FLOOR SIPs
Installation Manual

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1. General Requirements

1.1 Scope
The basic design and construction requirements for the Thermapan Structural Insulated Panel (SIP) floor systems are set forth in this specification. Criteria for materials, environmental control, design loads, and structural design are included. Where requirements are based on internationally recognized standards and specifications, these standards and specifications are referenced without elaboration.

Installers shall reference engineering design package for fastening arrangements.

2. Materials

2.1 Floor SIP (See Detail FL-1)
The Thermapan SIP is composed of an expanded polystyrene (EPS) foam core laminated between two layers of oriented strand board (OSB) with a structural adhesive.

2.2 Framing Lumber shall be DOC PS 20 or NLGA No.2 or better.

2.3 Wire nails, ring nails, spikes and staples shall conform to CSA B111 or ANSI B111.1.

2.4 Wood screws shall conform to ANSI/ASME B18.6.1.

2.5 SIP screws shall conform to ICC-AC233.

2.6 Caulking Compounds shall conform to CAN/CGSB 19.13 or ASTM C 920.

2.7 Polyethylene Sheeting shall conform to CAN/CGSB-37.2, CAN/CGSB-37.16, or ASTM D 4397.

2.8 Low expansion foam seal shall conform to AAMA 812-04.

2.9 Structural adhesive shall conform to CAN/CGSB 71GP26, APA AFG-01 or ASTM D3498.

3. Decay and Termite Protection

3.1 The minimum vertical clearance between structural wood elements and the finished ground level is not to be less than 150 mm (6”).

3.2 In localities where termites are known to occur, clearance between the exposed exterior osb skin of the floor SIP and the finished ground level directly below shall be not less than 450 mm (18”).
4. Interior Finish

4.1 A plywood underlay may be required for hardwood and ceramic tile finishes.

5. Electrical Wiring

5.1 It is recommended to fasten wiring to the exterior OSB layer and drill access through to interior layer.

5.2 Exposed wire shall conform to local building code.

6. Plumbing

6.1 Vertical plumbing penetrations 6” in diameter or less can be cut out of the floor SIP.
MATERIALS ESTIMATING
Floors – Estimation Only

Lumber Requirements:

- Single lumber edging for ledger
- Double lumber edging under wall

Caulking and Sealant Requirements:

- Every 1200 sqft (111 m²) of SIP equals 1 case of Expandable Foam
- Every 2000 sqft (185 m²) of SIP requires 1 case of Sealant

Fasteners:

- Recommend 2” (50mm) Ring nail or 2” (50mm) screws for connection to panel
- ~ 1.25 times the square footage of SIPs... nailing of spline
- SIP screws use 40% of Floor square footage
All sealants, FOAM (A) or CAULKING (B), should be applied onto the SIP in a continuous rectangular pattern along the outer most edge of the area to be sealed.

(A) A low expansion EXPANDABLE FOAM SEALANT should conform to the AAMA 812-04 standard. Apply a 1/2 inch or a 12.5 mm diameter of a continuous bead of expandable foam sealant onto the SIP:

(B) A CAULKING SEALANT should conform to ASTM C920-02 and/or CAN/CGSB 19.13-M. Apply a 3/8 inch or a 10 mm diameter continuous bead of caulking onto the lumber spline:
(1) Foam to Foam: Use a low expansion foam sealant.

(2) Foam to Wood: Use a low expansion foam sealant.

(3) Wood to Wood: Use caulking and a low expansion foam sealant.
NOTE: REFER TO AIR BARRIER DETAILS (AB-1 & AB-2).
NOTE 2: REFERENCE FLOOR PANEL FASTENING TABLE ON CONNECTION DESIGN (CD) SHEET OF ENGINEERING DRAWINGS
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