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

REPORT HOLDER:
PREMIER BUILDING SYSTEMS, LLC

EVALUATION SUBJECT:
PREMIER SIPS: TYPE S, TYPE I AND TYPE L STRUCTURAL INSULATED PANELS:
WALL SIPS: 8 FT. TO 24 FT. TALL, 3-1/2 IN. TO 11-1/4 IN. CORE THICKNESS
FLOOR AND ROOF SIPS: 8 FT. TO 24 FT. LONG, 3-1/2 IN. TO 11-1/4 IN. CORE THICKNESS
HEADER SIPS: 12 IN., 18 IN. AND 24 IN. DEPTHS, 3-1/4 IN. TO 7-1/4 IN. CORE THICKNESS FOR SPANS OF 4 FT. TO 10 FT.

ADDITIONAL LISTEE:
EXTREME PANEL TECHNOLOGIES, INC.

3.0 DESCRIPTION
3.1 General:
PremierSIPs are factory-assembled, engineered-wood-faced, structural insulated panels (SIP) with an expanded polystyrene (EPS) foam core. The SIPs are intended for use as load-bearing or non-load bearing wall panels, roof panels, floor panels and headers. The SIPs are available in 3 1/2-inch (89 mm) through 11 1/4-inch (285.8 mm) core thicknesses. The SIPs are custom made to the specifications for each use and are assembled under factory-controlled conditions. The maximum SIP size is 8 feet (2.44 m) wide and up to 24 feet (7.32 m) in length.

3.2 Materials:
3.2.1 Facing: The facing consists of two single-ply oriented strand board (OSB) facings, with a minimum of 7/16-inch (11.1 mm) thick conforming to 2015 IRC Table R610.3.2 and DOC PS 2-92, Exposure 1, Rated Sheathing with a span index of 24/16. Panels may be manufactured with the facing strength axis oriented either parallel or perpendicular to the direction of SIP bending provided the appropriate strength values are used.

3.2.2 Core: The core material is EPS foam conforming to ASTM C578, Type I. The foam core, up to 4 inches (102 mm) thick, has a flame spread rating not exceeding 25 and a smoke-developed rating not exceeding 450 when tested in accordance with ASTM E84. The panels, up to 11 1/4 inches (285.75 mm) core thickness, comply with IBC Section 2603.3 Exception 4.

3.2.3 Adhesive: Facing materials are adhered to the core material using a structural adhesive. The adhesive is applied during the lamination process in accordance with the in-plant quality system documentation.

3.2.4 Material Sources: The facing, core and adhesive used in the construction of PremierSIPs shall be composed only of materials from approved sources as identified in the in-plant quality system documentation.

3.2.5 Splines: PremierSIPs are interconnected with surface splines or block splines (Type S panels), engineered structural splines (Type I panels) or dimensional lumber splines (Type L panels).

3.2.5.1 Surface Splines: Surface splines (Figure 1) consist of 3-inch or 4-inch-wide by minimum 1/16-inch-thick (76 mm or 102 mm by 11.1 mm) OSB facing material. At each panel joint, one surface spline is inserted into each of two tight-fitting slots in the core. The slots in the core are located just inside the facing.
3.2.5.2 Block Splines: Block splines (Figure 1) are manufactured in the same manner as the SIP except with an overall thickness that is 1 inch (25.4 mm) less than the overall thickness of the panel to be joined.

3.2.5.3 Structural Splines: Structural splines consist of one or more plies of dimensional lumber or an engineered wood product (Figure 1). Acceptable sources for engineered wood products are listed in the manufacturer’s quality documentation.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General: The scope of this report is limited to the evaluation of the SIP panel component. Panel connections and other details related to incorporation of the panel into the overall structural system of a building are outside the scope of this report.

4.1.2 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.

4.1.3 Design Loads: Design loads to be resisted by the SIPs shall be as required under the applicable building code. Loads on the SIPs shall not exceed the loads noted in this report.

4.1.4 Allowable Loads: Allowable axial, transverse, and in-plane shear loads shall be selected from Tables 1 through 10. Calculations demonstrating that the loads applied are less than the allowable loads described in this report shall be submitted to the code official for approval. For loading conditions not specifically addressed herein, structural members designed in accordance with accepted engineering practice shall be provided to meet applicable code requirements.

4.1.5 Concentrated Load: Axial loads shall be applied to the SIP through continuous members such as structural insulated roof or floor panels or repetitive members spaced at regular intervals of 24 inches (610 mm) on center or less. Such members shall be fastened to a rim board or similar member to distribute the load to the SIP. Where a rim board or similar member is not provided, the reaction at the end of each member shall not exceed the concentrated loads provided in Tables 5 through 7.

4.1.6 Eccentric and Side Loads: Axial loads shall be applied concentrically to the top of the SIP. Loads shall not be applied eccentrically or through framing attached to one side of the panel (such as balloon framing) except where additional engineering documentation is provided.

4.1.7 Openings: Except as provided in Tables 8 and 9, open ins in panels shall be reinforced with wood or steel designed in accordance with accepted engineering practice to resist all loads applied to the opening as required by the applicable code. Details for door and window openings shall be provided to clarify the manner of supporting axial, transverse and/or in-plane shear loads at openings. Such details shall be shown on approved design documents and subject to approval by the local authority having jurisdiction.

4.1.8 In-Plane Shear Design: Shear walls utilizing block, surface or lumen splines shall be sized to resist all code required wind and seismic loads without exceeding the allowable loads provided in Table 10. 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 10 as published, are limited to assemblies with height-to-width ratios not exceeding those published in Footnote 1 of Table 10. The allowable loads for shear walls with height-width ratios exceeding 2:1 using dimensional lumber splines must be adjusted in accordance with Footnote 5 of Table 10.

4.1.9 Seismic Design Categories A, B and C: The use of the shear wall configurations in Table 10 is limited to structures in Seismic Design Categories A, B and C.

4.1.10 Horizontal Diaphragms: Horizontal diaphragms utilizing surface splines shall be sized to resist all code required wind and seismic loads without exceeding the allowable loads provided in Table 11. Diaphragm chords and connections to transfer shear forces between the diaphragm and surrounding structure shall be designed in accordance with accepted engineering practice. The maximum diaphragm length-to-width ratio shall not exceed those specified in Table 11.

4.1.11 Combined Loads: Panels subjected to any combination of axial, transverse or in-plane shear loads shall be analyzed utilizing a straight line interaction.

4.2 Installation:

4.2.1 General: PremierSIPs shall be fabricated, identified and installed in accordance with this report, the approved construction documents and the applicable code. In the event of a conflict between the manufacturer’s published installation instructions and this report, the report shall govern. Approved construction documents shall be available at all times on the jobsite during installation.

4.2.2 Splines: PremierSIPs are interconnected at the panel edges through the use of a spline. The spline type may be of any configuration listed in Section 3.2.5 as required by the specific design. The spline shall be secured in place with not less than 0.113-inch x 2.5-inch (2.9 mm x 63.5 mm) smooth shank nails, [0.275 inch (7 mm) head diameter], 6 inches (152 mm) on center on both sides of the SIP or an approved equivalent fastener. All joints shall be sealed in accordance with the SIP manufacturer’s installation instructions. Alternate spline connections may be required for SIPs subjected to in-plane shear forces. Such SIPs shall be interconnected exactly as required in Table 10 or Table 11 or as directed by the designer.

4.2.3 Plates: The top and bottom plates of the panels shall be dimensional lumber or engineered wood sized to match the core thickness of the panel. The plates shall be secured using not less than 0.113-inch x 2.5-inch (2.9 mm x 63.5 mm) nails, [0.275-inch (7 mm) head diameter], spaced 6 inches (152 mm) on center on both sides of the panel or an approved equivalent fastener. Alternate plate connections may be required for panels subjected to in-plane shear forces and shall be interconnected as required in Table 10 or Table 11 or as directed by the designer.

4.2.4 Cutting and Notching: No field cutting or routing of the panels shall be permitted except as shown on approved drawings.
4.2.5 Protection from Decay: SIPs that rest on exterior foundation walls shall not be located within 8 inches (203 mm) of exposed earth. SIPs supported by concrete or masonry that is in direct contact with earth shall be protected from the concrete or masonry by a moisture barrier.

4.2.6 Protection from Termites: In areas subject to damage from termites, SIPs shall be protected from termite attack as noted herein. SIPs shall be installed below grade or in contact with earth.

4.2.7 Heat-producing Fixtures: Heat-producing fixtures shall not be installed in the SIPs unless protected by a method approved by the code official or documented in test reports. This limitation shall not be interpreted to prohibit heat-producing elements with suitable protection.

4.2.8 Plumbing Installation Restrictions: Plumbing and waste lines may extend at right angles through the wall panels but are not permitted vertically within the core. Lines shall not interrupt splines or panel plates unless approved by a registered design professional.

4.2.9 Voids and Holes:

4.2.9.1 Voids in Core: In lieu of openings designed in accordance with Section 4.1.7, the following voids are permitted. Voids may be provided in the panel core during fabrication at predetermined locations only. Voids parallel to the panel span shall be limited to a single 1 1/2-inch (38.1 mm) maximum diameter hole. Such voids shall be spaced a minimum of 4 feet (1.22 m) on center, measured perpendicular to the panel span. Two 1/2-inch-diameter (12.7 mm) holes may be substituted for the single 1 1/2-inch-diameter (38.1 mm) hole provided they are maintained parallel and within 2 inches (50.8 mm) of each other. Voids perpendicular to the panel span shall be limited to a single 1 1/2-inch-maximum-diameter (38.1 mm) hole placed not closer than 16 inches (406.4 mm) from the support. Additional voids in the same direction shall be spaced not less than 28 inches (711.2 mm) on center.

4.2.9.2 Holes in Panels: Holes may be placed in SIPs during fabrication at predetermined locations only. Except as noted herein, holes shall be limited to 4-inches x 4-inches (102 mm x 102 mm) square. The minimum distance between holes shall not be less than 4 feet (1.22 m) on center measured perpendicular to the panel span and 24 inches (610 mm) on center measured parallel to the panel span. Not more than three holes shall be provided in a single line of holes parallel to the panel span. The holes may intersect voids permitted elsewhere in this report.

When SIPs with a 9/4-inch (235.0 mm) or 11/4-inch (285.8 mm) core thickness are used horizontally, holes shall be limited to a maximum 8-inch (203.2 mm) diameter. The minimum distance between holes shall not be less than 4 feet (1.22 m) on center measured perpendicular to the panel span and 4 feet (1.22 m) on center measured parallel to the panel span. The minimum distance from the edge of any hole to the support of any SIP shall not be less than 24 inches (610 mm) and the minimum distance from the edge of any hole to any edge of an individual SIP shall not be less than 19 inches (482.6 mm). When more than three holes are present in a single line parallel to the panel span, the allowable loads in Tables 1 through 3 shall be reduced by 25 percent.

4.2.10 Panel Cladding:

4.2.10.1 Roof Covering: The roof covering, underlayment and flashing shall comply with the applicable codes. All roofing materials must be installed in accordance with the manufacturer’s installation instructions. The use of roof coverings requiring the application of heat during installation shall be reviewed and approved by a registered design professional.

4.2.10.2 Exterior Wall Covering: Panels shall be covered on the exterior by a water-resistive barrier as required by the applicable code. The water-resistive barrier shall be attached with flashing in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The exterior facing of the SIP wall shall be covered with weather protection as required by the applicable building code or other approved materials.

4.2.10.3 Interior Wall Covering: The foam plastic core shall be separated from the interior of the building by an approved thermal barrier of ½-inch (12.7 mm) gypsum wallboard or equivalent thermal barrier where required by IBC Section 2603.4.

4.2.11 Fire-resistance-rated Assemblies:

4.2.11.1 Fire-resistance-rated, limited load-bearing, restrained and unrestrained, floor and ceiling assembly using PremierSIPs Type S Structural Insulated Panels – 1 hour (Figure 5):

7 1/2-inch-thick (190.5 mm) expanded polystyrene (EPS) core laminated between two sheets of minimum 7 1/2-inch-thick (11.1 mm) oriented strand board (OSB). Panels shall be evaluated as Type L and Type S Structural Insulated Panels – 1 hour (Figure 5).

4.2.11.2 Gypsum Board: For ceiling (exposed side), U.S. Gypsum, Firecode (Type X) 5/8-inch (15.9 mm), 4-foot-wide (1.22 m) by 10-foot-long (3.05 m), applied in two layers. Inner layer installed with gypsum long dimension parallel to SIP spline and offset a minimum of 24 inches (610 mm) from the SIP spline joints. Gypsum joints perpendicular to SIP spline shall be staggered in adjacent panels not less than 7 feet (2.1 m). Inner layer shall be secured to the OSB with No. 6 x 1 1/4-inch (31.75 mm), Type S, bughead head drywall screws spaced 12 inches (304.8 mm) on center and in rows 24 inches (610 mm) on center. Second layer installed at right angles to inner layer with all joints offset not less than 24 inches (610 mm) from the inner layer. Second layer secured with No. 7 x 2-inch (50.8 mm), Type S, bughead head drywall screws spaced 12 inches (304.8 mm) on center and in rows spaced 16 inches (406.4 mm) on center. Gypsum board joints in the second layer shall be covered with paper joint tape and joint compound. Screw heads shall be covered with joint compound.

4.2.11.3 Surface Spline: Minimum 7/16-inch-thick (11.1 mm) OSB placed in preformed slots below top (unexposed side). Spline secured with No. 6 x 1 1/2-inch (31.75 mm), Type S, bughead head drywall screws spaced 6 inches (152.4 mm) on center on each side of SIP joint. Block splines, consisting of 7/16-inch-thick (11.1 mm) OSB laminated to nominal 6 1/2-inch (165.1 mm) EPS, are an acceptable alternative to surface splines.

4.2.11.4 Fire-resistance-rated, limited load-bearing wall assembly using PremierSIPs Type L Structural Insulated Panels – 1 hour (Figure 6):

Firecode (Type S), 5 1/2-inch (190.5 mm) expanded polystyrene (EPS) core laminated between two sheets of minimum 7/16-inch-thick (11.1 mm) Type S Structural Insulated Panels – 1 hour (Figure 5).
oriented strand board (OSB). Panels shall bear the ICC-ES Evaluation Report number or ICC NTA, LLC certification mark. Maximum axial compression load shall not exceed 37 percent of the allowable axial load in Table 6.

4.2.11.2.2 (Item No. 2) Gypsum Board: Standard Gypsum’s Type SG-C, TE generation 3 (Type C) 5/8-inch-thick (15.9 mm), 4-foot-wide (1.22 m) by 10-foot-long (3.05 m), applied vertically in a single layer on both sides of the SIP. Vertical gypsum joints offset a minimum of 12 inches (304.8 mm) from SIP spline joints. Gypsum secured to the OSB with 1 5/8-inch-long (41.3 mm) PC cupped head drywall nails spaced 12 inches (304.8 mm) on center vertically and 16 inches (406.4 mm) on center horizontally. Gypsum board joints are covered with paper joint tape and joint compound. Nail heads are covered with joint compound.

4.2.11.2.3 (Item No. 3) Spline: Double 2x6 #2 Hem-Fir dimensional lumber. Double lumber members shall be nailed together with 0.148-inch x 3\(1/4\)-inch (3.76 mm x 82.6 mm) coated sinker nails (16d) spaced 24 inches (610 mm) on center staggered along the spline length. The double lumber spline shall be installed in the recesses between adjacent SiPs and secured to the OSB with 0.122-inch x 2-inch (3.1 mm x 50.8 mm) (6d common) nails spaced 6 inches (152.4 mm) on center. Caulk complying with ASTM C834 shall be applied to the spline surfaces in contact with the EPS.

4.2.11.2.4 (Item No. 4) Top Plate: Double 2x6 #2 Hem-Fir dimensional lumber. The first plate shall be installed in a 3-inch-deep (76.2 mm) recess at the top of the SIP and secured to the OSB facings with 0.122-inch x 2-inch (3.1 mm x 50.8 mm) (6d common) nails spaced 6 inches (152.4 mm) on center. The first plate shall also be secured to each spline with two 0.148-inch x 3\(1/4\)-inch (3.76 mm x 82.6 mm) (16d common) nails. The second plate shall be placed above the first plate and secured to the OSB facings with 0.122-inch x 2-inch (3.1 mm x 50.8 mm) (6d common) nails spaced 6 inches (152.4 mm) on center. The second plate shall also be secured to the first plate with 0.148-inch x 3\(1/4\)-inch (3.76 mm x 82.6 mm) coated sinker nails (16d) spaced 16 inches (406.4 mm) on center staggered along the plate length. Caulk complying with ASTM C834 shall be applied to the plate surfaces in contact with the EPS.

4.2.11.2.5 (Item No. 5) Bottom Plate: Single 2x6 No. 2 Hem-Fir dimensional lumber. The plate shall be installed in a 1\(1/2\)-inch-deep (38.1 mm) recess at the bottom of the panel and secured to the OSB facings with 0.122-inch x 2-inch (3.1 mm x 50.8 mm) (6d common) nails spaced 6 inches (152.4 mm) on center. The plate shall also be secured to each spline with two 0.148-inch x 3\(1/4\)-inch (3.76 mm x 82.6 mm) (16d common) nails. Caulk complying with ASTM C834 shall be applied to the plate surfaces in contact with the EPS.

5.0 CONDITIONS OF USE
PremierSIPs as described in this report comply with the codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation complies with this report and the approved construction documents.

5.2 This report applies only to the panel thicknesses specifically listed herein.

5.3 In use panel heights/spans shall not exceed the values listed herein. Extrapolation beyond the values listed herein is not permitted.

5.4 The panels are produced in the production facilities in Puyallup, Washington and Cottonwood, Minnesota under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Reports of axial load, transverse load, and in-plane racking shear tests of panels in accordance with the general guidelines of ASTM E72.

6.2 Reports of tests conducted in accordance with ASTM E119.

6.3 Reports of tests conducted in accordance with ASTM E455.

6.4 Reports of tests related to header loads.

7.0 IDENTIFICATION

7.1 PremierSIPs are identified with the following information:

7.1.1 The ICC-ES Evaluation Report number (ESR-4524), or ICC NTA, LLC, certification mark (either NTA’s NER No. PRS032808-3 or NTA’s NER No. NER-1009)

7.1.2 In-plant quality assurance stamp

7.1.3 Company name (Premier Building Systems, LLC or Extreme Panel Technologies, Inc.)

7.1.4 Project or batch number

7.2 The report holder’s contact information is the following:

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

7.3 The Additional Listee’s contact information is the following:

EXTREME PANEL TECHNOLOGIES, INC.
475 EAST 4TH STREET NORTH
COTTONWOOD, MINNESOTA 56229
FIGURE 1—SIP SPLINE TYPES

- Surface Spline (Type S)
- Block Spline (Type S)
- Engineered Lumber Spline (Type I)
- Dimensional Lumber Spline (Type L)

FIGURE 2—ZERO BEARING SUPPORT
<table>
<thead>
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<th>PANEL THICKNESS (inches)</th>
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For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa.

1 Table values assume a simply supported panel with 1 1/2-inches (38.1 mm) of continuous bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Values do not include the dead weight of the panel.

2 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code. Values are based on loads of short duration only and do not consider the effects of creep.

3 Table values for 8-foot (2.44 m) spans apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to span direction. Table values for other spans are based on the OSB strength axis oriented parallel to the span direction.

4 Panels spanning 4 feet (1.22 m) shall be a minimum of 8-foot (2.44 m) long spanning two 4-foot (1.22 m) spans.
### TABLE 2—MAXIMUM ALLOWABLE UNIFORM TRANSVERSE LOAD, WALL (psf) – TYPE S PANELS

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<td>72</td>
<td>60</td>
<td>51</td>
<td>45</td>
<td>40</td>
<td>36</td>
<td>32</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa.

1 Table values assume an end-supported panel with zero bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

2 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code. Values are based on loads of short duration only and do not consider the effects of creep.

3 Table values for 8-foot (2.44 m) spans apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to span direction. Table values for other spans are based on the OSB strength axis oriented parallel to the span direction.
### TABLE 3—MAXIMUM ALLOWABLE UNIFORM TRANSVERSE LOAD (psf) – TYPE I PANELS¹,³

<table>
<thead>
<tr>
<th>PANEL CORE THICKNESS (inches)</th>
<th>DEFLECTION LIMIT²</th>
<th>PANEL SPAN (feet)</th>
<th>4²</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.25</td>
<td>L/360</td>
<td>132</td>
<td>136</td>
<td>93</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>31</td>
<td>21</td>
<td>19</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>318*</td>
<td>148*</td>
<td>107*</td>
<td>91</td>
<td>75</td>
<td>59</td>
<td>45</td>
<td>31</td>
<td>27</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>318*</td>
<td>148*</td>
<td>107*</td>
<td>92*</td>
<td>87</td>
<td>78</td>
<td>60</td>
<td>41</td>
<td>36</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>9.25</td>
<td>L/360</td>
<td>197</td>
<td>164*</td>
<td>124*</td>
<td>96</td>
<td>84*</td>
<td>70</td>
<td>65</td>
<td>49</td>
<td>43</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>336*</td>
<td>164*</td>
<td>124*</td>
<td>107*</td>
<td>96</td>
<td>84*</td>
<td>76</td>
<td>65</td>
<td>56</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>336*</td>
<td>164*</td>
<td>124*</td>
<td>107*</td>
<td>96</td>
<td>84*</td>
<td>76</td>
<td>65</td>
<td>56</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>11.25</td>
<td>L/360</td>
<td>258</td>
<td>143*</td>
<td>103*</td>
<td>86</td>
<td>83</td>
<td>77*</td>
<td>61</td>
<td>42</td>
<td>37</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>318*</td>
<td>143*</td>
<td>103*</td>
<td>93*</td>
<td>85</td>
<td>77*</td>
<td>68</td>
<td>59*</td>
<td>54</td>
<td>46</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa.

¹Table values assume a simply supported panel with 1 1/2-inches (38.1 mm) of continuous bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Splines consist of one wood I-beam, 2 1/4-inch (57.2 mm) wide flange (minimum) with a depth equal to the core thickness, spaced not to exceed 48 inches (1219.2 mm) on center.

²Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.

³Tabulated values for 8-foot (2.44 m) walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on the strong-axis of the facing material oriented parallel to the span direction.

⁴Panels spanning 4 feet (1.22 m) shall be a minimum of 8 foot (2.44 m) long spanning a minimum of two 4-foot (1.22 m) spans. No single span condition is allowed.

*An asterisk (*) indicates the value shown is governed by the average peak load divided by 3.

### TABLE 4—MAXIMUM ALLOWABLE UNIFORM TRANSVERSE LOAD (psf) – TYPE L PANELS¹,³

<table>
<thead>
<tr>
<th>PANEL CORE THICKNESS (inches)</th>
<th>DEFLECTION LIMIT²</th>
<th>PANEL SPAN (feet)</th>
<th>4²</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>L/360</td>
<td>103</td>
<td>45</td>
<td>33</td>
<td>24</td>
<td>18</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>225</td>
<td>68</td>
<td>47</td>
<td>34</td>
<td>26</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>297*</td>
<td>91</td>
<td>61</td>
<td>45</td>
<td>34</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>L/360</td>
<td>307*</td>
<td>129</td>
<td>57</td>
<td>42</td>
<td>34</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>307*</td>
<td>182*</td>
<td>87</td>
<td>61</td>
<td>49</td>
<td>37</td>
<td>30</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>307*</td>
<td>182*</td>
<td>112*</td>
<td>80</td>
<td>65</td>
<td>49</td>
<td>39</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.25</td>
<td>L/360</td>
<td>253</td>
<td>171</td>
<td>82</td>
<td>66</td>
<td>54</td>
<td>41</td>
<td>32</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>288*</td>
<td>188*</td>
<td>128</td>
<td>100</td>
<td>81</td>
<td>61</td>
<td>48</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>288*</td>
<td>188*</td>
<td>133*</td>
<td>117*</td>
<td>105</td>
<td>80</td>
<td>63</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.25</td>
<td>L/360</td>
<td>286</td>
<td>188*</td>
<td>117</td>
<td>101</td>
<td>80</td>
<td>58</td>
<td>47</td>
<td>36</td>
<td>32</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>326*</td>
<td>188*</td>
<td>147*</td>
<td>134*</td>
<td>120</td>
<td>90</td>
<td>71</td>
<td>52</td>
<td>47</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>326*</td>
<td>188*</td>
<td>147*</td>
<td>134*</td>
<td>121</td>
<td>108*</td>
<td>93</td>
<td>68</td>
<td>61</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>11.25</td>
<td>L/360</td>
<td>327*</td>
<td>188*</td>
<td>167*</td>
<td>141</td>
<td>116</td>
<td>91</td>
<td>75</td>
<td>58</td>
<td>47</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>327*</td>
<td>188*</td>
<td>167*</td>
<td>153*</td>
<td>132</td>
<td>110*</td>
<td>97</td>
<td>83*</td>
<td>69</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L/180</td>
<td>327*</td>
<td>188*</td>
<td>167*</td>
<td>153*</td>
<td>132</td>
<td>110*</td>
<td>97</td>
<td>83*</td>
<td>83</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa.

¹Table values assume a simply supported panel with 1 1/2-inches (38.1 mm) of continuous bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Splines consist of No. 2 or better, Hem-Fir, 1 1/2 inches (38.1 mm) wide with a depth equal to the core thickness, spaced to provide not less than two members for every 48 inches (1219.2 mm) of panel width.

²Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.

³Tabulated values for 8-foot (2.44 m) walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on the strong-axis of the facing material oriented parallel to the span direction.

⁴Panels spanning 4 feet (1.22 m) shall be a minimum of 8 foot (2.44 m) long spanning a minimum of two 4-foot (1.22 m) spans. No single span condition is allowed.

*An asterisk (*) indicates the value shown is governed by the average peak load divided by 3.
### TABLE 5—MAXIMUM ALLOWABLE UNIFORM AXIAL LOAD (plf) – TYPE S PANELS\(^1,2,3,4\)

<table>
<thead>
<tr>
<th>PANEL CORE THICKNESS (inch)</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>3500</td>
<td>2553</td>
<td>2453</td>
<td>2117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>4250</td>
<td>4043</td>
<td>3373</td>
<td>3923</td>
<td>2817</td>
<td>2183</td>
</tr>
<tr>
<td>7.25</td>
<td>4917</td>
<td>4327</td>
<td>4473</td>
<td>4197</td>
<td>3497</td>
<td>3067</td>
</tr>
<tr>
<td>9.25</td>
<td>4600</td>
<td>4414</td>
<td>4228</td>
<td>4417</td>
<td>3389</td>
<td>3248</td>
</tr>
<tr>
<td>11.25</td>
<td>3889</td>
<td>3959</td>
<td>4028</td>
<td>4408</td>
<td>3837*</td>
<td>3333</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa; 1 plf = 14.6 N/m.
\(^1\) Splines consist of OSB surface splines not less than \(\frac{1}{16}\) inch (11.1 mm) thick inserted below the facing on each side of the panel. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.
\(^2\) Uniform axial loads may be applied in accordance with Section 4.1.4. Concentrated point loads shall be addressed in accordance with Section 4.1.5 and Table 6.
\(^3\) Both facings must bear on the supporting foundation or structure.
\(^4\) Tabulated values for 8-foot (2.44 m) walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports.
\(^*\) Limited by \(\frac{1}{8}\) inch (3.2 mm) deflection (compression)

### TABLE 6—MAXIMUM ALLOWABLE UNIFORM AXIAL LOADS (plf) – TYPE L PANELS\(^1,2,3,4\)

<table>
<thead>
<tr>
<th>PANEL CORE THICKNESS (inch)</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>4723</td>
<td>3903</td>
<td>3273</td>
<td>2623</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>5850</td>
<td>5890</td>
<td>4277</td>
<td>4310</td>
<td>2933</td>
<td>2837</td>
</tr>
<tr>
<td>7.25</td>
<td>6807</td>
<td>6110</td>
<td>5557</td>
<td>5180</td>
<td>4837</td>
<td>4083</td>
</tr>
<tr>
<td>9.25</td>
<td>5473</td>
<td>5709</td>
<td>5946</td>
<td>5948</td>
<td>4729*</td>
<td>4250</td>
</tr>
<tr>
<td>11.25</td>
<td>5667</td>
<td>5474</td>
<td>5281</td>
<td>5775*</td>
<td>4729*</td>
<td>4223</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa; 1 plf = 14.6 N/m.
\(^1\) Splines consist of No. 2 or better, Hem-Fir, 1\(\frac{1}{2}\)-inches (38.1 mm) wide with a depth equal to the core thickness, spaced to provide not less than two members for every 48 inches (1219.2 mm) of panel width. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.
\(^2\) Axial loads shall be applied concentrically to the top of the panel through repetitive members spaced not more than 24 inches (609.6 mm) on center. Such members shall be fastened to a rim board or similar member to distribute along the top of the SIP panel.
\(^3\) Both facings must bear on the supporting foundation or structure.
\(^4\) Tabulated values for 8-foot (2.44 m) walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports.
\(^*\) Limited by \(\frac{1}{8}\) inch (3.2 mm) deflection (compression)

### TABLE 7—MAXIMUM ALLOWABLE AXIAL COMPRESSION POINT LOADS (lbs) – TYPE S PANELS\(^1,2,3,4\)

<table>
<thead>
<tr>
<th>TOP PLATE CONFIGURATION</th>
<th>1(\frac{1}{2})&quot; MINIMUM BEARING WIDTH</th>
<th>3&quot; MINIMUM BEARING WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single 2x4 No. 2 or Better Hem-Fir Plate</td>
<td>2040</td>
<td>2450</td>
</tr>
<tr>
<td>Single 2x4 No. 2 or Better Hem-Fir Plate with (\frac{1}{8}) in. wide, 1.3E Rim Board Cap Plate</td>
<td>4030</td>
<td>4678</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 lb = 4.45 N.
\(^1\) Top plate secured to facings as required in Section 4.2.3.
\(^2\) Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.
\(^3\) Concentrated loads shall be applied concentrically to the top of the panel.
\(^4\) Tabulated values are based on the strong-axis of the facing material oriented parallel to the span direction.
**FIGURE 3—TOP PLATE CONFIGURATIONS**

**TABLE 8—MAXIMUM ALLOWABLE UNIFORM SIP HEADER VERTICAL LOADS (plf)**

<table>
<thead>
<tr>
<th>HEADER DEPTH (inches)</th>
<th>DEFLECTION LIMIT (inches)</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>L/480</td>
<td>740</td>
<td>384</td>
<td>228</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>L/360</td>
<td>740</td>
<td>384</td>
<td>229</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>740</td>
<td>384</td>
<td>229</td>
<td>142</td>
</tr>
<tr>
<td>18</td>
<td>L/480</td>
<td>798</td>
<td>574</td>
<td>385</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td>L/360</td>
<td>798</td>
<td>574</td>
<td>385</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>798</td>
<td>574</td>
<td>385</td>
<td>311</td>
</tr>
<tr>
<td>24</td>
<td>L/480</td>
<td>886</td>
<td>629</td>
<td>429</td>
<td>361</td>
</tr>
<tr>
<td></td>
<td>L/360</td>
<td>886</td>
<td>629</td>
<td>429</td>
<td>361</td>
</tr>
<tr>
<td></td>
<td>L/240</td>
<td>886</td>
<td>629</td>
<td>429</td>
<td>361</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa; 1 plf = 14.6 N/m.

1 Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

2 Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.

3 Minimum depth of facing above opening.

4 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.
### TABLE 9—MAXIMUM ALLOWABLE UNIFORM HEADER LOADS (plf)
(PANEL SPLICE A MINIMUM OF 6 INCH FROM EDGE OF OPENING) 3½ INCH THROUGH 11¾ INCH CORE THICKNESS1,2

<table>
<thead>
<tr>
<th>HEADER DEPTH (inches)</th>
<th>DEFORMATION LIMIT3</th>
<th>HEADER SPAN (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L/480</td>
<td>L/360</td>
</tr>
<tr>
<td>12</td>
<td>345</td>
<td>450</td>
</tr>
<tr>
<td>18</td>
<td>423</td>
<td>295</td>
</tr>
<tr>
<td>24</td>
<td>156</td>
<td>190</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 psf = 0.0479 kPa; 1 plf = 14.6 N/m.

1 Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.
2 Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.
3 Minimum depth of facing above opening.
4 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.

### TABLE 10—ALLOWABLE IN-PLANE RACKING SHEAR STRENGTH
FOR SIP SHEAR WALLS 3½ INCH THROUGH 11¾ INCH CORE THICKNESS
WIND AND SEISMIC LOADS IN SEISMIC DESIGN CATEGORIES A, B AND C1

<table>
<thead>
<tr>
<th>SPLINE TYPE2</th>
<th>FRAMING MINIMUM SG2</th>
<th>MINIMUM FACING CONNECTIONS4</th>
<th>ALLOWABLE SHEAR LOAD5 (plf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block, Surface or Lumber Spline (Type S or Type L)</td>
<td>0.50</td>
<td>0.113&quot;x 2-1/2&quot; nails, 6&quot; on center</td>
<td>410</td>
</tr>
<tr>
<td>Block, Surface or Lumber Spline (Type S or Type L)</td>
<td>0.50</td>
<td>0.113&quot;x 2-3/8&quot; nails, 6&quot; on center stagger (2 rows)</td>
<td>460</td>
</tr>
<tr>
<td>Block, Surface or Lumber Spline (Type S or Type L)</td>
<td>0.42</td>
<td>0.113&quot;x 2-3/8&quot; nails, 6&quot; on center stagger (2 rows)</td>
<td>700</td>
</tr>
<tr>
<td>Block, Surface or Lumber Spline (Type S or Type L)</td>
<td>0.42</td>
<td>0.148&quot;x 2-3/8&quot; nails, 6&quot; on center stagger (2 rows)</td>
<td>1000</td>
</tr>
</tbody>
</table>

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 when the aspect ratio (height:width) does not exceed 2:1.
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.
### TABLE 11—MAXIMUM ALLOWABLE IN-PLANE SHEAR FOR DIAPHRAGMS SUBJECTED TO WIND OR SEISMIC LOADING¹

<table>
<thead>
<tr>
<th>MINIMUM CONNECTIONS²</th>
<th>ALLOWABLE SHEAR LOAD (plf)</th>
<th>APPARENT SHEAR STIFFNESS (lbf/ft)</th>
<th>MAXIMUM ASPECT RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interior Supports² (Figure 4A)</strong></td>
<td><strong>Surface Spline³ (Figure 4B)</strong></td>
<td><strong>Boundary⁴ (Figure 4C)</strong></td>
<td><strong>Support</strong></td>
</tr>
<tr>
<td>PBS No. 14 Panel Screw with 1” penetration 12” on center</td>
<td>0.113” x 2.5” nails, 3” on center</td>
<td>PBS No. 14 Panel Screw with 1” penetration 12” on center</td>
<td>0.113” x 2.5” nails, 6” on center</td>
</tr>
<tr>
<td>PBS No. 14 Panel Screw with 1” penetration 12” on center</td>
<td>0.113” x 2.5” nails, 3” on center, 2 rows, staggered 7/16” x 4” OSB Spline</td>
<td>PBS No. 14 Panel Screw with 1” penetration 3” on center</td>
<td>0.113” x 2.5” nails, 4” on center</td>
</tr>
<tr>
<td>PBS No. 14 Panel Screw with 1” penetration 2” on center</td>
<td>0.113” x 2.5” nails, 3” on center, 2 rows, staggered 7/16” x 4” OSB Spline</td>
<td>PBS No. 14 Panel Screw with 1” penetration 1.5” on center</td>
<td>0.113” x 2.5” nails, 1.5” on center</td>
</tr>
<tr>
<td>PBS No. 14 Panel Screw with 1” penetration 3” on center</td>
<td>0.113” x 2.5” nails, 3” on center, 2 rows, staggered 7/16” x 4” OSB Spline</td>
<td>PBS No. 14 Panel Screw with 1” penetration 4” on center</td>
<td>0.113” x 2.5” nails, 3” on center</td>
</tr>
<tr>
<td>PBS No. 14 Panel Screw with 1” penetration 3” on center</td>
<td>0.113” x 2.5” nails, 3” on center, 2 rows, staggered 23/32” x 4” OSB Spline</td>
<td>PBS No. 14 Panel Screw with 1” penetration 4” on center</td>
<td>0.113” x 2.5” nails, 6” on center</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm; 1 lb = 4.45 N; 1 plf = 14.6 N/m.

¹ The maximum diaphragm length-to-width ratio of shall not exceed 4:1. Load may be applied parallel to continuous panel joints.

² Interior supports shall be spaced not to exceed 12 feet (3.66 mm) on center and have a minimum width of 3 1/2 inches (88.9 mm) and a specific gravity of 0.42 or greater. Specified fasteners are required on both sides of panel joint where panels are joined over a support. See Figure 4A.

³ Top spline only, at interior panel-to-panel joints. Specified fasteners are required on both sides of panel joint. See Figure 4B.

⁴ Boundary spline shall be solid 1 1/2 inches (38.1 mm) wide, minimum, and have a specific gravity of 0.42 or greater. Boundary supports shall have a minimum width of 3 1/2 inches (88.9 mm) and a specific gravity of 0.42 or greater. Specified spline fasteners are required through both facings. See Figure 4C.

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**FIGURE 4—DIAPHRAGM CONNECTION TYPES**

- **FIGURE 4A—INTERIOR SUPPORT**
- **FIGURE 4B—SURFACE SPLINE**
- **FIGURE 4C—BOUNDARY**

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**FIGURE 4**

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**TABLE 11—MAXIMUM ALLOWABLE IN-PLANE SHEAR FOR DIAPHRAGMS SUBJECTED TO WIND OR SEISMIC LOADING¹**
Load-Bearing, Restrained Floor/Ceiling Assembly Rating – 1 Hour
Load-Bearing, Unrestrained Floor/Ceiling Assembly Rating – 1 Hour

FIGURE 5—ASSEMBLY DRAWING FOR FIRE RESISTANCE

Load-Bearing Wall Assembly Rating – 1 Hour

FIGURE 6—ASSEMBLY DRAWING FOR FIRE RESISTANCE
1.0 REPORT PURPOSE AND SCOPE

Purpose:
The purpose of this evaluation report supplement is to indicate that PremierSIPs, recognized in ICC-ES evaluation report ESR-4524, have also been evaluated for compliance with the code(s) noted below.

Applicable code edition(s):

- 2019 California Building Code (CBC)
- 2019 California Residential Code (CRC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 California Building Code (CBC)
- 2019 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The PremierSIPs, described in Sections 2.0 through 7.0 of the evaluation report ESR-4524, comply with CBC Chapters 7, 16, and 26, provided the design and installation are in accordance with the 2018 International Building Code® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16 and 26, as applicable.

The PremierSIPs have not been evaluated under CBC Chapter 7A for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

2.1.1 OSHPD:
The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:
The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The PremierSIPs, described in Sections 2.0 through 7.0 of the evaluation report ESR-4524, comply with CRC Sections R301 and R316, provided the design and installation are in accordance with the 2018 International Residential Code® (IRC) provisions noted in the evaluation report.

The PremierSIPs have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

The products recognized in this supplement have not been evaluated for compliance with the International Wildland–Urban Interface Code®.

This supplement expires concurrently with the evaluation report, reissued February 2020 and revised March 2020.
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:


Assembly: Typical construction of the PremierSIPs shearwall assembly is shown below in Figure 1.
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 ESL-1208.

2. **SPLINES** – PremierSIPs are interconnected with spline connections as described in Table 1, below, and Section 3.2.5 of ICC-ES Evaluation Report ESL-1208. 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 2¼ inches (2.9 mm x 60.3 mm). Applied as described in Table 1.

5. **FASTENERS** – Full Round Head Pneumatic Nails, 0.135-inch-diameter x 3¼ inches (3.4 mm x 82.6 mm). Applied in lumber to lumber connections for double top plate, double lumber chords and top and bottom plate to chord or spline connections.

6. **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-1208), or ICC NTA, LLC. certification mark (NTA’s NLR No. NLR-1010)
   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)

<table>
<thead>
<tr>
<th>Spline Type</th>
<th>Framing Minimum SG</th>
<th>Minimum Facing Connections</th>
<th>Spline</th>
<th>Shear Strength ($\text{plf}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block, Surface, or Lumber Spline (Type S, Type L)</td>
<td>0.50</td>
<td>0.113” x 2 ¼” nails, 6” on center</td>
<td>0.113” x 2 ¼” nails, 3” on center</td>
<td>(\left(\frac{3}{10}\text{” thick, 3” wide spline}\right))</td>
</tr>
<tr>
<td>Block, Surface, or Lumber Spline (Type S, Type L)</td>
<td>0.50</td>
<td>0.113” x 2 ¼” nails, 6” on center</td>
<td>0.113” x 2 ¼” nails, 6” on center</td>
<td>(\left(\frac{3}{16}\text{” thick, 3” wide spline}\right))</td>
</tr>
</tbody>
</table>

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-panel SIP, 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 $2w/h$. 

*FIGURE 2—SPLINE CONNECTION TYPES*
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:


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 2¾ 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>
<thead>
<tr>
<th>Spline Type*</th>
<th>Framing Minimum SG3</th>
<th>Minimum Facing Connections2</th>
<th>Shear Strength6 (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(\frac{3}{4})&quot; nails, 3&quot; on center staggered ((\frac{3}{8})&quot; edge distance and (\frac{1}{8})&quot; edge distance)</td>
<td>720</td>
</tr>
<tr>
<td>0.50</td>
<td>0.113&quot; x 2(\frac{3}{4})&quot; round head nails, 3&quot; on center staggered ((\frac{3}{8})&quot; and (\frac{1}{8})&quot; edge distances)</td>
<td>920</td>
<td></td>
</tr>
</tbody>
</table>

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.

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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 2—SPLINE CONNECTION TYPES**