

SECTION 13123

SOLARIUM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparation of existing structure to receive solarium addition.
- B. Structural design, engineering, and fabrication of metal solarium framing system.
- C. Finish of metal components.
- D. Glass and glazing system.
- E. Fasteners, anchors, reinforcement, and flashings.
- F. Installation of entire solarium.

1.2 RELATED SECTIONS

- A. Section 07620 - Sheet Metal Flashing and Trim: Counterflashing.
- B. Section 07900 - Joint Sealers.
- C. Section 08630 - Metal-Framed Skylights.

1.3 REFERENCES

- A. AAMA 501.1 - Standard Test Method for Metal Curtain Walls for Water Penetration Using Dynamic Pressure.
- B. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.
- C. AAMA 1504 - Voluntary Standard for Thermal Performance of Windows, Doors, and Glazed Wall Sections.
- D. ANSI A58.1/ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- E. ASTM A 276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.

- F. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- G. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- H. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- I. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

1.4 PERFORMANCE REQUIREMENTS

- A. Design and size components to withstand the following load requirements:
 - 1. Roof snow load: ____ lbf/sq ft.
 - 2. Positive wind load: ____ lbf/sq ft.
 - 3. Negative wind load: ____ lbf/sq ft.
 - 4. Maximum allowable deflection of any glazing support member: 1/180 of span.
- B. Design and size components to withstand wind loads based on ANSI A58.1/ASCE 7 guidelines.
- C. Design and size components to withstand loads as indicated on the drawings.
- D. Design and size components to withstand loads required by _____ Building Code.
- E. Thermal Transmittance: Comply with U-Class of U70, per AAMA 1504.
- F. Condensation Resistance: Comply with CRF Class C55, per AAMA 1504.
- G. Air Infiltration Resistance: Limit to 0.06 cu ft/min/sq ft for glazed area, measured at a reference differential pressure across assembly of 1.57 psf, in accordance with ASTM E 283.
- H. Static Water Resistance: None, when tested in accordance with ASTM E 331 at a static pressure of 2.86 lbf/sq ft.

- I. Dynamic Water Resistance: Comply with testing requirements of AAMA 501.1.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Include pertinent details for installation, anchorage of framing members, glazing, sealing, flashing, and adaptation of system for specific project conditions; include engineering calculations stamped and certified by a registered structural engineer, attesting to adequacy of system to meet required loading conditions.
- C. Verification Samples: Submit samples, not less than 12 inch by 12 inch in size, illustrating appearance of prefinished aluminum and specified glazing system, including glazed edge and corner.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store, and protect products.
- B. Provide wrapping or packaging to protect prefinished aluminum surfaces.
- C. Store components off the ground in a dry covered area, protected from adverse weather conditions.

1.7 WARRANTY

- A. Comply with provisions of Section 01740 - Warranties.
- B. Provide manufacturer's warranty covering replacement of defective materials within a five year period and including labor for one year after Date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Products of this section are based on systems produced by Patio Enclosures, Inc., of Macedonia, Ohio; Telephone 1-800-468-0720, extension 350.
- B. Substitutions: Not permitted.
- C. Substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

- A. Framing Members: Aluminum extrusions: 6063-T5 or 6063-T6 members complying with ASTM B 221. Dimensions: 2 inches wide by 3.2 inch, 4.2 inch, or 5.2 inch depth, depending upon structural requirements.
- B. Fasteners:
 - 1. Component Fasteners: Stainless steel, complying with ASTM A 276.
 - 2. Lag Screws: Plated low carbon steel.
- C. Glazing: Insulated Glass Units (IGU), 1 inch thick overall, CBA rating as certified by Insulating Glass Certification Council (IGCC), and as follows:
 - 1. Roof IGU's:
 - a. Outboard light: Clear fully-tempered glass, 1/8 inch thick.
 - b. Air space: 3/4 inch, dual-sealed.
 - c. Inboard light: Clear fully-tempered glass, 1/8 inch thick.
 - 2. Wall IGU's:
 - a. Outboard light: Clear fully-tempered glass, 1/8 inch thick.
 - b. Air space: 3/4 inch, dual-sealed.
 - c. Inboard light: Clear fully-tempered glass, 1/8 inch thick.
 - 3. Roof IGU's:
 - a. Outboard light: _____.
 - b. Air space: _____.
 - c. Inboard light: _____.
 - 4. Wall IGU's:
 - a. Outboard light: _____.
 - b. Air space: _____.
 - c. Inboard light: _____.
 - 5. Gaskets: Extruded EPDM, compatible with all system components.

- D. Sealant: Silicone sealant meeting requirements of ASTM C 920, Type M, S, or NS, Class 25.

2.3 FABRICATION

- A. Rigidly fit and secure joints and corners with connections that are flush, hairline, and weatherproof.
- B. Fabricate components to allow for expansion and contraction with minimum clearance and shim spacing around perimeter of assembly.
- C. Provide for draining to exterior any water entering exterior joints or condensation occurring in glazing channels.
- D. Prepare components to receive concealed anchorage devices.

2.4 ALUMINUM FINISH

- A. Pigmented Organic Coating System: PPG Duracron/Polycron paint finish complying with AAMA 603.8; electrostatically applied and baked.
 - 1. Color: Quaker Bronze.
 - 2. Color: White.
 - 3. Color: _____.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that foundation and adjacent construction are ready to receive solarium system, within tolerances acceptable to manufacturer. Coordinate preparation of adjacent work to ensure weathertight construction.

3.2 INSTALLATION

- A. Comply with manufacturer's installation instructions.
- B. Set solarium structure plumb, level, and true to line, without warp or rack of frames. Anchor securely in place, in accordance with approved shop drawings.

- C. Maintain assembly dimensional tolerances, aligning with adjacent work.
- D. Install sill flashings and flashings to adjacent construction.
- E. Install glazing system in accordance with manufacturer's recommended procedures.
- F. Mask adjacent surfaces, clean joint surfaces, and install backing and field-applied sealants in accordance with requirements of Section 07900.

3.3 CLEANING

- A. At end of each work day, leave immediate work area neat.
- B. Remove excess sealant promptly, using methods recommended by solarium manufacturer.
- C. At completion, wash exposed surfaces and wipe clean.
- D. Touch up damaged finishes so repair is imperceptible from 3 feet. Remove and replace components that cannot be satisfactorily touched up.

END OF SECTION