

CSI: DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 12 00—Structural Panels

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Product: PREMIERSIPS STRUCTURAL INSULATED PANELS

Listee: PREMIER BUILDING SYSTEMS, LLC

Evaluation: PremierSIPs structural insulated panel shearwall assemblies, for use as a lateral force resisting system in Seismic Design Categories A through F, have been evaluated based on testing in accordance with the following standard:

ASTM E2126-09 Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings, ASTM International.

Assembly: Typical construction of the PremierSIPs shearwall assembly is shown below in Figure 1.

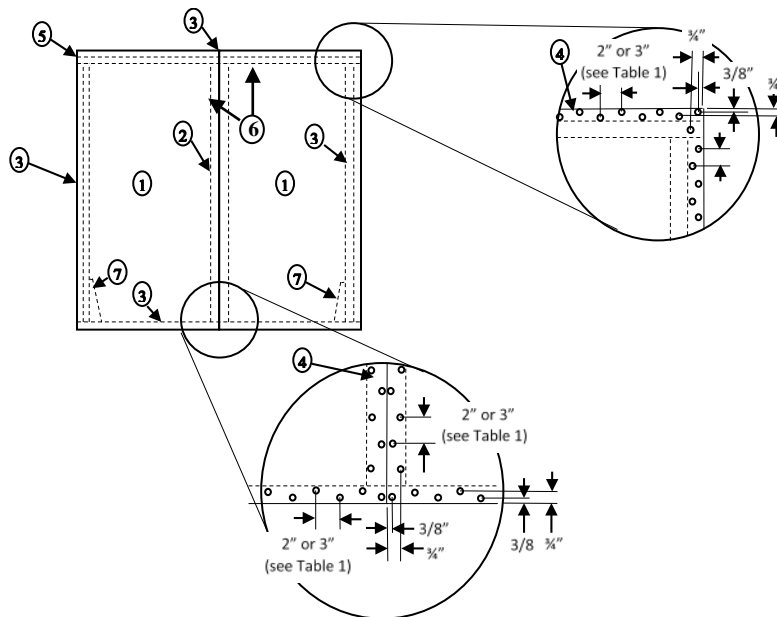


FIGURE 1—PREMIERSIPS ASSEMBLY COMPONENT DETAIL

DESCRIPTION OF PREMIERSIPS ASSEMBLY COMPONENT DETAILS (FIGURE 1):

1. **STRUCTURAL INSULATED PANELS (SIPS)** –The SIPS used in the shearwall assembly are the 4½-inch-thick (114 mm) *PremierSIPS* described in ICC-ES Evaluation Report [ESR-4524](#).
2. **SPLINES** – *PremierSIPS* are interconnected with spline connections as described in Table 1 below, and Section 3.2.5 of ICC-ES Evaluation Report [ESR-4524](#). See Figure 2 for details of spline types and construction.
3. **CHORDS AND TOP AND BOTTOM PLATES** – *PremierSIPS* shall use #2 Douglas-fir larch lumber for chords, top plates and bottom plates. Construction shall include a single 2x bottom plate, either a double 2x top plate or a single 4x top plate and either a double 2x or single 4x end chord.
4. **FASTENERS** – 8d Full Round Head Cooler Nails, 0.113-inch-diameter x 2³/₈ inches (2.9 mm x 60.3 mm). Applied as described in Table 1.
5. **FASTENERS** – 16d Full Round Head Common Nails, 0.162-inch-diameter x 3 inches (4.1 mm x 76.2 mm). Applied in plate to chord connections
6. **FASTENERS** – 16d Full Round Head Common Nails, 0.162-inch-diameter x 3½ inches (4.1 mm x 88.9 mm). Applied in lumber to lumber connections to join double lumber top plates and double lumber chords.
7. **HOLDOWNS** – Designed in accordance with accepted engineering practice to resist design chord forces.

Findings: The *PremierSIPS* assemblies allowable in-plane shear strength capacities specified in Table 1 are based on testing in accordance with ASTM E2126-09.

Identification:

1. *PremierSIPS* are identified with the following information:
 - a. The ICC-ES Evaluation Listing number (ESL-1207), or ICC NTA, LLC. certification mark (NTA's NLR No. NLR-1011)
 - b. In-plant quality assurance stamp
 - c. Company name (Premier Building Systems, LLC)
 - d. Project or batch number

2. The report holder's contact information is the following:

PREMIER BUILDING SYSTEMS, LLC
18504 CANYON ROAD EAST
PUYALLUP, WASHINGTON 98375

Installation: *PremierSips* wall assemblies shall be fabricated, identified and erected in accordance with this report, the approved construction documents and the applicable code.

Conditions of listing:

1. The listing report addresses only conformance with the standard noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing report applies only to the materials tested and as submitted for review by ICC-ES.
4. Where required by the authority having jurisdiction, structures using *PremierSIPS* shall be designed by a registered design professional. Construction documents, including engineering calculations and drawings providing floor plans 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 on the jobsite during installation.
5. Shear wall chords, hold-downs and connections to transfer shear forces between the wall and surrounding structure shall be designed in accordance with accepted engineering practice.
6. Design loads to be resisted by the *PremierSIPS* shall be as required under the applicable building code. Loads on the *PremierSIPS* shall not exceed the loads noted in this report.
7. Shear walls shall be sized to resist all code required wind and seismic loads without exceeding the allowable loads provided in Table 1. Shear wall chords, hold-downs, 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 6 of Table 1.

8. 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 7-10 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, $C_d = 4.0$.
9. Adhesives shall not be applied to the interface of the PremierSIPs OSB facers and any wood-based members of shear wall assemblies in Seismic Design Categories D, E and F. Premier sealants may be applied to wood-to-foam and facing-to-foam interfaces, and to the wood-to-wood interface between the members of the double lumber 2x splines. Flexible PremierSIPs tape may be applied over panel joints.
10. PremierSIPs are manufactured in Puyallup, Washington under a quality program with inspections by ICC-ES.

TABLE 1—ALLOWABLE IN-PLANE SHEAR STRENGTH (POUNDS PER FOOT) FOR SIP SHEAR WALLS (SEISMIC LOADS IN SEISMIC DESIGN CATEGORIES A, B, C, D, E AND F)^{1,2,3}

Spline Type ⁴	Framing Minimum SG ⁵	Minimum Facing Connections ²			Shear Strength ⁶ (plf)
		Chord ²	Plate ²	Spline ⁴	
Block, Surface, or Lumber Spline (Type S, Type L)	0.50	0.113" x 2 ³ / ₈ " nails, 3" on center staggered (³ / ₈ " edge distance and ³ / ₄ " edge distance)	0.113" x 2 ³ / ₈ " round head nails, 3" on center staggered (³ / ₈ " and ³ / ₄ " edge distances)	(²³ / ₃₂ " thick, 3" wide spline) 0.113" x 2 ³ / ₈ " nails, 3" on center staggered (³ / ₈ " edge distance and ³ / ₄ " edge distance)	720
	0.50	0.113" x 2 ³ / ₈ " nails, 2" on center staggered (³ / ₈ " edge distance and ³ / ₄ " edge distance)	0.113" x 2 ³ / ₈ " round head nails, 2" on center, staggered (³ / ₈ " and ³ / ₄ " edge distances)	(²³ / ₃₂ " thick, 3" wide spline) 0.113" x 2 ³ / ₈ " nails, 2" on center staggered (³ / ₈ " edge distance and ³ / ₄ " edge distance)	920

For **SI**: 1 inch = 25.4 mm; 1 plf = 14.6 N/m.

¹ Shear strength values, as published in this table, are limited to assemblies resisting wind or seismic forces where the aspect ratio (height:width) does not exceed 1:1 for Type S panel connections or 2:1 for Type L panel connections.

² Chords, hold-downs and connections to other structural elements shall be reviewed and approved by a registered design professional.

³ 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 7-10 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, $C_d = 4.0$.

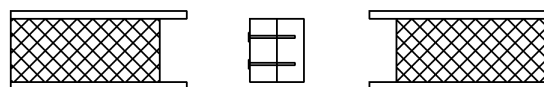
⁴ Spline type at SIP-to-SIP joints, solid chord members are required at each end of each shear wall segment. Dimensional double lumber splines must be interconnected using 10d common nails [0.148-inch-diameter x 3 inches (3.8 mm x 76 mm)] spaced 5-inches (127 mm) on center.

⁵ Required connections must be made on each side of the SIP. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified in the table for the framing.

⁶ For design to resist seismic forces, shear wall height-width ratios greater than 2:1, but not exceeding 3.5:1, are permitted for assemblies using lumber splines provided the allowable shear strength values in this table are multiplied by 2w/h.

Surface Spline (Type S)

Block Spline (Type S)



Lumber Spline (Type L)

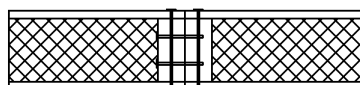


FIGURE 2—SPLINE CONNECTION TYPES