

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07240 – EXTERIOR WALL INSULATION AND FINISH SYSTEM

PART 1 GENERAL

1.01 DESCRIPTION:

- A. Provide all materials and labor to install Precision Panel Structural Insulated Panels (SIPs) as shown on the Drawings and specifications herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. General Requirements: Division 1 Sections

1.03 QUALITY ASSURANCE:

- A. Third Party Listing
 - 1. Each Precision Panel Structural Insulated Panel type shown on the drawings shall be labeled indicating the listing program of a third party agency.
- B. Model Code Listing
 - 1. Each Precision Panel Structural Insulated Panel type shown on the drawings shall be labeled indicating conformance to a model code program.

1.04 APPLICATORS:

- A. The structural insulated panel applicator shall be an applicator approved by Precision Panel Structures, Inc. and have applied the system on at least 1 project that has been supervised by Precision Panel’s Panel Installation Crew. All work shall be performed in strict accordance with Precision Panel’s instructions.

1.05 SUBMITTALS:

- A. Provide evidence of compliance with ICC-ES Evaluation Report: ESR – 1138.
- B. Precision Panel shall certify that panel assemblies provided for this project have been tested in accordance with the following ASTM, UL and UBC Standards:

| | | |
|------------|---------------|------------|
| ASTM E 72 | ASTM D 1183 C | ASTM E 695 |
| ASTM C 297 | ASTM E 455 | UBC 26-3 |
| UL 1256 | ASTM E 119 | |
- C. Manufacturer shall supply copy of third party quality control product certificate.
- D. Provide material data sheets for all the panel material components described in 2.01 of this specification.
- E. When required, all shop drawings and calculations shall be reviewed by and bear the seal and signature of a registered PE and / or R.A. retained by the panel manufacturer.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Immediately upon delivery to the job site, all Precision Panel Structural Insulated Panels shall be stored in a protected area and shall be supported in a manner to prevent contact with the ground and isolated from ground moisture.
- B. All Precision Panel SIPs shall be covered and protected prior to and / or after installation from prolonged exposure to moisture and / or sunlight.
- C. Protect Precision Panel SIPs from construction traffic.
- D. Remove damaged or otherwise unsuitable insulated panels, so ascertained by the owner, immediately from the job site.

PART 2 PRODUCTS

2.01 MATERIAL DESCRIPTION

- A. Structural Insulated Panels (SIPs) – Manufactured by Precision Panel Structures, Inc., of Eagle, Idaho or North East Precision Panel of Manchester, NH. Alternate manufacturers must be identified and submitted for review prior to the bid date. No alternates will be considered after the bid date. The SIP is defined as a pressure laminated stress-skin panel consisting of the following:
 - 1. Expanded Polystyrene Core – minimum of .95 pcf Certified EPS complying with ASTM C 578-87a (higher densities may be specified). Insulation manufacturer must provide evidence of Third Party Inspection and certification with a listing agency.
 - 2. OSB – Exterior and / or interior skins – shall be identified on the insulated panel with an approved performance rating mark. Minimum physical properties shall be tested as described in PS-2.
 - 3. Lamination Adhesive – Laminating adhesive with in-use temperature of –40 degrees F to +250 degrees F (-40 C to 121 C).
- B. Splines – Splines used in connection and / or joining the SIPs shall be supplied by Precision Panel Structures, Inc.
- C. Dimensional Lumber Splines – 2x framing splines used in connection panels shall be #2 grade (or better) and in accordance with Section 06100, supplied by the SIP manufacturer.
- D. Panel Fasteners – Shall be corrosion resistive screws as supplied by the SIP manufacturer
- E. Spline and Lumber Fasteners – shall be galvanized screws, nails, or staples supplied SIP installer and installed per Precision Panel Construction Details.
- F. Foam Sealant – a sealant compatible with all components of the panel and adjacent materials as supplied by the SIP manufacturer, and installed per Precision Panel Construction Details.
- G. Construction Adhesive – compatible with all components of the panel and adjacent materials, supplied by the Sip manufacturer, and installed per manufacturer’s details.

2.02 PERFORMANCE CHARACTERISTICS:

- A. Panels to be sized as required and shown on the panel drawings provided by the manufacturer.

- B. Insulated panel tolerance shall comply with values listed in manufacturer's quality control manual.
- C. Structural Testing – Each panel type shown on the panel drawings shall meet or exceed the project design loads when tested in accordance with the following methods:
 - 1. *Axial Load* – test method ASTM E 72, Section 9
 - 2. *Compressive Load* – test method ASTM E 72, Section 9
 - 3. *Transverse Load* – test method ASTM E 72, Section 11
 - 4. *Concentrated Load* – test method ASTM E 72, Section 13
 - 5. *Racking Load* – test method ASTM E 72, Section 14
 - 6. *Impact Load* – test method ASTM E 695-79
 - 7. *Tension Testing* – test method ASTM C 297
 - 8. *Cyclical Aging* – test method ASTM D1183-96e1
- D. Fire Testing – panel shall have the following fire tests.
 - 1. ASTM Method E 84 – Surface burning characteristics conducted for interior and exterior skins of insulated building panels.
 - 2. ASTM Method E 84 – Surface burning characteristics conducted for rigid insulation core.
 - 3. UBC 26-3 – Room Fire Test Standard for Interior of Foam Plastic Systems.
 - 4. UL 1256 – Fire Test of Roof Deck Constructions (using 12.25” thick SIP Roof Assembly)
 - 5. ASTM Method E 119-00a – Fire Test of Building Construction and Materials for a fire endurance rating of 1-hour while bearing a load.

2.03 MANUFACTURER:

- A. Approved panel manufacturers are:

Precision Panel Structures, Inc.
1447 East State Street
Eagle, Idaho 83616
Tel: 208 – 939 – 2610
Fax: 208 – 939 – 9905
www.PrecisionPanel.com

North East Precision Panel, Inc.
55 South Commercial Street
Manchester, New Hampshire 03101
Tel: 877 - 637- 2635
Fax: 603 - 765 -1591

PART 3 EXECUTION

3.01 GENERAL:

- A. Preparation:
 - 1. Inspect the area (substrate, grade and other) to determine that conditions are satisfactory for the installation of the insulated panels. The contractor shall report in writing to the general contractor and owner any defects or conditions, which may adversely influence completion or performance of specified work. Do not proceed with installation until adverse conditions are corrected.
- B. Installation:
 - 1. Before starting, the panel installer shall coordinate with the general contractor to discuss the procedures necessary for this work.

2. Installation shall be in strict accordance with Precision Panel Construction Details, instructions, panel drawings and contract documents. Any conflicts shall be resolved in writing.

3.02 PROTECTION:

- A. When insulated panels are delivered to the site, do not allow the insulated panels to come in contact with the ground. Store the insulated panels so they will remain dry.
- B. The insulated panels are to be supported when stored. Improper storage of the insulated panels may cause installation and / or tolerance problems in the field.
- C. Insulated panels must be protected from weather by materials that will provide temporary protection. Insulated panels with interior finished skins that can be damaged by weather shall be protected at the end of each day to avoid damage.
- D. Insulated panels that have become damaged and / or excessively wet shall be removed from the site and replaced with new panels.

3.03 CLEAN-UP:

- A. Upon completion of the work, remove unused insulated panels, material and equipment from the site.
- B. Keep premises free from accumulation of waste materials and rubbish and remove all debris from the site on a daily basis.