SECTION 08623

TUBULAR SKYLIGHTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing tubular skylight system and related components.

B. Related Sections:

1. Single ply membrane roofing is specified in Section 07530.

2. Sheet metal flashing and trim is specified in Section 07620.

1.02 SUBMITTALS

A. Shop Drawings: Shop drawings scale showing construction of components, dimensions and details.

B. Samples: Samples of product as requested by the Architect.

C. Test Reports/Calculations: Certified independent laboratory test reports verifying compliance with specified test requirements.

1.03 QUALITY ASSURANCE

A. General:

1. Provide tubular skylight system which maintains U.L. (Underwriters Laboratories) listing.

2. Provide tubular skylight system which has been evaluated and approved by ICBO and maintains a current Evaluation Report.

B. Test Units: Perform all tests unless otherwise noted per reference standards on unit size(s) which will be incorporated in the project.

C. Test Procedures

1. Air Infiltration Test: Air Infiltration maximum 0.10-cfm per foot of crack length at 6.24-psf pressure differential when tested in accordance with ASTM E283.

2. Water Resistance Test: No uncontrolled water leakage at 6.00-psf pressure differential with water rate of 5-gallons/hours/s.f. when tested in accordance with ASTM E331.

3. Uniform Load Deflection Test: No breakage, permanent damage to fasteners, hardware parts, or damage to make tubular skylight inoperable at both a positive and a negative load of 146.8-psf. Tests shall be in accordance with ASTM E330.

4. Uniform Load Structural Test:

a. Unit to be tested at 3x positive wind pressure and 2x negative wind pressure, acting normal to plane of roof in accordance with ASTM E330.

b. No breakage, permanent damage to fasteners, hardware parts, or damage to make tubular skylight inoperable or permanent deflection of any section in excess of 0.2-percent of its span.

1.04 WARRANTY

A. Tubular skylights shall be free from defects in materials and workmanship for a period of 10-years from Date of Substantial Completion. This warranty shall be in addition to and not a limitation on rights the Owner may have against the Contractor under the Contract Documents.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

A. Solatube International, Inc. "Brighten-Up Series - 21" diameter" or approved equal.

2.02 MATERIALS

A. Roof Dome: Injection molded polycarbonate classified as CC1 material. Thickness shall not be less than 0.125-inch. Visible light transmission shall be 92-percent or greater. Acrylic dome shall be approved in no-UL applications provided it meets characteristics of Duradome 10 (i.e. DR-101 blend). Roof dome shall contain Raybender Technology, a series of concentric, light refracting etched lines a minimum of 2-inches high to improve light input when sun is low on horizon.

B. Ceiling Diffuser: Injection molded, acrylic plastic classified as CC2 Plexiglas. Thickness shall not be less than 0.087-inch. Provide special prismatic design to maximize light output.

C. Roof Flashing: As recommended by skylight manufacturer for roof material and slope.

D. Main Tube:

1. Fabricate from Aluminum sheet meeting the requirements of ASTM B209, alloy and temper as required by the manufacturer to suit forming operations and finish requirements.

2. Finish: Provide exposed aluminum surface with high polished specular finish meeting AAMA designation M21C31A31. Reflective surface to be Spectralight 2000 or equal. Specular reflectance to be 92-percent and total reflectance to be 95-percent.

E. Accessories:

1. Ceiling Ring to be 30 percent talc filled polypropylene or high impact ABS.

2. Sealant: Polyeurathane or copolymer based elastomeric sealant- use type provided or recommended by the manufacturer.

3. Seals:

   a. Weather Seal: Medium density pile weatherstripping and light density polyvinyl chloride foam tape or UV resistant EPDM rubber.

   b. Ceiling Diffuser Seal: Closed cell polyethylene foam, 3-pcf, and white polyvinyl chloride seal, butt joint welded or EPDM rubber.

4. Fasteners shall be same as metals being fastened or non-magnetic stainless steel or other non-corrosive metal as recommended by the manufacturer.

2.03 FABRICATION

A. Finish, fabricate and shop prepare all assemblies under responsibility of one manufacturer.

B. Fabricate to allow for thermal movement of materials when subject to a temperature differential from -30-degrees F to +180-degrees F.

C. Provision shall be made to insure that water will not accumulate and remain in contact within system components.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install tubular skylights in accordance with manufacturer's printed installation instructions.

B. Installer to be factory trained and/or certified by the manufacturer prior to commencement of installation.

C. After installation of first unit-conduct field check to determine compliance with specified requirements. Water-test in presence of Architect. Correct any deficiencies prior to commencing with subsequent units.

END OF SECTION