SECTION  – translucent sandwich-panel assemblies

1. General
   1. summary
      1. Furnish translucent sandwich-panel assemblies consisting of the following elements to complete the fabrication and installation:
         1. Flat factory prefabricated structural insulated translucent sandwich panels.
         2. Aluminum frame and sill flashing.
      2. Related Requirements:
         1. Section 05 50 00 – Metal Fabrications.
         2. Section 06 10 00 – Rough Carpentry.
         3. Section 07 92 00 – Joint Sealants.
         4. Section 08 80 00 – Glazing.
   2. SUBMITTALS
      1. Submit submittals in accordance with Section 01 33 00 – Submittal Procedures.
      2. Samples:
         1. When requested, submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.
            1. Sandwich Panels: 14" x 28" units.
            2. Factory Finished Aluminum: 5" long sections.
      3. Shop Drawings:
         1. Submit shop drawings, including elevations and details, to the Consultant for review prior to fabrication.
      4. 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, and include but are not limited to:
         1. Air Leakage (ASTM E 283).
         2. Structural Performance (ASTM E 330).
         3. Water Penetration (ASTM E 331).
         4. NFRC System U-Factor Certification (NFRC 700).
         5. Beam Bending Strength (ASTM E 72).
         6. Bond Shear Strength (ASTM D 1002).
         7. Colour Difference (ASTM D 2244).
         8. Burn Extent (ASTM D 635).
      5. Maintenance Data:
         1. Upon completion of installation, supply instructions covering reglazing, adjustments, and other relevant maintenance data.
   3. QUALITY ASSURANCE
      1. Manufacturer's Qualifications:
         1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten (10) consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope and location.
         2. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels.
      2. Installer's Qualifications: Installation shall be by an experienced installer, which has been installing specified panel systems for at least three (3) consecutive years and can show evidence of satisfactory completion of projects of similar size, scope, and type.
   4. PERFORMANCE REQUIREMENTS
      1. The manufacturer shall be responsible for the configuration and fabrication of the complete panel system.
      2. When requested, include structural analysis data signed and sealed by the qualified professional engineer, registered in the place of work, responsible for their preparation.
      3. Standard panel system shall have less than 0.01cfm/ft² air leakage by ASTM E 283 at 6.24 PSF (50 mph) and no water penetration by ASTM E 331 at 15 PSF; and structural testing by ASTM E 330.
      4. Structural Loads: Provide system capable of handling the Hourly Wind Pressures (kPa) as indicated in the local building code for 1/50-year wind pressures.
   5. DELIVERY, STORAGE AND HANDLING
      1. Delivery and Acceptance Requirements: Deliver packaged materials in their original containers with manufacturer's labels and seals intact.
      2. Storage and Handling Requirements: Store blocked off the floor in a weatherproof enclosure in original containers with manufacturers labels and seals intact until read for installation, and as follows:
         1. Install panel system as soon as possible after delivery to site.
         2. Handle panel carefully to its place of installation.
         3. Prevent damage to panel, adjacent materials, and surfaces.
   6. WARRANTY
      1. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within two (2) years of Substantial Completion. Failure of materials or workmanship shall include, but not be limited to the following:
         1. Leakage,
         2. Excessive deflection,
         3. Deterioration of finish on metal in excess of normal weathering and defects in accessories, insulated translucent sandwich panels and other components of the work.
2. Products
   1. manufacturer
      1. Acceptable Materials Manufacturers: Subject to compliance with requirements specified in this Section, manufacturers offering products that may be incorporated into the Work include but are not limited to, the following:
         1. Kalwall Corporation.
   2. PANEL COMPONENTS
      1. Face Sheets:
         1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
            1. Face sheets shall not deform, deflect, or drip when subjected to fire or flame.
         2. Appearance:
            1. Exterior face sheets: Smooth, 4" thick and white in colour.
      2. Grid Core:
         1. Thermally broken composite I-beam grid core shall be of 6005-T5 alloy and temper with provisions for mechanical interlocking of muntin-mullion and perimeter.
         2. Width of I-beam shall be no less than 7/16".
         3. I-beam Thermal break: Minimum 2", thermoset fiberglass composite.
      3. Laminate Adhesive:
         1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, as recommended by panel system manufacturer.
   3. PANEL CONSTRUCTION
      1. 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.
         1. Thickness: 4".
         2. Grid Pattern: As selected by the Consultant from the manufacturer's standard product line.
      2. Standard panels shall withstand 1200 deg F fire for minimum one hour without collapse or exterior flaming.
      3. Thermally broken panels: Minimum Condensation Resistance Factor of 85 by AAMA 1503 measured on the bond line.
   4. BATTENS AND PERIMETER CLOSURE SYSTEM
      1. Closure system: Thermally broken extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.
      2. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.
      3. Fasteners: 300 series stainless steel screws for aluminum closures, excluding final fasteners to the building.
      4. Finish:
         1. Clear Anodized Finish:
            1. Class II Finish: Architectural Class II, clear coating 0.010 mm or thicker in accordance with AAMA 611.
         2. **[Light Bronze] [Medium Bronze] [Dark Bronze] [Black]** Coloured Anodized Finish:
            1. Class II Finish: Architectural Class II, integrally coloured or electrolytically deposited colour coating 0.010 mm or thicker in accordance with AAMA 611.
      5. Window Glazing: As specified in Section 08 88 00.
3. Execution
   1. examination
      1. Examine areas of work affecting the work of this section. Report in writing all defects, errors, and discrepancies immediately to the Consultant.
      2. Commencement of work implies acceptance of surfaces and conditions.
   2. PREPARATION
      1. Openings shall be free from moisture, frost, rust, dirt, and foreign matter.
      2. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
      3. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.
   3. INSTALLATION
      1. Install the panel system in accordance with the manufacturer's 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.
   4. CLEANING
      1. Clean the panel system inside and outside, immediately after installation.
      2. Refer to manufacturer's written recommendations.

END OF SECTION