NTA Listing Report

Report Holder
Premier Building Systems, LLC
18504 Canyon Road East
Puyallp, WA 98375

1. Subject
1.1 PremierSIPs wall assemblies identified in PRS032808-3 used as a Lateral Force Resistance System in Seismic Design Categories D, E, and F.

2. Standards
NTA, Inc. is listing the above product(s) for compliance with the applicable sections of the following standards:
2.1 ASCE/SEI 7-10 Section 11.1.4
2.2 ASCE/SEI 7-10 Section 12.2.1

3. Manufacturing Quality Control
NTA, Inc. has evaluated the above product(s) in accordance with:
3.1 NTA IM 014 Structural Insulated Panels
3.2 NTA IM 036 Quality System Requirements

4. Construction Components (Ref. Figure 1)
4.1 (#1) Structural Insulated Panels. PremierSIPs consisting of nominal 3 ½-inch thick EPS core laminated between two sheets of minimum 7/16-inch thick oriented strand board (OSB). SIP Panels shall bear the PRS032808-3 listing mark.
4.2 (#2) Splines. PremierSIPs for use in seismic construction are interconnected with Spline connections as described in Table 1. See Figure 2 for details of spline types and construction.
4.3 (#3) Chords and Top and Bottom Plates. PremierSIPs for use in seismic construction 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.
4.4 Fasteners
4.4.1 (#4) 8d Full Round Head Cooler Nails, 0.113-in. x 2-1/4-in. Applied as described in Table 1.
4.4.2 (#5) Full Round Head Pneumatic Nails, 0.135 x 3-1/4-in. Applied in lumber to lumber connections for double top plates, double lumber chords and top and bottom plane to chord or spline connections.
4.5 (#6) Holdowns. Designed in accordance with accepted engineering practice to resist design chord forces.

5. Design
5.1 Design Approval. 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, 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.
5.2 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.
5.3 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.
5.4 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.
5.5 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 7-10 for light-framed walls sheathed with wood structural panels rated for shear resistance (SFRS A13). These SIP panels shall

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use the following factors for design: Response Modification Coefficient, $R = 6.5$; System Overstrength Factor, $\Omega_0 = 3.0$; Deflection Amplification Factor, $C_d = 4.0$. (NM 014 ACU16)

5.6 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.

6. Markings
Each eligible product shall be permanently marked to provide the following information:
6.1 The NTA, Inc. listing mark, shown below.
6.2 NTA’s NLR No. NLR-1010
6.3 Identifier for production facility
6.4 Project or batch number
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

<table>
<thead>
<tr>
<th>Spline Type³</th>
<th>Framing Minimum SG⁴</th>
<th>Minimum Facing Connections²</th>
<th>Spline³</th>
<th>Shear Strength⁵ (plf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block, Surface, or Lumber Spline (Type S, Type L)</td>
<td>0.50</td>
<td>0.113&quot;x 2-1/4&quot; nails, 6&quot; on center</td>
<td>0.113&quot;x 2-1/4&quot; nails, 3&quot; on center</td>
<td>(7/16&quot; thick, 3&quot; wide spline) 0.113&quot;x 2-1/4&quot; nails, 6&quot; on center</td>
</tr>
<tr>
<td>Block, Surface, or Lumber Spline (Type S, Type L)</td>
<td>0.50</td>
<td>0.113&quot;x 2-1/4&quot; nails, 6&quot; on center</td>
<td>0.113&quot;x 2-1/4&quot; nails, 6&quot; on center</td>
<td>(3/4&quot; thick, 3&quot; wide spline) 0.113&quot;x 2-1/4&quot; nails, 6&quot; on center</td>
</tr>
</tbody>
</table>

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 must be designed by a registered design professional in accordance with accepted engineering practice.

³ Spline type at interior panel-to-panel joints only, solid chord members are required at each end of each shear wall segment.

⁴ 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.

⁵ 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.

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Figure 1: Typical Construction
Figure 2: Spline Connection Types

- Surface Spline (Type S)
- Block Spline (Type S)
- Lumber Spline (Type L)