

Technical Bulletin

Insulspan SIP System for use in Roof or Floor Diaphragm Assemblies ICC NTA Listing Report NLR-1071 (4 pages attached)

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. ICC NTA Listing Report NLR-1071 provides diaphragm assemblies for *Insulspan SIP (structural insulating panel)* assemblies with a minimum 8 ¼" (210 mm) *Insulspan SIP* (7 3/8"/187 mm EPS core 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* diaphragm assemblies are provided in Table 1. Refer to the attached copy of ICC NTA Listing Report NLR-1071 for detailed requirements for *Insulspan SIP System* diaphragm assemblies.

Table 1 – ICC NTA Assembly Report - Insulspan SIP System General Description

Panel to Panel Connection	Boundary Splines	Boundary Support Connection	Spline Nail Spacing
OSB Spline or Insulated Spline Interior panel to panel joints	2" x	SIP screws @ 6" on center 0.190" shank diameter 0.255" thread o.d. Min. 2.750" thread length 0.625" head diameter	0.131" x 2-1/2" nails @ 6" on center
OSB Spline or Insulated Spline Interior panel to panel joints	2" x	SIP screws @ 4" on center 0.190" shank diameter 0.255" thread o.d. Min. 2.750" thread length 0.625" head diameter	0.131" x 2-1/2" nails @ 4" on center
OSB Spline or Insulated Spline Interior panel to panel joints	2" x	SIP screws @ 2" oc 0.190" shank diameter 0.255" thread o.d. Min. 2.750" thread length 0.625" head diameter	0.131" x 2-1/2" nails @ 2" on center staggered 3/8"



NLR-1071
 Reissued Date: 03/23/2020
 This report is subject to annual review

257 East Randolph Street
 Nappanee, IN 46550
 Phone: 574-773-7975
 Fax: 574-773-2260

ICC NTA, LLC Listing Report

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

Manufacturing Location(s)	
PFB Manufacturing, LLC 245 N. Jipson St. Blissfield, MI 49228-1167	Plasti-Fab Ltd. #1, 600 Chester Road, Annacis Business Park Delta, BC V3M 5Y3

1. Product

1.1 *Insulspan Structural Insulated Roof Panels* for use in diaphragm assemblies

2. Standards

ICC NTA, LLC 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

To obtain the most current ICC NTA NLR Report, visit www.icc-nta.org/report-search/.

3. Manufacturing Quality Control

ICC NTA, LLC 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.

This NLR report is intended to indicate that ICC NTA, LLC. 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. ICC NTA, LLC. 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).

ICC NTA, LLC • 257 East Randolph Street • NAPPANEE, INDIANA 46550
WWW.ICC-NTA.ORG

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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 ICC NTA, LLC. ICC NTA, LLC is accredited by A2LA as follows:

- ISO 17020 Inspection Agency
- ISO 17025 Testing Laboratory
- ISO 17065 Product Certification Agency

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 A2LA 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 ICC NTA, LLC. Furthermore, product must comply with the requirements of this listing report.

This listing report is subject to annual review.

9. Markings

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

- 9.1.1** The name of the report holder
- 9.1.2** Identifier for the production facility
- 9.1.3** Project or batch number

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

- 9.2.1** The ICC NTA, LLC listing mark, shown below.
- 9.2.2** NTA's NLR No. NLR-1071



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**Table 1: Allowable In-Plane Shear Strength (Pounds per Foot)
 for Horizontal Diaphragms Subjected to Wind or Seismic Loading**

Minimum Nominal SIP Core Thickness (in.)	Minimum Connections			Shear Strength (plf)	Apparent Shear Stiffness, G_a (kips/in.)	Max. Aspect Ratio
	Surface Spline ¹ (Figure 1a)	Support Element (Figure 1b)	Boundary Spline ² (Figure 1c)			
7-3/8	0.131-in. x 2-1/2-in. nails, 6-in. on center	10-in. length, 0.190-in. shank diameter, 0.255-in. thread o.d., 2.750-in. thread length, 0.625-in. head diameter SIP screw, 6-in. on center	0.131-in. x 2-1/2-in. nails, 6-in. on center	265	13	3:1
	0.131-in. x 2-1/2-in. nails, 4-in. on center	10-in. length, 0.190-in. shank diameter, 0.255-in. thread o.d., 2.750-in. thread length, 0.625-in. head diameter SIP screw, 4-in. on center	0.131-in. x 2-1/2-in. nails, 4-in. on center	330	21	3:1
	0.131-in. x 2-1/2-in. nails, 2-in. on center staggered 3/8-in. (Figure 1c)	10-in. length, 0.190-in. shank diameter, 0.255-in. thread o.d., 2.750-in. thread length, 0.625-in. head diameter SIP screw, 3-in. on center	0.131-in. x 2-1/2-in. nails, 2-in. on center staggered 3/8-in. (Figure 1c)	575	34	3:1

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.

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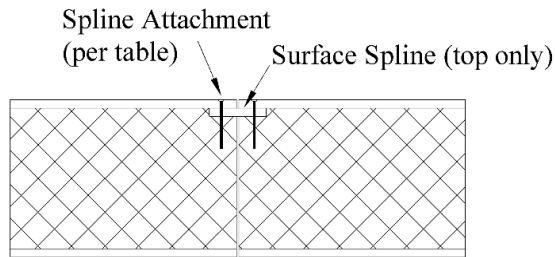


Figure 1a: Surface Spline

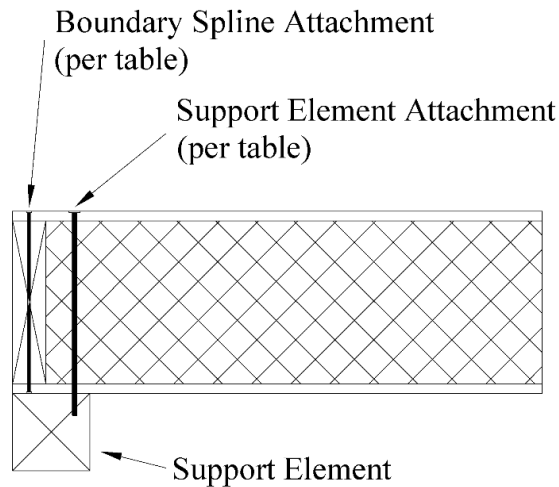


Figure 1b: Support Element

0.131" x 2 1/2" Nails, 2" O.C. (Staggered 3/8"),
 Fasteners Applied to Both Sides at SPF
 Members and Only One Side (the Side Opposite
 of Load Application) at All Block Splines

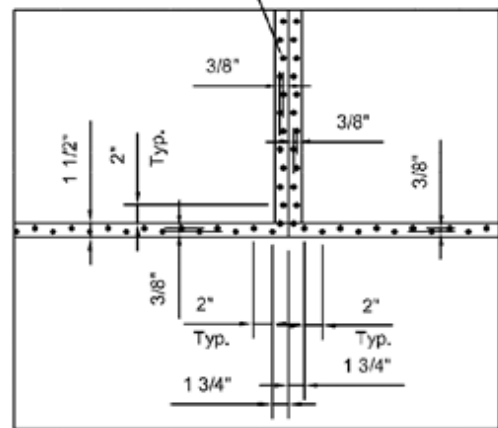


Figure 1c: Boundary Splines

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