SECTION 107316 - CANOPIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Translucent daylighting system.

1.2 DESIGN REQUIREMENTS

A. Delegated Design: Design aluminum-framed systems, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Design Wind Loads:

1. Basic Wind Speed: 90 mph.
2. Wind Importance Factor: 1.0
3. Exposure Category: C.

C. Design Snow Loads: 63 PSF.

D. Maximum Allowable Deflection of Structural Members: Maximum of L/100 of clear span.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product data, including materials, components, fabrication, finish, and installation instructions.

B. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, tolerances, profiles, anchorage, connections, fasteners, hardware, provisions for expansion and contraction, drainage, flashing, finish, and attachments to supports of glazing, framing, and options.

C. Samples: Submit manufacturer’s samples for each glazing type, framing system, finish, and color specified.

D. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.

E. Manufacturer’s Project References: Submit list of completed projects including project name and location, name of architect, and type of daylighting manufactured.

F. Warranty: Submit manufacturer's standard warranty.

G. Testing Reports: Submit manufacturer’s test reports.

1. Fire tests.
2. Air infiltration test.
3. Water penetration test.

1.4 QUALITY ASSURANCE

A. Manufacturer’s Qualifications:

1. Continuously engaged in translucent insulated daylighting manufacturing with a minimum of 10 years successful experience.
2. Able to demonstrate successful performance on comparable projects.
3. Responsible for all components, including structural design.

B. Installer’s Qualifications:

1. Authorized by manufacturer to install translucent glazing products.
2. Trained by manufacturer’s standard training methods and policies.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and location of installation.

B. Storage:

1. Store materials in a clean, dry area indoors in accordance with manufacturer's instructions.
2. Keep temporary protective coverings in place.
3. Do not expose panels to direct sunlight for extended periods.

1.6 WARRANTY

A. Warranty Period: Ten years on weatherization starting on date of substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis-of-Design Product: Subject to compliance with requirements, provide canopy system by Duo-Gard Industries Inc., 40442 Koppernick Road, Canton, Michigan 48187. (800) 872-4404. or equal product.

2.2 GLAZING

A. Product: Series 3000 Base plate and low profile pressure cap system glazed with polycarbonate structured sheet. Glass fiber reinforced thermoset resin (fiberglass) faces are not acceptable.

B. Sheet Thickness: 25 mm.

C. Profile: X-wall.

D. U-Value, ASTM C 236: .26.

E. Light Transmission, ASTM D 1003: 57 percent (clear), 49 percent (opal).

F. Fire Tests:

1. Flame Spread, ASTM E 84: Class A.
2. Smoke Density, ASTM E 84: Class A.
3. Smoke Developed, ASTM D 635: CC1.
4. Ignition Temperature, ASTM D1929.
5. Density of smoke, ASTM D 2843.

2.3 STRUCTURAL FRAMING SYSTEM

A. Framing system: Series 3000 BPC system with low profile pressure cap for easy water flow.

1. Alloy: 6063 T5.

B. Combined maximum deflection: 1 inch.

C. Provide additional aluminum structure where and if required.

D. Glazing system required to span maximum 7 feet (sloped) without additional support.

E. Air infiltration, ASTM E 283-1999: Leakage not to exceed 0.04 when tested at 1.57 psf and not to exceed 0.07 when tested at 6.24 psf.

F. Water penetration, ASTM E 331-2000: No water leakage at 30 psf.

G. Recommended minimum slope: 2:12.

H. Direct contact between polycarbonate system components is not acceptable including but not limited to polycarbonate battens.

I. Framing system must allow polycarbonate panel to ‘float’ in the channel to accommodate for expansion and contraction.

2.4 MATERIALS

A. Glazing Panels:

1. Panels: Polycarbonate structured sheets.
2. UV Stabilization: Coextruded into panels, not coated.
3. Resist Yellowing: Maximum10 delta for a minimum of 10 years.
4. Sheet Appearance: Uniform in color.
5. Expansion and Contraction: Design and install components with provisions for expansion and contraction due to a 120 degree F temperature variation.
6. Gaskets and Dry Seals: EPDM and butyl tape.

B. Joint Sealant:

1. Factory-Applied Sealant: Gunnable, nonhardening, elastomeric sealant. ASTM C 920, Type S, Class 12, Grade NS. Fed Spec TT-S-1657, Type 1.n.

C. Field Fasteners:

1. Comply with translucent insulated daylighting manufacturer’s instructions for fastener types, quantities, and usage.
2. Cadmium-plated or better. Prevent oxidation or electrolytic interaction with framing.
3. Aluminum-to-Aluminum Connections: Self-drilling screws, No. 10 and No. 12, of sufficient length for full-thread engagement, as determined by manufacturer.

2.5 COLOR AND FINISH

A. Panel Color: Manufacturer's standard color options as selected by the Architect.

B. Aluminum Finish: Manufacturer's standard-clear anodized.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive translucent insulated daylighting. Notify Architect of conditions that would adversely affect installation or subsequent utilization of daylighting. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Ensure supports to receive translucent insulated daylighting are clean, flat, level, plumb, square, accurately aligned, and correctly located.

3.3 INSTALLATION

A. Install translucent insulated daylighting in accordance with manufacturer's instructions at locations indicated on the drawings.

B. Install daylighting level, plumb, square, accurately aligned, correctly located, and without warp.

C. Anchor daylighting securely in place to supports. Use attachment methods permitting adjustment for construction tolerances, irregularities, alignment, and expansion and contraction.

D. Install daylighting including flashing, fasteners, hardware, gaskets, joint sealants, and glazing materials required for a complete, weathertight installation.

E. Sheet Metal Flashing: Install sheet metal flashing as specified elsewhere in specifications.

F. Joint Sealants: Install joint sealants as specified elsewhere in specifications.

G. Repair minor damages to metal finish or glazing in accordance with manufacturer's instructions and as approved by Architect. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 CLEANING

A. Clean translucent insulated daylighting in accordance with manufacturer's instructions.

B. Clean inside and outside of daylighting immediately after installation and after joint sealants have cured.

C. Remove temporary protective coverings at time of installation (interior) and after installation is complete (exterior).

D. Remove excess joint sealant in accordance with sealant manufacturer's instructions.

E. Do not use harsh cleaning materials or methods that would damage metal finish or glazing.

3.5 PROTECTION

A. Protect installed translucent insulated daylighting from damage during construction.

B. Remove and replace damaged daylighting components as determined by Architect.

END OF SECTION 107316