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 PREFORMANCE REQUIREMENTS

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

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 assembles in accordance 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 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 unloads 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. Subject to compliance with the specified requirements, SIP shall be manufactured by Innova Eco Building System.

B. Panel Skins:
a) Oriented Strand Board (OSB): 7/16” thick minimum
b) Cement Fiber Board: 5/16” minimum, Board shall comply with all requirements of ASTM 1185 and 1186.
c) Magnesium Oxide Board: 8mm minimum thickness for state of Florida conformance, 10mm for Dade County Compliance. 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.] EP{S shall be treated with borate for 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 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.
C. Grabber Cement Board Screws: Length as specified. Screws shall have a 10.5 mm wafer head with nibbs for flush seating, 8 gauge shank diameter with high low (alternating) thread and

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: 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 or 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 damages SIPs.
E. Remove debris from project site and legally dispose of debris.

END OF SECTION 06120