness of 7/16" which will provide the same capacity.

Minimum Nominal Width of Framing: To be determined by the design engineer for each specific project.

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Diaphragm Type: Blocked

Diaphragms constructed with our panels are all fully blocked because all edges are fastened to wood splines between panels.

Fastener Spacing: 6"

Our roof details require the SIPTP fasteners to have a 6" minimum spacing.

Case: 6

This must be assumed to provide our designers flexibility when laying out the panels.