

SECTION 08920 - TRANSLUCENT SANDWICH PANEL WALL SYSTEM

0.1 APPROVED MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include but are not limited to the following:
 - 1. Kalwall Corporation, Manchester New Hampshire (800) 258-9777 (Local Distributor: Powers Products Co. 1455 South Platte River Dr., Denver, CO 80223 (303) 791-1010), OR PRIOR APPROVED EQUAL.

0.2 TRANSLUCENT FACING

- A. Translucent fiberglass faces shall be manufactured from glass fiber reinforced thermoset resins by insulated panel system fabricator specifically for architectural use.
- B. Flammability - The interior face shall be UL listed and have a flame spread rating no greater than 45 and smoke developed no greater than 350 when tested in accordance with ASTM E-84. Burn extent by ASTM D-635 shall be no greater than 1". Faces shall not deform, defect, or drip when subjected to fire, heat, or flame; or become detached when subjected to 300 degrees F for one hour.
- C. Weatherability -
 - 1. The full thickness of the exterior face sheet shall not change color more than 3.0 Hunter or CIE Units (Delta E by ASTM D 2244) after five years outdoor South Florida weathering at 7 degrees facing south, determined by the average of at least three (3) white samples without a protective film or coating to insure maximum, long-term color stability.
 - a. An exterior white face sheet shall not darken more than .2 Units (DELTA L by ASTM D-2244) when exposed to 150 degrees F for two (2) weeks.
 - 2. The exterior face shall have a permanent glass erosion barrier to provide long term resistance to reinforcing fiber exposure and shall be warranted against same for 25 years with no "percent of allowable failure disclaimers."
 - a. The exterior face sheet shall have a self-cleaning thermoset acrylic urethane surface molecularly bonded under factory controlled conditions minimum 1.2 mils thick fully field restorable if worn or damaged. Plastic film overlays, such as Tedlar, are not acceptable.
- D. Appearance
 - 1. The face sheets shall be uniform in color to prevent splotchy appearance. Faces shall be completely free of ridges and wrinkles which prevent proper surface contact in

bonding to the aluminum grid core. Clusters of air bubbles/pinholes which collect moisture and dirt will not be acceptable.

2. Exterior face sheets shall be smooth, .070" thick and crystal in color. Interior face sheets shall be .045" thick and crystal in color. Faces shall not vary more than +/- 10% in thickness.
- E. Strength: The exterior face sheet shall be uniform in strength and repel an impact equal to 60 ft. lbs. without fracture or tear in accordance with SIP Shatter Resistance Test.

0.3 THERMALLY BROKEN GRID CORE

- A. Thermally broken composite grid core shall have minimum Condensation Resistance Factor of 80 by AAMA 1503 with provisions for mechanical interlocking of muntin-mullion and perimeter to prevent high and low intersections which do not allow full bonding surface to contact with face material. Width of I-beam shall be no less than 7/16". Aluminum I-beam grid shall be machined to tolerances of not greater than +/- .002". Panels shall withstand 1200 degrees F fire for minimum one (1) hour without collapse or exterior flaming. Aluminum I-beams shall be 6063-T6 or 6005-T5.
- B. Thermal break: Minimum 1".

0.4 ADHESIVE

- A. The laminate adhesive shall be heat and pressure resin type engineered for structural sandwich panel use. Adhesive shall pass testing requirements specified by the International Conference of Building Officials "Acceptance Criteria for Sandwich Panel Adhesive." Minimum strength shall be:
- B. 750 PSI tensile strength by ASTM C-297 after two (2) exposures to six (6) cycles each of the aging conditions prescribed by ASTM D-1037.
- C. 500 R-SI Shear strength average of five (5) exposures by ASTM D-1002:
1. 50% Relative Humidity at 73 degrees F.
 2. Accelerated Aging by ASTM D-1183.
 3. 182 degrees F.
 4. Full Cycle Load.
 5. 500 Hour Oxygen Bomb.

0.5 PANEL CONSTRUCTION

- A. Panels shall have a thickness of 2-3/4" with a "U" factor of 0.10 thermally broken, light transmission of 15 and shading coefficient of 0.14. Faces shall be crystal over crystal.

- B. Translucent panels shall be a true sandwich panel of flat fiberglass sheets bonded to a grid core of mechanically interlocking aluminum I-beams and shall be laminated under a controlled process of heat and pressure. Tape bond systems are not allowed.
- C. All grid patterns shall be nominal 12"x24" and be symmetrical about the horizontal center line of each panel.
- D. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge. In order to insure bonding strength, white spots at intersections of muntins and mullions shall not exceed four (4) for each forty (40) square feet of panel, nor shall they be more than 3/64" in width.
- E. Wall panels and aluminum perimeter frame shall be pre-assembled where practical and sealed at the factory. Panels shall be shipped to the job site ready for erection.

0.6 BATTENS AND PERIMETER CLOSURE SYSTEM

- A. Extruded 6063-T6 and 6063-T5 aluminum screw clamp-tite closure system.
- B. Aluminum closures to be supplied with 300 series stainless steel screws (excluding final fasteners to the building) and shall be factory sealed to the panels. Aluminum battens and cap plates shall be field installed.
- C. All exposed aluminum to be architectural corrosion resistant finish which meets the performance requirements to ANSI/AAMA 605.2-82, color to be selected from manufacturer's standards.

0.7 FLEXIBLE SEALING TAPE

- A. Sealing tape shall be manufacturer's standard pre-applied to closure system at the factory under controlled conditions.