

SECTION 06120 – STRUCTURAL INSULATED PANELS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes Structural Insulated Panels (SIP).
- B. Related Sections include the following:
 - 1. Section 06100 – Rough Carpentry
 - 2. Section 06130 – Timber Framing

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide SIPs capable of withstanding design loads including dead load, live loads, wind loads and seismic loads. Design loads shall be in compliance with the requirements of the local Building Code.

1.4 SUBMITTALS

- A. Product Data: SIP manufacturer's product literature including structural properties and installation instructions.
- B. Shop Drawings: Show fully dimensioned fabrication and installation details for SIPs. Shop drawings shall be prepared under the supervision of a Professional Engineer.
- C. Evaluation report from ICC-ES or Canadian Construction Materials Centre.

1.5 QUALITY ASSURANCE

- A. SIP Manufacturer shall be a member of the Structural Insulated Panel Association (SIPA).
- B. Structural Design: A Professional Engineer shall perform a structural analysis and design of the SIP assemblies in accordance with the design loads.

- C. Installation Contractor must have experience on projects of similar size and scope. Lead installer / supervisor shall have a minimum of 3 years experience installing SIPs or have completed a certifying curriculum at a dedicated SIP training program such as those provided by the United Brotherhood of Carpenters and Joiners of America or equivalent.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. SIPs shall be kept dry and protected with waterproof covering during transportation and storage.
- B. Exercise care to prevent crushing of SIP edges with cargo hold down straps during transportation.
- C. Carefully load and unload SIPs from trucks to prevent damage to the panels.
- D. Store SIPs elevated off of the ground on sleepers.
- E. Take care in handling SIPs to prevent delamination. Do not lift panels by the top skin.

1.7 COORDINATION

- A. Time delivery and installation of SIPs to avoid extended on-site storage and to avoid delaying progress of other trades whose work must follow the installation of SIPs.

PART 2 – PRODUCTS

2.1 STRUCTURAL INSULATED PANELS (SIP)

- A. Oriented Strand Board (OSB): 7/16” thick minimum.
- B. Core: [Expanded Polystyrene (EPS) shall comply with ASTM C578 and shall have a minimum density of 0.9. pcf.] [polyurethane foam core] [extruded polystyrene (XPS) shall comply with ASTM C578 and shall have a minimum density of 1.3 pcf]
- C. Adhesive: ASTM D2559

2.2 LUMBER

- A. Grade and Species: Visually graded dimension lumber No. 2 or better of any of the following species:

1. Spruce-Pine-Fir; NLGA
 2. Hem-Fir (North); WCLIB or WWPA
 3. Douglas Fir – Larch; WCLIB or WWPA
 4. Southern Pine; SPIB
- B. Lumber shall be kiln dried to not more than 19% moisture content
- C. Lumber shall be clearly marked with grade stamp of grading agency.
- D. Engineered wood products shall be used where required for structural adequacy.
1. Laminated Veneer Lumber (LVL)
 2. Parallel Strand Lumber (LSL)
 3. Laminated Strand Lumber (LSL)

2.3 FASTENERS

- A. Common Nails: ASTM F1667.
- B. Panel Screws: screws with pancake head, minimal thread diameter 0.255 inches, minimum shank diameter 0.190 inches and a minimum head diameter 0.625 inches.

2.4 FABRICATION

- A. Cut SIPs to accurate lengths, angles, and sizes to produce close fitting joints.
- B. Remove foam as required to accommodate wood blocking and splines.
- C. Provide electrical wiring chases in foam core where required.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Examine foundations, sills, framing and other surfaces to receive SIPs and verify that conditions are suitable for the installation of SIPs. Report any unsatisfactory conditions to the Contractor. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hoist SIPs in place by lifting equipment suited to size of panels. Exercise care to prevent damage to SIPs.

- B. Install SIPs plumb, square and true to line.
- C. Fill all panel joints with expanding urethane foam or seal by other approved method..
- D. Repair or replace all damaged SIPs.
- E. Remove debris from project site and legally dispose of debris.

END OF SECTION 06120