

## SECTION 08950 - INSULATED TRANSLUCENT PANEL SYSTEM

### PART 1. GENERAL

#### 1.01 DESCRIPTION

- A. All requirements of the contract documents form an integral part of the work specified herein; in particular refer to the conditions (general or otherwise), and Division 1 of the specifications, including all subdivisions thereof.
- B. Translucent panels shall consist of 2-3/4" thick flat factory prefabricated sandwich panels with installation closure system. Panels shall consist of flat fiberglass sheets bonded to a grid core of mechanically interlocking, thermally broken, aluminum I-beams. Panels shall be laminated under a controlled process of heat and pressure, and deflect no more than 1.9" at 30 psf in 10' span without a supporting frame by ASTM E-72.
- C. Requests for substitutions must be approved in writing or by addendum no later than ten (10) days prior to bid due date and in keeping with Division 1 (Substitutions) of the specification.
- D. Work included: Supply all material and labor required to deliver and install the insulated translucent panel system. The following major items are included:
  - 1. Prefabricated insulated translucent sandwich panels.
  - 2. Aluminum installation system.

#### 1.02 QUALITY ASSURANCE

- A. Manufacturer's and Erector's Qualifications
  - 1. Sandwich panel system must be listed by the International Code Council Evaluation Service, ICC-ES, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an approved agency. Quality control inspections and required testing shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with "Acceptance Criteria for Sandwich Panels" as regulated by the ICC-ES.
- B. Performance Requirements: The manufacturer shall be responsible for the configuration and fabrication of the complete panel and installation system.

#### 1.03 SUBMITTALS

- A. Submit shop drawings, color samples and panel sample in accordance with Division 1, Submittals.
- B. Test reports to be furnished by sandwich panel system manufacturer in accordance with Division 1, Submittals. The manufacturer shall submit certified test reports made by an independent testing organization for each type and class of panel system. Reports shall verify that the material will meet all performance requirements of this specification.
  - 1. ICC-ES Evaluation Report
  - 2. Flame Spread and Smoke Developed (ASTM E-84 & UL 723) – Submit UL Card
  - 3. Insulation "U" Factor for panel and system certified by NFRC-100: Submit NFRC Listing.
  - 4. Condensation Resistance Factor (AAMA 1503.1)
- C. WARRANTY: Submit manufacturer's standard one-year material and workmanship warranty.

### PART 2. PRODUCTS

#### 2.01 MANUFACTURER

- A. Kalwall Corporation

#### 2.02 TRANSLUCENT PANEL CONSTRUCTION

- A. Appearance - Faces shall not vary more than  $\pm 10\%$  in thickness and be uniform in color. Translucent faces shall be manufactured from glass fiber reinforced thermo-set resins specifically for architectural use. Thermoplastic polycarbonate or acrylic faces are not acceptable.
  - 1. Exterior face sheets shall be smooth, .070" thick and Crystal in color.
  - 2. Interior face sheets shall be .045" thick and Crystal in color.

- B. System Performance - Panels shall be thermally broken with a thickness of 2-3/4".
  - 1. Panel 'U' factor shall be .23 and shall have a System Certified 'U' factor of .28 listed by NFRC.
  - 2. Light transmission shall be 30%
  - 3. Solar Heat Gain Coefficient shall be .32. (*Note to specifier; please see Kalwall data to select U-value, LT & SHGC*).
- C. Grid pattern shall be nominal 12" x 24" shoji.  
Grid Core - Panels shall incorporate a thermally broken I-beam grid core of 6063-T6 or 6005-T5 with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16". The I-beam grid shall be machined to tolerances of not greater than  $\pm .002$ ". Thermally broken panels shall have a thermal break of 1" minimum with a Condensation Resistance Factor of 80 by AAMA 1503.1, measured on the grid bond line.
- D. Weatherability - The full thickness of the exterior face shall not change color more than 3.0 Hunter or CIE Units DELTA E by ASTM D-2244 after five (5) years outdoor South Florida weathering at 5 degrees facing south, determined by the average of at least three (3) white samples with and without a protective film or coating to ensure maximum, long-term color stability. Color stability shall be unaffected by abrasion or scratching.
- E. Flammability – The interior face sheet shall be UL listed and have a flamespread rating no greater than 50 and smoke developed no greater than 250 when tested in accordance with UL 723. Burn extent by ASTM D-635 shall be no greater than 1". Faces shall not deform, deflect or drip when subjected to fire or flame or delaminate when exposed to 300°F for 25 minutes per ICC. Panels shall withstand 1200°F fire for minimum one (1) hour without collapse or exterior flaming.
- F. Surface Erosion - The exterior face shall have a permanent glass erosion barrier embedded beneath the surface to provide maximum long-term resistance to reinforcing fiber exposure. Sacrificial surface films or coatings are not acceptable erosion barriers. Exterior face surface loss shall not exceed .7 mils and 40 mgs when tested in accordance with ASTM D-4060-90 employing CS17 abrasive wheels at a head load of 500 grams for 1000 cycles.
- G. Strength - The exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact equal to 70 ft. lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5 lb. free-falling ball per UL 972. The laminate adhesive shall be heat and pressure resin type engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".

### 2.03 BATTENS AND PERIMETER CLOSURE SYSTEM

- A. Closure system shall be extruded 6063-T6 and 6063-T5 aluminum screw clamp-tite. Perimeter system shall have a urethane bridge. All battens and perimeter closures to be supplied with 300 series stainless steel screws excluding final fasteners to the building. All exposed aluminum to be architectural corrosion resistant finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturer's standards.

## **PART 3. EXECUTION**

### 3.02 ERECTION

- A. The erector shall erect translucent panel system in strict accordance with approved shop drawings as supplied by manufacturer. Fastening and sealing shall be in strict accordance with manufacturer's shop drawings and installation instructions. All surfaces shall be cleaned before sealants are applied.
- B. After other trades have completed work on adjacent material, carefully inspect translucent panel installation and make adjustments necessary to ensure proper installation and weather-tight conditions.
- C. All staging, lifts and hoists required for the complete insulated panel installation, including staging, etc., necessary for field measuring, shall be provided by, set up and maintained by the general contractor.

**End of Section 08950**