



Figure 1: Assembly Drawing for Seismic Resistance

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1. SUBJECT
1.1. R-Control Structural Insulated Wall Panels for use in Seismic D, E and F construction

2. SCOPE
 NTA, Inc. has evaluated the above product(s) for compliance with the applicable sections of the following codes:
2.1. NTA IM 014 Structural Insulated Panel Evaluation
2.1.1. IM 014 TSK 10.0 Seismic D, E and F Evaluation

To obtain the most current NTA Listing Report visit www.ntainc.com/product-certification

This listing report is intended to indicate that NTA Inc. has evaluated product described and has found it to be eligible for labeling. Product not labeled as specified herein is not covered by this report. NTA Inc. makes no warranty, either expressed or implied, regarding the product covered by this report.



3. CONSTRUCTION COMPONENTS (Ref. Figure 1)

3.1. (#1) Structural Insulated Panels. *R-Control Structural Insulated Panels* consisting of nominal 5 1/2-inch thick EPS core laminated between two sheets of minimum 7/16-inch thick oriented strand board (OSB). SIP Panels shall bear the ESR-2233 listing mark.

3.2. (#2) Splines. *R-Control Structural Insulated Panels* for use in seismic construction are interconnected with #2 Douglas Fir 4x6 splines.

3.3. (#3) Chords and Top and Bottom Plates. *R-Control Structural Insulated Panels* for use in seismic construction shall use #2 Douglas Fir 4x6 Top Plates, Bottom Plates, and Chords.

3.4. Fasteners. *R-Control Structural Insulated Panels* shall be fastened in accordance with Figure 1.

3.4.1. (#4) 8d Cooler Nails, 0.113-in. x 2-3/8-in. applied 2-in. o.c. staggered on the panel perimeter.

3.4.2. (#5) 10d Box Nails, 0.131 x 3-in. (4) used to toe nail the top and bottom plates at each chord.

3.5. (#6) Holdowns. Designed in accordance with accepted engineering practice to resist design chord forces.

4. DESIGN

4.1. Design Approval. Where required by the authority having jurisdiction, structures using *R-Control Structural Insulated Panels* shall be designed by a registered design professional. Construction documents, including engineering calculations and drawings providing floor plans, window details, door details, and connector details, shall be submitted to the code official when application is made for a permit. The individual preparing such documents shall possess the necessary qualifications as required by the applicable code and the professional registration laws of the state where the construction is undertaken. Approved construction documents shall be available at all times on the jobsite during installation. ^(IM 014 NACU4)

4.2. Connection to Structure. Designed in accordance with accepted engineering practice to transfer racking forces into the wall at the top and out of the wall at the base.

4.3. Design Loads. Design loads to be resisted by the SIP panels shall be as required under the applicable building code. Loads on the panels shall not exceed the loads noted in this report.

4.4. In-Plane Shear Design. Shear walls shall be sized to resist all code required wind and seismic loads without exceeding the allowable loads provided in Table 1. Shearwall chords, holdowns, and connections to transfer shear forces between the wall and surrounding structure shall be designed in accordance with accepted engineering practice. The allowable loads provided in Table 1, as published, are limited to assemblies with height-to-width ratios not exceeding 2:1. The allowable loads may be adjusted in accordance with Footnote 4 of Table 1. ^(IM 014 ACU17)

4.5. Seismic Design Categories. The shear wall configurations in Table 1 are permitted in Seismic Design Categories D, E and F. Such walls shall be designed using the seismic design coefficients and limitations provided in ASCE 7-05 for light-framed walls sheathed with wood structural panels rated for shear resistance (SFRS A13). These SIP panels shall use the following factors for design: Response Modification Coefficient, $R = 6.5$; System Overstrength Factor, $\Omega_0 = 3.0$; Deflection Amplification Factor, $C_d = 4.0$. ^(IM 014 ACU16)

4.6. Adhesives and Sealants. Adhesives and sealants shall not be applied at wood-to-wood or spline-to-facing interfaces in shearwalls in Seismic Design Categories D, E and F. Adhesives and sealants may be applied to wood-to-foam or facing-to-foam interfaces. Flexible SIP tape may be applied over panel joints.

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**Table 1: Allowable In-Plane Shear Strength (Pounds per Foot)
for SIP Shear Walls (Seismic Loads in Seismic Design Categories D, E and F)^{1,2,4}**

Spline Type	Framing Minimum SG ³	Minimum Facing Connections ²			Shear Strength (plf)
		Chord ²	Plate ²	Spline	
#2 D-F 4x6	0.50	0.113" x 2-3/8" nails, 2" o.c. Staggered (3/4" edge distance and 2-1/4" edge distance)	0.113" x 2-3/8" nails, 2" o.c. Staggered (3/4" edge distance and 2-1/4" edge distance)	(#2 DF 4x6) 0.113" x 2-3/8" nails, 2" o.c. Staggered (3/8" edge distance and 1" edge distance)	920

¹ Allowable seismic design coefficients are defined in Section 11.

² Chords, holdowns, and connections to other structural elements must be designed by a registered design professional in accordance with accepted engineering practice.

³ Required connections must be made on each side of the panel. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified.

⁴ For design to resist seismic forces, shear wall height-width ratios greater than 2:1, but not exceeding 3.5:1, are permitted provided the allowable shear strength values in this table are multiplied by 2w/h.

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