

SECTION 08950
TRANSLUCENT WALL PANEL SYSTEMS
Addendum No. 3

PART 1 - GENERAL

1-1. SCOPE. This section covers the work necessary to furnish and install the translucent wall panels, and windows

1-2. RELATED WORK SPECIFIED ELSEWHERE. The requirements of the following sections and divisions apply to the work of this section:

- A. General Conditions, Section F-29 Equipment and Material section
- B. Section 01614 – Product Delivery, Storage, and Handling Requirements
- C. Section 07600 – Sheet Metal
- D. Section 07900 – Joint Sealant
- E. Section 09990 – Protective Coatings
- F. Other sections of the Specification, not referenced above, shall also apply to the extent required for the proper performance of the Work.

1-3. GENERAL.

1-3.01. Translucent Wall Panels. Translucent wall panels shall be constructed in accordance with the dimensions, arrangements, and materials indicated on the Drawings and specified herein, complete with all accessories and appurtenances indicated, specified, or required to give a complete weathertight unit.

- a. The items provided hereunder shall be the end product of one manufacturer in order to achieve standardization for appearance, maintenance, and manufacturer's service.
- b. Coordinate sizes and details of windows to be installed within the translucent wall panel system.

1-4. SUBMITTALS. Before manufacturing of the unit is begun, the following drawings, certificates and samples shall be submitted in accordance with A. General Conditions, Section F-29 Equipment and Material section of the specification.

- a. Shop Drawings. Submit shop drawings covering frame and panel conditions and complete anchorage details.
- b. Color Selection Card. Manufacturer's standard color chart for aluminum frame finish.

Translucent Wall Panel System (Custom)

Section 08950-2

- c. Manufacturer's Certificate of Compliance. Submit manufacturer's certificate of compliance with performance criteria specified herein.
- d. Erector's Affidavit. Submit erector's affidavit of qualification compliance.
- e. Panel Sample. 6 inch square material sample.

1-4.01. Product Reports.

Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.

- a. Reports required are:
 - a. International Building code Evaluation Report
 - b. Flame Spread and Smoke Developed (UL 723) – Submit UL Card
 - c. Color Difference (ASTM D2244)
 - d. Impact Strength (UL972)
 - e. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
 - f. Bond Shear Strength (ASTM D 1002)
 - g. Beam Bending Strength (ASTM E 72)
 - h. NFRC System U-Factor Certification (NFRC 700)
 - i. Solar Heat Gain Coefficient (NFRC 700)
 - j. Condensation Resistance Factor (AAMA 1503)
 - k. Air Leakage (ASTM E 283)
 - l. 1200 degree F Fire Resistance (SWRI)
 - m. Performance for Windows (AAMA/WDMA/CSA-101/I.S.2/A440-05)
 - n. Daylight Autonomy

1-5. QUALITY ASSURANCE.

1-5.01. Manufacturer's and Erector's Qualifications.

- a. Quality control inspections and testing shall be conducted at least once each year. Inspections and testing shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with "Acceptance Criteria for Sandwich Panels" as requested by the International Building Code or equivalent.
- b. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of similar materials, for a period of at least 10 consecutive years; and which can show evidence of these materials being satisfactorily used on at least six projects of similar size, scope and type within such a period. At least three of the projects shall have been in successful use for 5 years or longer.

- c. Erection shall be by an installer who has been in the business of erecting similar materials for at least 5 consecutive years; and can show evidence of satisfactory completion of projects of similar size, scope, and type.

1-5.02. Performance Requirements. The manufacturer shall be responsible for the configuration and fabrication of the complete panel and frame system.

1-6. DELIVERY, STORAGE, AND HANDLING.

- a. Deliver, store, and handle translucent wall panel system in a manner to prevent damage, deterioration, and warping. Provide packaging such as cardboard or other containers, separators, banding, spreaders, and paper wrappings to protect all items.
- b. Store translucent wall panel system units on long edge, upright, in a protected dry area, at least 6 inches or more off the ground or floor and at least 1/4 inch between individual pieces. Follow special storage and handling requirements of manufacturer. Protect exposed finish surfaces of prefinished items.

1-7. WARRANTY.

- a. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within five years of the date of delivery. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering and defects in accessories, insulated translucent sandwich panels and other components of the work.
- b. In addition there shall be a manufacturer's 10 year Limited Warranty covering separation of faces from grid core, and/or abnormal color change of the exterior face.
- c. There also shall be a manufacturer's 20 year Limited Warranty against reinforcing fiberbloom.

1-8 ACCEPTABLE MANUFACTURERS. Acceptable manufacturers shall be as indicated in the individual sub-articles as specified in Part 2.

PART 2 - PRODUCTS

2-1. MANUFACTURER.

- a. Products of the following manufacturer shall be used:
 - 1. Kalwall Corporation, Manchester, New Hampshire.

Translucent Wall Panel System (Custom)

Section 08950-4

2. Structures Unlimited, Inc., Manchester, NH
3. Or approved equal.

2-2. MATERIALS AND PERFORMANCE CRITERIA.

2-2.01. Framing Members. Structural framework shall be tubular aluminum sized by manufacturer to support system. Related components to provide a complete system shall be aluminum shapes designed by the manufacturer and fabricated in strict accordance with shop drawings. The aluminum framing members shall be finished with a Kynar 500 coating, color shall match window framing.

2-2.02. Translucent Faces. Translucent faces shall be manufactured by insulated panel system fabricator specifically for architectural use.

- a. Flammability. The interior face sheet shall have a flame-spread rating no greater than 25 and smoke development no greater than 300 when tested in accordance with ASTM E84. Burn Extent by ASTM D635 shall be no greater than 1 inch.
- b. Weatherability. The exterior face shall not change color more than 3.0 Adams Units (DELTA E by ASTM D2244) after 5 years outdoor weathering in South Florida at 7 degrees facing south, determined by the average of at least three samples. The face sheet shall not darken any more than 0.2 Adams Units (DELTA L by ASTM D2244) when exposed to 150°F, for 2 weeks. The exterior faces shall have high performance thermoset acrylic protective surface (minimum thickness 1.2 mils), for maximum resistance to erosion and weather, applied in the factory under controlled temperature conditions; the surfacing shall be fully field repairable and refinishable if required.
- c. Appearance. Kalwall panels shall be a white appearance at all locations. The white color for the skylight shall be achieved by using "crystal" exterior sheets and white interior sheets. The face sheets shall be uniform in color to prevent splotchy appearance. Exterior face sheets shall be 0.070 inch thick. Interior face sheets shall be 0.045-inch thick. Faces shall not vary more than +10 percent in thickness. 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 and pinholes which collect moisture and dirt will not be acceptable.
- d. Strength. The exterior face sheet shall be uniform in strength and repel an impact equal to 60 ft/lbs in accordance with SPI Shatter Resistance Test.

2-2.03. Adhesive. 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:

- a. 750 psi tensile strength by ASTM C297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D1037.
- b. 500 psi shear strength average of five exposures by ASTM D1002:
 1. 50 percent relative humidity at 73°F.
 2. Accelerated aging by ASTM D1183.
 3. 182°F.
 4. Full cycle soak.
 5. 500-hour oxygen bomb.

2-2.04. Grid Core. The aluminum I-beam shall be extruded 6063-T6, with provision for mechanical interlocking of muntin-mullion and perimeter to prevent high and low intersections which do not allow full bonding surface contact with face material. Width of I-beam shall be no less than 7/16 inch. Aluminum I-beam for the grid shall have complete surface contact with the skin material and shall have machined flanges to tolerances of not greater than ± 0.002 inch. A welded or web interlocked grid core shall not be acceptable due to unevenness at muntin-mullion intersections.

2-2.05. Battens and Perimeter Closures.

- a. Extruded 6063-T5 or 6063-T6 aluminum screw clamp-tight closure system.
- b. All battens and perimeter closures to be supplied with 300 Series stainless steel screws (excluding fasteners to the building). Aluminum battens and cap plates shall be field installed.
- c. All exposed aluminum shall be corrosion resistant finish in color to be selected from manufacturer's standards.

2-2.06. Flexible Sealing Tape. Sealing tape shall be manufacturer's standard pre-applied to closure system at the factory under controlled conditions.

2-2.07. Fasteners. Fasteners to the building shall be stainless steel screws or bolts in expansion anchors of size as required to support system and as recommended by the manufacturer.

Translucent Wall Panel System (Custom)

Section 08950-6

2-2.08. Isolation Paint. Bituminous coating as specified in the Protective Coatings section.

2-2.09. Ancillary Items. Provide miscellaneous flashings as required for a complete assembly; including required flashings for louvers installed within the translucent wall panel system.

2-3. PANEL CONSTRUCTION.

- a. Translucent panels in masonry walls shall have a thickness of 2-3/4 inches with a U-factor of .53 +/-; and light transmission of 30 +/-.
- b. Translucent panels shall be a true sandwich panel of flat fiberglass sheet 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. Translucent sandwich panel deflection shall not exceed 3.5 inches at 35-pound per square foot loading and shall not exceed 0.10 inch set deflection 5 minutes after load release per ASTM E72 with a 12 feet clear span, tested flat.
- d. Grid pattern shall be nominal 12 inch high by 24 inch wide (Shoji) and symmetrical about the horizontal centerline of each panel, for flat panel.
- e. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge. In order to ensure bonding strength, white spots at intersections of muntins and mullions shall not exceed 4 of each 40 square feet of panel nor shall they be more than 3/64 inch in width.
- f. Translucent panels and aluminum frame shall be preassembled where practical and sealed at the factory. Panels should be shipped to the jobsite in rugged shipping units and shall be ready for erection.

2-4. WINDOWS. Windows shall be designed specifically for inclusion in the translucent panel unit wall system and factory unitized panels.

- a. Units shall be a "fixed lite" - HC-200 Fixed Windows: F-AW80

2-2.01 Performance: Windows shall pass or exceed requirements of AAMA/WDMA/CSA-101/I.S.2/A440-05 (08).

- a. HC-200 Fixed Windows: F-AW80; shall pass requirements a 120 psf uniform structural load with air infiltration <.01 CFM/FT² at 6.24 psf and no water penetration at 12 psf.

2-2.02 Construction: All window frame members shall be of heavy gauge 6063-T% extruded aluminum with a thermal break. Frame sections shall be coped and joined by stainless steel screws at each corner. All joints exposed in to the weather stripped using T-slot bulb gaskets to insure minimum air infiltration.

- a. Fixed lites shall be inside glazed with an expanded EPDM closed cell sponge gasket to exterior, with aluminum glazing bead and driven EPDM wedge gasket to the interior for rapid removal and replacement.

2-2.03 Glazing: Glazing Specification: 08800 Glass and Glazing.

PART 3 - EXECUTION

3-1. PREPARATION.

- a. The Contractor shall prepare the opening including isolating dissimilar materials from aluminum system which may cause damage by electrolysis.

3-2. ERECTION.

- a. The erector shall erect translucent panel system in strict accordance with shop drawings as supplied by manufacturer. Fastening and sealing shall be in strict accordance with manufacturer's shop drawings. All aluminum shall be cleaned before sealants are applied.
- b. After other trades have completed work on adjacent material, carefully inspect translucent panel assembly and make adjustments necessary to insure proper installation and weathertight conditions.
- c. All staging, lifts, and hoists required for the complete translucent system installation, including staging, etc., necessary for field measuring, shall be provided by, set up and maintained by the erector.

3-3. PROTECTION.

- a. After erection, the Contractor shall protect exposed portions from damage by machines, paint, acid cement, or other harmful compounds. The Contractor shall be responsible for removal of protective materials and cleaning with plain water, water with soap, household detergent, or as recommended by the manufacturer.

END OF SECTION

Translucent Wall Panel System (Custom)
Section 08950-8

[PAGE INTENTIONALLY LEFT BLANK]