

## SECTION 08 45 23

### TRANSLUCENT WALL SYSTEM

#### PART 1 GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Section includes:
  - 1. Translucent composite insulated sandwich wall panel system to include all required aluminum flashing, aluminum framing, drip pan, sealants.
- B. Related work specified in other sections:
  - 1. Structural framing - Sections 05 12 00 and 05 50 00.
  - 2. Wood blocking - Section 06 10 00.
  - 3. Counterflashing - Section 07 60 00.

##### 1.02 QUALITY ASSURANCE

- A. Manufacturer's and Installer's Qualifications:
  - 1. Panel system must be listed by an ANSI accredited Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an accredited agency.
  - 2. Quality control inspections shall be conducted at least once each year and shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC177 "Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems" as issued by the ICC-ES.

##### 1.03 WARRANTY

- A. Warrant all Work under this section for a period of ten years after acceptance of Project by Owner, against defective materials and against water leakage.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Products by Kallwall Corporation, [www.kalwall.com](http://www.kalwall.com), 800-258-9777 are specified. Other manufacturers may be considered that meet the performance criteria of this specification on a project specific basis.

##### 2.02 PANEL COMPONENTS

- A. Face Sheets
  - 1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
    - a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
    - b. Face sheets shall not deform, deflect, or drip when subjected to fire or flame.
  - 2. Interior face sheets:
    - a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 50 (class B interior finish) or 25 (class A interior finish to be determined by A/E) and smoke developed no greater than 250 when tested in accordance with UL 723.
    - b. Burn extent by ASTM D 635 shall be no greater than 1".
  - 3. Exterior face sheets:

- a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 5 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
  - b. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft. lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5 lb. free-falling ball per UL 972.
- B. Grid Core
- 1. Thermally broken composite of aluminum and fiberglass I-beam grid core shall be of 6063-T6 or 6005-T5 alloy and temper with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".
  - 2. I-beam Thermal break: Minimum 1", thermoset fiberglass composite.
- C. Laminate Adhesive
- 1. Heat and pressure resin type adhesive engineered for structural sandwich panel use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives."
  - 2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
  - 3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:
    - a. 50% Relative Humidity at 68° F: 540 PSI
    - b. 182° F: 100 PSI
    - c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
    - d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

**2.03 PANEL CONSTRUCTION**

- A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.
- B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10'0" span without a supporting frame by ASTM E 72.
- C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.
- D. Thermally broken panels: Minimum Condensation Resistance Factor of 80 by AAMA 1503 measured on the bond line.

**2.04 BATTENS AND PERIMETER CLOSURE SYSTEM**

- A. Closure system: Thermally broken extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.
- B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.
- C. Fasteners: 300 series stainless steel screws for aluminum closures, excluding final fasteners to the building.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install the panel system in accordance with the manufacturer's suggested installation recommendations and approved shop drawings.
  - 1. Anchor component parts securely in place by permanent mechanical attachment system.
  - 2. Accommodate thermal and mechanical movements.

3. Set perimeter framing in a full bed of sealant compound, or with joint fillers or gaskets to provide weather-tight construction.
- B. Install joint sealants at perimeter joints and within the panel system in accordance with manufacturer's installation instructions.

**END OF SECTION 08 45 23**