

Technical Bulletin

One-Hour Fire-Resistance Rated Wall and Roof Assemblies

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Intertek is a global leader in the testing, inspection, and certification of products for manufacturers and retailers around the world. Intertek are among the industry leaders in their scope of testing and accreditations.

The attached Intertek listings for Insulspan SIP System detail one-hour fire-resistance rated assemblies for use in constructing load-bearing wall and roof assemblies. The assemblies have been evaluated in accordance with test methods ASTM E119-12 and CAN/ULC-S101-07.

The attached listings noted below provide additional detail for 1-hour fire-resistance rated assemblies as per ASTM E119 and CAN/ULC S101.

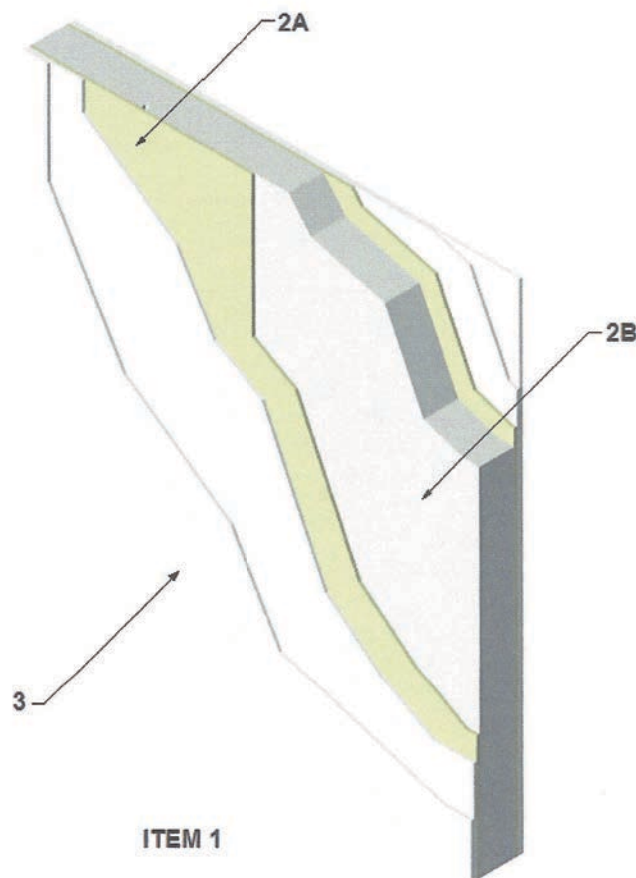
Intertek Design Number	Insulspan SIP Application
PFL/CWP 60-01	4-½", 6-½", 8-¼" and 10-¼" Exterior SIP Wall Systems
PFL/CWP 60-02	6-½", 8-¼" and 10-¼" Exterior SIP Wall Systems
PFL/CRP 60-01	4-½" to 10- ½" SIP Roof-Ceiling Systems
PFL/CRP 60-02	4-½" to 10- ½" SIP Roof-Ceiling Systems

Note: The above wall and roof-ceiling SIP system listings are published in the Intertek Directory of Building Products and can also be downloaded from the Intertek on-line directory under the Plasti-Fab Ltd. listing at:
https://bpdirectory.intertek.com/pages/DLP_Search.aspx.



Division 7 - Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 43 Composite Wall Panels

Plasti-Fab Ltd.
Design No. PFL/CWP 60-01
EXTERIOR WALL SYSTEMS
Insulspan SIPs by Plasti-Fab 4-1/2, 6-1/2, 8-1/4, or 10-1/4 in. Structural Insulated Panels
ASTM E119
CAN/ULC-S101
Rating: 1 Hour
Restricted Superimposed Load: See Item 1



1. **WALL ASSEMBLY:** Construct a wall assembly using elements described in Items 2 through 4 up to a max. of 9 ft. in height with a max. restricted superimposed load of 82% of the allowable capacity of the panel.

2. **CERTIFIED COMPANIES:** Plasti-Fab Ltd.

CERTIFIED PRODUCT: Insulspan SIPs by Plasti-Fab Structural Insulated Panels



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WALL PANELS: Install Insulspan SIPs by Plasti-Fab Structural Insulated Panels consisting of the following elements:

- A. **FACING** – Nominal 7/16 in. thick OSB skins factory bonded to interior and exterior sides of EPS foam core (Item 2B) conforming and identified as meeting DOC PS 2-04, Exposure 1, Rated Sheathing with a span index of 24/16 and/or CAN/CSA O325.0, Exterior Grade Sheathing with a span index of 1R24/2F16.
- B. **CORE** – Use ASTM C578 compliant and Listed Type I EPS (min. 0.9 pcf) with a flame spread rating not exceeding 75 and smoke-developed rating not exceeding 450 per ASTM E84 and/or CAN/ULC-S701 compliant and Listed Type 1 EPS with a flame spread rating not exceeding 500 per CAN/ULC-S102.2.
- C. **ADHESIVE (Not Shown)** – Facing materials are adhered to the core material using a structural adhesive. The adhesive is applied during the lamination procedure in accordance with the in-plant quality system documentation.
- D. **SPLINE (Not Shown)** – Structural Insulated Panels are interconnected with surface splines or block splines.

Surface splines typically consist of 3 in. wide x 7/16 in. thick OSB. 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.

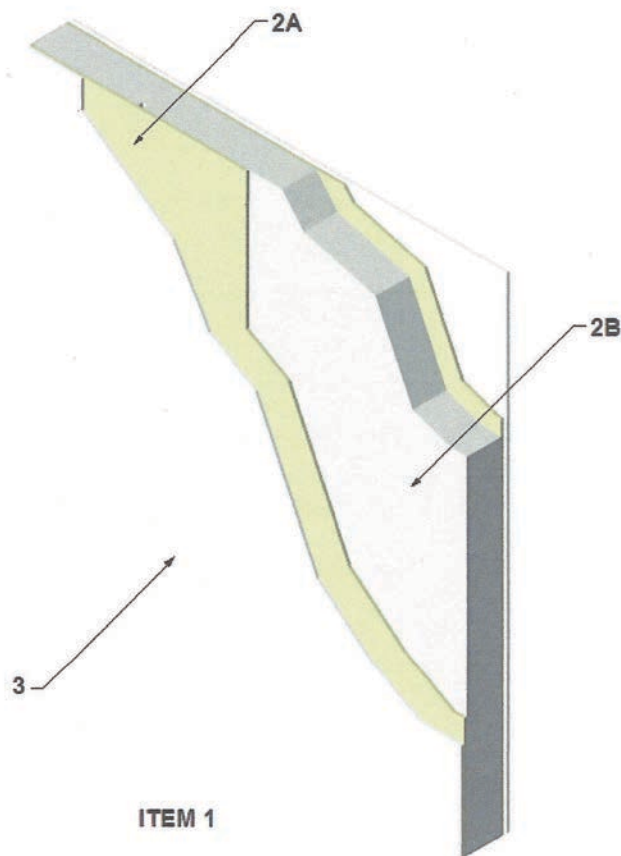
Block splines are manufactured in the same manner as the SIP except with an overall thickness that is 1 in. less than the overall thickness of the panel to be joined.

3. **GYPSUM BOARD:** Apply two layers of 5/8 in. thick, Type X gypsum board to the interior and exterior side of the wall assembly (Item 1), oriented vertically with the joints staggered 16 in. on center (oc). Secure the base layer using 1-5/8 in. long bugle-head self-drilling screws, spaced nominally 12 in. oc around the perimeter and 24 in. oc in the field. Secure the second layer using 2 in. long bugle-head self-drilling screws, spaced nominally 12 in. oc around the perimeter and 24 in. oc in the field.
- A. **JOINT TAPE AND COMPOUND (Not Shown)**
– Apply a level 2 finish of vinyl or casein, dry or premixed, joint compound applied in two coats to all exposed fastener heads and gypsum board joints. Embed min. 2 in. wide paper, plastic, or fiberglass tape in first layer of compound over joints in gypsum board (Item 3).
4. **BEARING PLATES (Not Shown):** Install nominal No. 2 lumber plates to the top and bottom of the wall panels (Item 2) in the pre-cut channel in the foam core covering the entire surface area and secure to the skins (Item 2A) using 8d common nails spaced nominal 6 in. oc. Prior to installing, apply a layer of acrylic latex caulk across the mating face with the EPS foam core (Item 2B).



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Plasti-Fab Ltd.
Design No. PFL/CWP 60-02
EXTERIOR WALL SYSTEMS
Insulspan SIPs by Plasti-Fab 6-1/2, 8-1/4, or 10-1/4 in. Structural Insulated Panels
ASTM E119
CAN/ULC-S101
Rating: 1 Hour
Restricted Superimposed Load: See Item 1



1. WALL ASSEMBLY: Construct a wall assembly using elements described in Items 2 through 4 up to a max. of 10 ft. in height with a max. restricted superimposed load of 60% of the allowable capacity of the panel.

2. CERTIFIED COMPANIES: Plasti-Fab Ltd.

CERTIFIED PRODUCT: Insulspan SIPs by Plasti-Fab Structural Insulated Panels



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WALL PANELS: Install Insulspan SIPs by Plasti-Fab Structural Insulated Panels consisting of the following elements:

- A. **FACING** – Nominal 7/16 in. thick OSB skins factory bonded to interior and exterior sides of EPS foam core (Item 2B) conforming and identified as meeting DOC PS 2-04, Exposure 1, Rated Sheathing with a span index of 24/16 and/or CAN/CSA O325.0, Exterior Grade Sheathing with a span index of 1R24/2F16.
- B. **CORE** – Use ASTM C578 compliant and Listed Type I EPS (min. 0.9 pcf) with a flame spread rating not exceeding 75 and smoke-developed rating not exceeding 450 per ASTM E84 and/or CAN/ULC-S701 compliant and Listed Type 1 EPS with a flame spread rating not exceeding 500 per CAN/ULC-S102.2.
- C. **ADHESIVE (Not Shown)** – Facing materials are adhered to the core material using a structural adhesive. The adhesive is applied during the lamination procedure in accordance with the in-plant quality system documentation.
- D. **SPLINE (Not Shown)** – Structural Insulated Panels are interconnected with nominal 2 x 6 No. 2 lumber splines. At each panel joint, one 2 x 6 spline is installed in the precut

channels in the foam core of the panel and secured to the skins (Item 2A) using 1-5/8 in. long ring shank steel nails spaced at a nominal 12 in. oc.

3. **GYPSUM BOARD:** Apply one layer of 5/8 in. thick, Listed Type C gypsum board to the interior and exterior side of the wall assembly (Item 1) oriented vertically. Secure the gypsum board using 1-5/8 in. long bugle-head self-drilling screws, spaced nominally 8 in. on center (oc) around the perimeter and 12 in. oc in the field.
 - A. **JOINT TAPE AND COMPOUND (Not Shown)** – Apply a level 2 finish of vinyl or casein, dry or premixed joint compound applied in two coats to all exposed fastener heads and gypsum board joints. Embed min. 2 in. wide paper, plastic, or fiberglass tape in first layer of compound over joints in gypsum board (Item 3).
4. **BEARING PLATES (Not Shown):** Panels are attached to nominal 2 x 6 No. 2 lumber top and bottom plates recessed into the precut channel in the foam core. Skins (Item 2A) are attached to the panels using 8d common nails spaced nominal 6 in. oc. Prior to installing, apply a layer of acrylic latex caulk across the mating face with the EPS foam core (Item 2B).

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07 41 43 Composite Roof Panels

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Design Number: PFL / CRP 60-01

ROOF-CEILING SYSTEMS

Plasti-Fab Ltd.

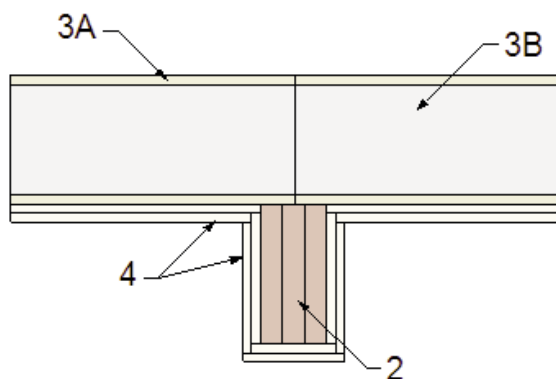
Insulspan SIPs by Plasti-Fab 4½ to 10½ in. Structural Insulated Panels

ASTM E 119 – 2012 Edition

CAN/ULC S 101 – 2007 Edition

Restricted Superimposed Load: See Item 1

Rating – 1 Hour



ITEM 1

1. CEILING ASSEMBLY: Construct a ceiling assembly using elements described in Items 2 through 5 with a maximum restricted superimposed load of 40% of the allowable capacity of the panel.

2. WOOD BEAMS/JOIST: Use minimum 4-1/2 in. wide x 9-1/2 in. deep engineered wood beam/joist spaced in accordance with manufacturer's design specifications and building code requirements.

3. CERTIFIED COMPANIES: Plasti-Fab, Ltd.

CERTIFIED PRODUCT: Insulspan SIPs by Plasti-Fab Structural Insulated Panels

ROOF PANELS: Install Insulspan SIPs by Plasti-Fab Structural Insulated Panels consisting of the following elements:

A. FACING: Nominal 7/16 in. thick OSB skins factory bonded to interior and exterior sides of EPS foam core (Item 3B) conforming and identified as meeting DOC PS 2-04, Exposure 1, Rated Sheathing with a span index of 24/16 and/or CAN/CSA O325.0, Exterior Grade Sheathing with a span index of 1R24/2F16.

B. CORE: Use ASTM C578 compliant and Listed Type I EPS (min. 0.9 pcf) with a flame spread rating not exceeding 75 and smoke-developed rating not exceeding 450 per ASTM E84 and/or CAN/ULC S701 compliant and Listed Type 1 EPS with a flame spread rating not exceeding 500 per CAN/ULC S102.2.

C. ADHESIVE (Not Shown): Facing materials are adhered to the core material using a structural adhesive. The adhesive is applied during the

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lamination procedure in accordance with the in-plant quality system documentation.

- D. SPLINE (Not Shown): Structural Insulated Panels are interconnected with surface splines or block splines.

Surface splines typically consist of 3 in. wide by 7/16 in. thick OSB. 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.

Block splines are manufactured in the same manner as the SIP except with an overall thickness that is 1 in. less than the overall thickness of the panel to be joined.

4. GYPSUM BOARD: Apply two (2) layers of 5/8 in. thick, Type X gypsum board to the interior side of the ceiling assembly (Item 1) oriented with the long dimension oriented perpendicular to the wood beams (Item 2). Secure the base layer using 1-1/4 in. long, bugle head self-drilling screws spaced nominally 8 in. on center (oc) around the perimeter and 12 in. oc in the field. Secure the second layer using 2 in. long bugle head self-drilling screws spaced nominally 8 in. oc around the perimeter and 12 in. oc in the field. Stagger joints of base layer and second layer.

- A. JOINT TAPE AND COMPOUND – (Not Shown) Apply a level 2 finish of vinyl or casein, dry or premixed joint compound applied in two coats to all exposed fastener heads and gypsum board joints. Embed minimum 2 in. wide paper, plastic, or fiberglass tape in first layer of compound over joints in gypsum board (Item 3).

5. ROOF COVERING (Not Shown): Use a Class A, B, or C hot mopped or cold applied roof covering, or use a ballasted, adhered or mechanically attached single ply roofing membrane.

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Design Number: PFL/CRP 60-02

ROOF-CEILING SYSTEMS

Plasti-Fab, Ltd.

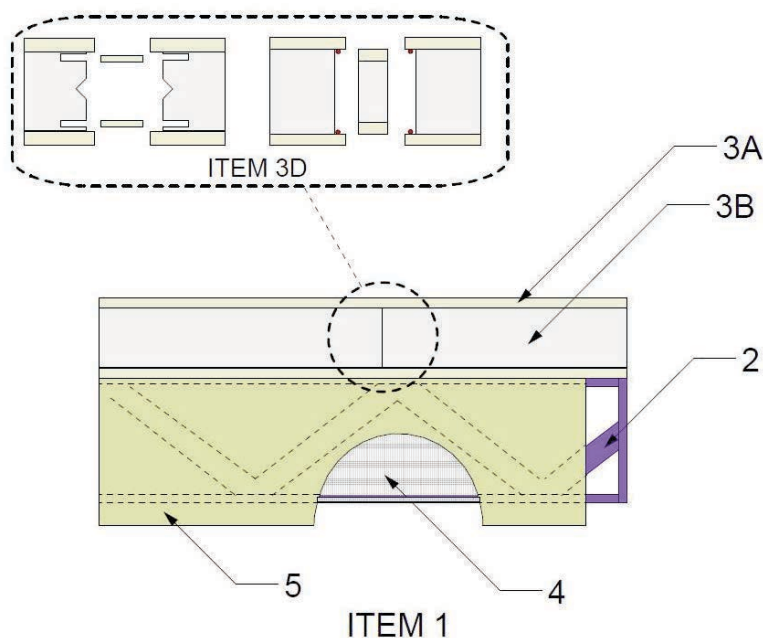
Insulspan SIPs by Plasti-Fab 4½ to 10½ in. Structural Insulated Panels

ASTM E 119 – 2012 Edition

CAN/ULC S 101 – 2007 Edition

Rating – 1 Hour

Restricted Superimposed Load: See Item 1



1. CEILING ASSEMBLY: Construct ceiling assembly using the elements described in Items 2 through 6 with a maximum restricted superimposed load of 57% of the allowable capacity of the panel.
2. STEEL JOIST: Use minimum Type 10K1 open-web steel joist constructed and spaced in accordance with manufacturer's design specifications and building code requirements.
3. CERTIFIED COMPANIES: Plasti-Fab, Ltd.

CERTIFIED PRODUCT: Insulspan SIPs by Plasti-Fab Structural Insulated Panels

ROOF PANELS: Install Insulspan SIPs by Plasti-Fab Structural Insulated Panels consisting of the following elements:

- A. FACING: Nominal 7/16 in. thick OSB skins factory bonded to interior and exterior sides of EPS foam core (Item 3A) conforming and identified as meeting DOC PS 2-04, Exposure 1, Rated Sheathing with a span

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index of 24/16 and/or CAN/CSA O325.0, Exterior Grade Sheathing with a span index of 1R24/2F16.

- B. CORE: Use ASTM C578 compliant and Listed Type I EPS (min. 0.9 pcf) with a flame spread rating not exceeding 75 and smoke-developed rating not exceeding 450 per ASTM E84 and/or CAN/ULC S701 compliant and Listed Type 1 EPS with a flame spread rating not exceeding 500 per CAN/ULC S102.2.

- C. ADHESIVE (Not Shown): Facing materials are adhered to the core material using a structural adhesive. The adhesive is applied during the lamination procedure in accordance with the in-plant quality system documentation.

- D. SPLINE: Structural Insulated Panels are interconnected with surface splines or block splines.

Surface splines typically consist of 3 in. wide by 7/16 in. thick OSB. 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.

Block splines are manufactured in the same manner as the SIP except with an overall thickness that is 1 in. less than the overall thickness of the panel to be joined.

4. METAL LATH: Install 3/8 in. expanded galvanized steel mesh weighing 3.4 lb/yd. to cover the exposed side of the steel joist (Item 2). Secure the lath using No. 20 SWG steel tie wire at the mid-point of alternate web members. Install the lath on the bottom of the roof panels (Item 3) using 1-1/2 in. deep x 15/16 in. wide C-pint staples spaced 7 in. on center (oc).

5. SPRAY APPLIED FIBER: Apply to the wetted surfaces of steel joist and panels,

a minimum 11 pcf dry density Listed spray applied fiber (CAFCO BLAZE-SHIELD Type DC-F) to the metal lath (Item 6). Apply at a minimum thickness of 2-1/4 in. to all mesh surfaces. Please reference the CAFCO BLAZE-SHIELD Type DC-F Code Evaluation Report for more details.

6. ROOF COVERING (Not Shown): Use a Class A, B, or C hot mopped or cold applied roof covering, or use a ballasted, adhered or mechanically attached single ply roofing membrane.