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

3. Section 07466 -Fiber Cement Board

4. Section 07250 - “Weather Barriers” for water-resistive barrier

5. Section 07900 – Joint Sealants

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide SIPs capable of withstanding design loads including dead loads, live loads, and wind loads. Design loads shall comply 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.

1.5 QUALITY ASSURANCE

A. Structural Insulated Panels shall have a valid Florida Product Approval.

B. Structural Design: A Professional Engineer shall perform a structural analysis and design of the SIP assembly to ensure the system design complies with the design loads.

C. Installation Contractor must follow all Panel Manufacturer Installation Instructions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. SIPs shall be kept dry and protected with a 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 the ground up on sleepers. Keep panels level and do not stack excessive weight on the Sip to avoid warping and or compressing the panel thickness.

E. Take care in handling SIPs to prevent delamination. Do not lift panels by the top skin.

1.7 COORDINATION

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

STRUCTURAL INSULATED PANELS 06120-1

PART 2- PRODUCTS

2.1 STRUCTURAL INSULATED PANELS (SIP)

A. Subject to compliance with the specified requirements, SIP shall be manufactured by Innova Panel, LLC.

B. Panel Skins:

a) Oriented Strand Board (OSB): 5/8” thick minimum

b) Cement Fiber Board: 5/16” minimum, Board shall comply with all requirements of ASTM 1185 and 1186.

c) Magnesium Oxide Board: 12mm minimum thickness. The board shall comply with all requirements of ASTM 1185 & 1186.

C. Core: EXPANDED Polystyrene (EPS) shall comply with ASTM C578 and shall have a minimum density of 0.9 pcf. The EPS shall be treated with borate or other to guard against termites.

D. 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 and have a maximum of 19% moisture content. Do not install wet lumber in the SIP system. Lumber should fit snugly into the SIP. Do not beat the lumber into the SIP. Trim lumber as necessary to fit properly within the SIP.

C. Lumber shall be marked clearly with the grade stamp of the 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 of 0.255 inches, minimum shank diameter of 0.190 inches, and a minimum head diameter of 0.625 inches.

C. Grabber Cement Board Screws: Length as specified. Screws shall have a 10.5 mm wafer head with nibs for flush seating, an 8-gauge shank diameter with a high low (alternating) thread, and a self-drilling point. All fasteners utilized with cement fiber or MGO board shall be treated with a corrosion-resistant coating per ASTM B117.

2.4 FABRICATION

A. Common Nails: Ring Shank only, ASTM F1667.

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 the size of panels. Exercise care to prevent damage to SIPs.

B. Install SIPs plumb, square, and true to line. Sufficiently brace all SIP walls to prevent movement until the roof panels are installed.

C. Fill all panel joints with expanding urethane foam or seal by another approved method to ensure the installation is nearly airtight. Once the roof is dried in, SIP Vapor tape all wall panel seams on the winter warm side of the panel.

D. Repair or replace all damaged SIPs.

E. After the installation is complete, surface caulk all SIP joints, interior and exterior before installing the vapor tape.

F. It is the SIP installer's responsibility to ensure all panels are properly sealed during the installation process. The installed SIP should be nearly air-tight once the installation is complete.

G. The Contractor shall protect completed work from the elements during erection until the product is dried in and the specified waterproofing is installed.

H. Remove debris from the project site and legally dispose of debris.

END OF SECTION 06120