



## SECTION 06120

### STRUCTURAL WALL PANELS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Solid wall panels, installed as:
  - 1. Structural insulated exterior wall panels.
  - 2. Structural insulated interior wall panels.
  - 3. Structural Insulated roof panels.
  - 4. Structural insulated floor panels.

##### 1.2 RELATED SECTIONS

- A. Section 06090 – Wood and Plastic Fastenings
- B. Section 06160 - Sheathing
- C. Section 06170 - Prefabricated Structural Wood
- D. Section 07210 – Building Insulation

##### 1.3 WORK INCLUDES

- A. Furnish all pre-fabricated wall, roof and floor panels and accessories required to provide a complete exterior skin package, including all splines, adhesives, fasteners, sill plates and miscellaneous blocking.
- B. Coordinate electrical work with panel fabrication for correct placement of electrical chases.

##### 1.4 REFERENCES

- A. Load Tables and Shear Tables see Appendix A.
- B. ICC-ES Report Number for IBC and IRC ESR-1582. Code stamped panels are available at additional cost.
- C. ASTM E72-98 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction, 2002.

- D. AC-04 – Acceptance Criteria for Sandwich Panels,
- E. ASTM E119 – Fire Tests of Building Construction and Materials.
- F. ASTM C739 – Standard Specification for Cellulosic Fiber (Wood Base) Loose-Fill Thermal Insulation,
- G. ASTM C1363-97 – Standard Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
- I. ASTM E 90-02 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission of Building Partitions.

#### 1.5 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Refer to structural drawings and load tables for performance criteria. Please see appendix A for load tables.
- B. Fire Safety Characteristics:
  - 1. ASTM E-119: 4-3/8" Panels shall have a 1.5 hour fire rating. 7-7/8" panels shall have a 2.5 hour fire rating. (In accordance with test procedure, rating includes installation of 1/2" gypsum board to meet 15 minute finish rating.)
- C. Thermal and Moisture Properties:
  - 1. 4-3/8" panel: Dynamic R-value = 13.14
  - 2. 7-7/8" panel: Dynamic R-value = 25.44

#### 1.6 SUBMITTALS

- A. Appendix B: Furnish manufacturer's customized manual with detailed installation instructions and fabrication and erection drawings for all pre-cut panel systems, including thickness, profile, facing and core materials, anchorage and joint details, panel sizes, rough openings and electrical chases required to erect a complete exterior skin package. Please see appendix B for a generic installation manual. Indicate locations of electrical chases by marking on panels. Panels to be numbered to show relationship of one panel to another.
- B. Shop Drawings: Shop Drawings shall be complete with specific instructions for the placement of utilities, windows and doors. All shop drawings, including field measurements of panel length and placement of utilities and window and door openings must be approved before panel production can begin.

#### 1.7 QUALITY ASSURANCE

- A. Field Supervision by Manufacturer: If desired, manufacturer will provide contractor with a qualified representative to provide field instruction on the job site during installation of structural panels.
- B. Preinstallation Meeting: Conduct preinstallation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and

manufacturer's warranty requirements. If desired, manufacturer's representative can attend.

#### 1.8 SOURCE QUALITY CONTROL

- A. Panels shall be of materials specifically designed for exterior wall, interior wall, roof and floor panels. Fabricated work surfaces shall comply with all current codes and regulations.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store panels in a protected area and supported at least 6" above the ground prevent contact.
- B. Prior to installation, panels shall be covered and protected from exposure to sunlight and moisture.
- C. After installation, all panels shall be covered to prevent contact with water on all exposed panel edges and faces.

#### 1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits for OSB and microlam exposed surfaces.

#### 1.11 COORDINATION

- A. Field Measurements: Secure field measurements before preparation of shop drawings and fabrication, where possible, for proper fabrication and installation of the work.

#### 1.12 WARRANTY

- A. Project Warranty: Refer to conditions of the contract for project warranty provisions.
- B. Manufacturer's Warranty: Panel manufacturer shall provide a one year warranty covering reasonable costs of repairing or replacing defective panels, and a warranty during years two through ten (2-10) limited to materials replacement or refund.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Agriboard Industries PO Box 151, Electra, TX. 76360 Tel. (866)495-3595 Tel: (940) 495-3590. Fax: (940) 495-3597. Email: [sales@agriboard.com](mailto:sales@agriboard.com). [www.agriboard.com](http://www.agriboard.com).
- B. Substitutions: Please see appendix C for a list of manufacturers of Structural Wall Panels who utilize green and renewable materials.

#### 2.2 MATERIALS

- A. Structural Panels: Pre-fabricated structural wall, roof and floor panel assemblies, as manufactured by Agriboard Industries, Electra, Texas. 1(866) 495-3595.
  - 1. Panel Assembly: 7-7/8" or 4-3/8" in total thickness, in widths not exceeding 9'-0", and lengths not exceeding 24'-0", horizontal or vertical configurations.

2. Face Material: Exterior and interior panel skin to be a single sheet of 7/16" thick Exposure 1 Oriented Strand Board (OSB), square edges, meeting standards of the American Plywood Association.
    - a. Exposed interior face is to be finished with a clear fire retardant.
  3. Core Material: Insulating layer of compressed wheat straw, in one or two layers of 3-1/2" each. Density equals 13 lbs./cu.ft. minimum.
    - a. Coordinate electrical plans so that manufacturer provides chases and cutouts for electrical outlets (if desired).
- B. Products provided by panel manufacturer:
1. Panels in sizes and configurations indicated on drawings and required for completion of project.
  2. Sill plates.
  3. Connecting keys shown on drawings related to panel installation.
  4. Adhesives.
  5. Fasteners, ties and screws.
- C. Contractor to provide:
1. Foam seal at Sill Plate: Ludlow Sill Seal, 1/4" X sill plate width, ribbed polyethylene foam gasket, as manufactured by Tyco International, or as recommended by panel manufacturer.
  2. J-bolts: As indicated on drawings and required for completion of project.
  3. Crane and other necessary equipment of sufficient capacity for wall and roof panel placement and erection.
    - a. Panel weight: Approximately 14 pounds per square foot for 7 7/8" thick panels and 9 pounds per square foot for 4 3/8" panels.
    - b. Panel size: Maximum size 9 feet X 24 feet.
- D. Provide evidence of third party testing of panels and approval by governing codes.
- E. Panel Tolerance:
1. Thickness: 1/8"
  2. Squareness: Plus or minus 1/4" in maximum.
  3. Fabricated Panel Length: Plus or minus 1/8" maximum.
  4. Fabricated Panel Width: Plus or minus 1/8" maximum.
- F. Sub-frame: TimberStrand Grade 1.5E or similar.
- G. Fasteners for panel assembly:
1. IsoSet SP3030D adhesive, Ashland Chemical.
  2. RSS wood screws (ICBO-ES ER-5883), GRK Canada Ltd.
  3. 16 gauge, galvanized 7600CRIII Series Staples, Duo-Fast.

## 2.3 FABRICATION

- A. Fabricate structural insulated panels and accessory items in accordance with manufacturer's recommendations and approved submittals and/or drawings.
1. Make panel lines, breaks and angles sharp and true.
  2. Keep plane surfaces free from warp or buckle.

- B. Take field measurements prior to commencement of shop fabrication.
  - 1. Field fabrication is allowed only to ensure proper fit. Keep field modification to a minimum with majority of fabrication being done under controlled shop conditions.
  - 2. Where final panel dimensions cannot be established by field measurement before commencement of panel manufacturing, make allowance for field adjustments and thermal movement as recommended by panel manufacturer.
- C. Fabricate panels to sizes indicated.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Contractor shall inspect conditions of substrate, grade and other conditions which may affect correct installation of panels. Examine alignment of foundations and structural frames prior to panel erection. Any adverse conditions are to be reported in writing to Agriboard Industries. Do not proceed with installation until adverse conditions are corrected.

### 3.2 INSTALLATION

- A. Installation shall be in strict accordance with manufacturer's published instructions and customized installation manual, details and structural drawings. Any conflicts between these documents are to be resolved in writing. Field modifications resulting from conflicts are to be reviewed by panel manufacturer's engineer and are to be signed and/or sealed in accordance with local governing authorities.

### 3.3 ERECTION

- A. General:
  - 1. Provide a complete panel installation, including plates, adhesives, ties and fasteners. Panels are to be installed as shown on drawings and as specified, and in accordance with manufacturer's recommendations.
  - 2. Panels are to be fastened through connecting splines and steel plates using the provided adhesive, screws and nails in accordance with the provided detailed installation manual.
- B. Roof panels are to have minimal temporary roofing applied at time of installation. Apply finished roofing as soon as practical. Wall panels are to have vapor retarder and siding applied as soon as practical. If vapor retarder and siding application is delayed more than three weeks or repeated exposure to precipitation is expected, apply temporary breathable weather resistant cover to exterior wall. Remove prior to applying permanent finish materials.
- C. If desired, manufacturer's representative may be on-site for entire installation.

### 1.1 CLEANING

- A. Remove temporary coverings and protection of adjacent work areas.

### 1.2 PROTECTION

- A. Protect installed product and finish surfaces from damage during construction.
  - 1. Roof panels: Protect panels from weather by roofing materials to provide temporary protection at end of day or when rain or snow is imminent.
  - 2. After installation, cover panels to prevent contact with water on each exposed panel edge and face.

END OF SECTION