This bulletin addresses use of the Insulspan® SIP System for constructing diaphragm assemblies typically used for roof or floor applications that are required to provide resistance to seismic or wind loads. NTA Listing Report NLR-1071 provides diaphragm assemblies for Insulspan SIP System with a minimum 8 ¼" (210 mm) Insulspan SIP thickness based upon the applicable sections of ASTM E455 Standard, Test Method for Static Load Testing of Framed Floor or Roof Diaphragm Constructions for Buildings.

Determination of the intended load condition is essential to developing the proper fastening patterns for panel to panel connection splines and panel to support attachments. The engineer of record for the project is the source for this design information.

General descriptions of the Insulspan SIP System listed diaphragm assemblies are provided in Table 1. Refer to the attached copy of NTA Listing Report NLR-1071 for detailed requirements for diaphragm assemblies.

Table 1 – NTA Assembly Reports - Insulspan SIP System

<table>
<thead>
<tr>
<th>Panel to Panel Connection</th>
<th>Boundary Splines</th>
<th>Boundary Support Connection</th>
<th>Spline Nail Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSB Spline or Insulated Spline Interior panel to panel joints</td>
<td>2&quot; x</td>
<td>SIP screws @ 6” on center 0.190” shank diameter 0.255” thread o.d. Min. 2.750” thread length 0.625” head diameter</td>
<td>0.131” x 2-1/2” nails @ 6” on center</td>
</tr>
<tr>
<td>OSB Spline or Insulated Spline Interior panel to panel joints</td>
<td>2&quot; x</td>
<td>SIP screws @ 4” on center 0.190” shank diameter 0.255” thread o.d. Min. 2.750” thread length 0.625” head diameter</td>
<td>0.131” x 2-1/2” nails @ 4” on center</td>
</tr>
<tr>
<td>OSB Spline or Insulated Spline Interior panel to panel joints</td>
<td>2” x</td>
<td>SIP screws @ 2” oc 0.190” shank diameter 0.255” thread o.d. Min. 2.750” thread length 0.625” head diameter</td>
<td>0.131” x 2-1/2” nails @ 2” on center staggered 3/8”</td>
</tr>
</tbody>
</table>
NTA Listing Report

Report Holder
Plasti-Fab Ltd.
300, 2891 Sunridge Way NE
Calgary, Alberta T1Y 7H9
Canada

1. Product
1.1 Insulspan Structural Insulated Roof Panels for use in diaphragm assemblies

2. Standards
NTA, Inc. is listing the above product(s) for compliance with the applicable sections of the following standards:
2.1 ASTM E455 Standard Test Method for Static Load Testing of Framed Floor or Roof Diaphragm Constructions for Buildings

3. Manufacturing Quality Control
NTA, Inc. has evaluated the manufacturer's quality system in accordance with:
3.1 NTA IM 036 Quality System Requirements

4. Description
4.1 Structural Insulated Panels. Insulspan Structural Insulated Panels consisting of minimum nominal 7-3/8 inch thick expanded polystyrene (EPS) core laminated between two sheets of minimum 7/16 inch thick oriented strand board (OSB). SIP Panels shall be labeled in accordance with ESR-1295.

4.2 Splines. Insulspan Structural Insulated Panels for use in diaphragm assemblies are interconnected with insulated OSB (Block) splines, 3-in. wide and thickness equal to the core thickness of the SIP, along the full length of the spline connection. Surface splines consisting of 7/16 inch thick OSB may also be used.

4.3 Chords and Boundary Splines. Diaphragm assemblies recognized in this report shall use solid lumber 1.5-in. wide minimum with a specific gravity of 0.42 or greater for chords and boundary support members

4.4 Fasteners. Assemblies shall be fastened in accordance with Figure 1 and Table 1.

5. Design
5.1 Design Approval. Where required by the authority having jurisdiction, structures using Insulspan 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.

5.2 Connection to Structure. Designed in accordance with accepted engineering practice to transfer forces to the structure.

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.
6. **Installation**

6.1 **General.** *Insulspan Structural Insulated Panels* shall be fabricated, identified and erected 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, this report shall govern. Approved construction documents shall be available at all times on the jobsite during installation.

7. **Evidence Submitted**

Evaluation evidence and data are on file with NTA, Inc. NTA, Inc. is accredited by the International Accreditation Service (IAS) as follows:

- ISO 17020 Inspection Agency (AA-682)
- ISO 17025 Testing Laboratory (TL-259)
- ISO 17065 Product Certification Agency (PCA-102)

The scope of accreditation related to testing, inspection or product certification pertain only to the test methods and/or standard referenced therein. Design parameters and the application of building code requirements, such as special inspection, have not been reviewed by IAS and are not covered in the accreditation.

8. **Findings**

All products referenced herein are manufactured under an in-plant Quality Assurance program to ensure that the production quality meets or exceeds the requirements of the standards noted herein and the criteria as established by NTA, Inc. Furthermore, product must comply with the requirements of this listing report.

*This listing report is subject to annual review.*

9. **Markings**

Each eligible product shall be permanently marked to provide the following information:

9.1 The name of the report holder
9.2 Identifier for the production facility
9.3 Project or batch number

Each eligible product may be permanently marked to provide the following information:

9.4 The NTA, Inc. listing mark, shown below.
9.5 NTA’s NLR No. NLR-1071
Table 1: Allowable In-Plane Shear Strength (Pounds per Foot) for Horizontal Diaphragms Subjected to Wind or Seismic Loading

<table>
<thead>
<tr>
<th>Minimum Nominal SIP Core Thickness (in.)</th>
<th>Minimum Connections</th>
<th>Apparent Shear Stiffness, $G_a$ (kips/in.)</th>
<th>Max. Aspect Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-3/8</td>
<td>0.131-in. x 2-1/2-in. nails, 6-in. on center</td>
<td>0.131-in. x 2-1/2-in. nails, 6-in. on center</td>
<td>265</td>
</tr>
<tr>
<td>7-3/8</td>
<td>0.131-in. x 2-1/2-in. nails, 4-in. on center</td>
<td>0.131-in. x 2-1/2-in. nails, 4-in. on center</td>
<td>330</td>
</tr>
<tr>
<td>7-3/8</td>
<td>0.131-in. x 2-1/2-in. nails, 2-in. on center staggered 3/8-in. (Figure 1c)</td>
<td>0.131-in. x 2-1/2-in. nails, 2-in. on center staggered 3/8-in. (Figure 1c)</td>
<td>575</td>
</tr>
</tbody>
</table>

1Surface or block spline only at interior panel-to-panel joints. Specified fasteners are required on both sides of panel joint through the top surface only, as shown in Figure 1a.

2Boundary spline shall be solid lumber 1-1/2-in. wide minimum and have a specific gravity of 0.42 or greater. Specified fasteners are required through both facings as shown in Figure 1b.
This NLR report is intended to indicate that NTA, Inc. has listed the product described and 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. For more information or questions regarding this report please contact NTA at 1-833-NER-HELP (833-637-4357).

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