

Aluminum Framed Skylights

Description

Provide factory-finished pre-engineered aluminum glazing system for sloped glazing system, as indicated on Drawings and specified herein.

Quality Assurance

Qualifications: Fabricator/Installer must be experienced in the fabrication, finishing, and installation of aluminum framing and sloped type glazing systems and be regularly engaged in such work for a period of not less than five (5) years, and must be able to provide a 100% performance bond.

Approved Manufacturers: Evergreen House, Kirkland, WA telephone 425-821-1005 represented by R.G. Architectural, Redmond, WA telephone 425-881-8397, fax # 425-881-1161. Approval of alternative and / or substitute products will be considered only on ten (10) day prior approval to bid opening. Requests shall include manufacturer/installers name; five comparable jobs and contact person at each job.

Performance Criteria: All structural framing members shall provide a finished appearance equivalent to the geometric shape shown on the Drawings; variations from appearance are subject to approval of the Architect. Roof members and glass shall be designed to support a snow load of 25 pounds per square foot plus dead load; walls and roof shall be designed to resist positive and negative (inward and outward) wind pressure load of 16 pounds per square foot (psf) normal to the surface. Maximum allowable deflections of aluminum members under maximum design loads shall not exceed $l/175$.

All aluminum framing members shall be designed to a safety factor of 1.65. Structural fasteners shall provide a 4:1 safety factor when fully loaded.

Glazing system and related flashing shall be designed and fabricated so as to prevent water penetration. Water penetration is defined as the uncontrolled penetration of water (not including condensation) to the interior of the building through the glazing system.

Submittals

Shop Drawings: Include elevations and details of fabrication, anchorage and profiles of all components and materials, glazing details, and any other pertinent information.

Structural Calculations: Submit design calculations demonstrating compliance with the required wind load, live load , seismic load, and deflection requirements, including anchorage. Calculations shall be prepared by a Structural Engineer licensed in the State of Washington.

Samples: Submit samples of factory finish and glazing to the Architect for approval prior to proceeding with the work.

Product Delivery, Storage & Handling

Delivery and Handling: Protect all members from damage during shipping, handling, and installation. Store members off the ground in dry weather tight enclosures with adequate ventilation to avoid condensation.

Job Conditions

Verification and Measurements: Before fabrication verify all measurements at the job site to ensure proper fit. Allow sufficient time for taking accurate field dimensions so that fabrication and installation are within construction schedule. Exact measurements are the contractor's responsibility.

Warranties

General Warranty: Furnish Owner with five (5) year warranty covering repair or replacement of any defective materials or workmanship. For the purpose of this warranty, defective materials or workmanship as defined to include structural deformation or failure of components, damage to glass due to excessive movement, leakage of water or air infiltration into the building, excessive deflections, and deterioration of glazing gaskets.

Furnish Owner with a ten (10) year insulated glass warranty. Five (5) year single laminated.

Products

Design - Framing System

Rafters shall be extruded aluminum rectangular tubes of a depth and thickness required to satisfy performance criteria

Glazing system shall have condensation gutters as a portion of the extrusion.

At ridge, provide manufacturer's standard aluminum ridge closure.

Materials

Aluminum: Extruded aluminum complying with alloy 6063-T5, 6061-T6, or 6005-T5.

Fasteners: Exposed fasteners shall be held to a minimum. Fasteners shall be 300 series stainless steel; for bolting connection members. Hot dip galvanized steel bolts or anchors are to be used for anchorage to curbs or supporting structure.

Flashing: Fabricated from aluminum with an equivalent thickness of not less than .040 gage; refer to Drawings for type; match finish of framing members.

Glass: See Glass and Glazing Division Section 088000.

Fabrication

General: Glazing system shall be constructed using all extruded aluminum members of specified alloys. Insofar as practicable, fitting and assembly of the work shall be done in the shop; work which cannot be permanently shop assembled shall be completely assembled, marked and disassembled before shipment to job site. Welding to be performed by heliarc process. All exposed welds shall be ground to a minimum of 100 grit finish.

Glazing: All glazing caps shall be attached using stainless steel fasteners located a maximum of 18 inches on center; cap extrusion shall provide a uniform compression seal. At no point shall glass come into contact with metal parts of the glazing framing system. Install neoprene setting blocks as required to prevent glass breakage due to thermal expansion. Glazing to be bedded on continuous Butyl rubber seal, cap extrusion to be isolated from glazing with a continuous PVC glazing tape seal.

Waterproofing: Waterproofing shall be by means of continuous Silicone Sealants to prevent moisture and air from entering the system. Friction Fit covers are to be installed to cover all exposed cap fasteners.

Finish Of The Aluminum: (As selected by the Architect)

Color Of The Aluminum: (As selected by the Architect)

Do not commence finishing operation until forming and fabrication operation have been completed. Exposed surfaces shall receive the specified finish with no mill finish aluminum exposed.

Execution

Installation - Aluminum Framing and Glazing

Inspection: Verify that the structure and substrate to receive the system are properly prepared and ready to receive the glazing system. See that unsatisfactory conditions are corrected prior to start of installation

Preparation: Protect surfaces of aluminum in contact with dissimilar material, with isolation tape or another satisfactory methods.

Installation: Glazing system shall be completely erected and glazed by glazing system manufacturer with minimum five (5) years experience in sloped glazing.

Erect in strict accordance with manufactures instruction and recommendation and the approved shop drawings. Leave completely assembled, free of defects, watertight and ready for acceptance.

Cleaning

Cleaning: Upon completion , clean all aluminum and glass surfaces free from dirt, stains, and other defacing marks and materials. Leave all exposed surfaces free from scratches, dents, and other defects.