

SECTION 08620

UNIT SKYLIGHTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Individual unit skylights.
- B. Interior ceiling domes.
- C. Extra replacement domes.

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Wood curbs for skylights.
- B. Section 07510 - Built-Up Bituminous Roofing: Base flashing at skylight curbs.
- C. Section 07530 - Elastomeric Membrane Roofing: Base flashing at skylight curbs.
- D. Section 07550 - Modified Bituminous Sheet Roofing: Base flashing at skylight curbs.
- E. Section 07620 - Sheet Metal Flashing and Trim.
- F. Section 07610 - Sheet Metal Roofing: Metal flashing at skylight curbs.

1.3 REFERENCES

- A. AA - Aluminum Design Manual; The Aluminum Association.
- B. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum; American Architectural Manufacturers Association.
- C. AAMA 605.2 - Specification for High Performance Organic Coatings on Architectural Extrusions and Panels; American Architectural Manufacturers Association.
- D. AAMA 606.1 - Voluntary Guide Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum; American Architectural Manufacturers Association.

- E. AAMA 607.1 - Voluntary Guide Specification and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum; American Architectural Manufacturers Association.
- F. AAMA 1605.1 - Voluntary Standard Uniform Load Test Procedure for Plastic Glazed Skylights by Uniform Static Air Pressure Difference; American Architectural Manufacturers Association.
- G. ASTM D 4802 - Standard Specification for Poly(Methyl Methacrylate) Acrylic Plastic Sheet.
- H. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference.
- 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 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's descriptive literature, specifications, use limitations and recommendations.
- C. Shop Drawings: Prepared specifically for this project, include:
 - 1. Detailed plans and elevations, details of framing members, materials, sealants, fasteners, and anchors.
 - 2. Type and thickness of formed flashing and closures.
 - 3. Details of interface with adjacent materials.
- D. Selection Samples: Two sets of color charts or samples, for selection of colors.
- E. Glazing Samples: Two pieces of plastic glazing material in specified color, for verification.
- F. Metal Finish Samples: Two pieces of aluminum with specified finish and color, for verification; it is not necessary to submit mill finish samples.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 10 years experience in the fabrication and installation of similar products.
- B. Installer Qualifications: Minimum of 2 years experience in installation of similar units.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Arrange deliveries to avoid delays but to minimize on-site storage.
- B. Deliver products in labelled packages.
- C. Deliver, handle, and store in strict compliance with manufacturer's instructions and recommendations.

1.7 WARRANTY

- A. Skylight Warranty: Provide written warranty signed by manufacturer that products are free of defects in material and workmanship. Include repair or replacement of work for five years from date of completion. Defects are defined to include uncontrolled leakage of water and abnormal aging or deterioration.
- B. Fluoropolymer Finish Warranty: Provide written warranty signed by manufacturer and finisher that finish is free of defects in material and workmanship. Include repair or replacement of work which exhibits defects for five years from date of completion. Defects are defined to include peeling, chipping, chalking, fading, abnormal aging or deterioration, and failure to perform as required.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide products made by Naturalite Skylight Systems, Butler Manufacturing Company, P.O. Box 629, 750 Airport Road, Terrell, TX 75160. ASD. Tel: (800) 527-4018. Fax: (972) 551-6420.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

- D. For manufacturers not listed, submit evidence of ability to provide products that meet both performance and product requirements, including list of projects of similar design and complexity completed within the last 5 years.
- E. Provide primary materials that are made by a single manufacturer.

2.2 SKYLIGHTS

- A. Skylights - Performance Requirements: Design to withstand the following loads:
 - 1. Snow load: ___ psf (___ kPa).
 - 2. Wind load: ___ psf (___ kPa) negative.
 - 3. Seismic loads: As required by applicable code.
 - 4. Dead loads.
 - 5. Impact resistance: No breakage or disengagement of dome from frame upon impact of 775 pounds-force.
 - 6. Show compliance with wind load requirements by testing in accordance with ASTM E 330.
 - 7. Show compliance with wind load requirements by testing in accordance with AAMA 1605.1.
- B. Skylights: Factory-assembled, aluminum frame with plastic dome.
 - 1. ICBO-approved as evidenced by current ICBO-ES report; submit report number.
 - 2. Plastic Glazing: Comply with requirements of UBC 1994, Chapter 2603.7.
 - 3. Provide with label warning of the risk of falling, indicating that plastic glazing is not designed to support live loads.
 - 4. Design aluminum members in accordance with AA Aluminum Design Manual.
 - 5. When practical, take accurate field measurements before fabrication. Do not delay job progress; allow for field adjustment.
 - 6. Clear Anodized Finish: Comply with AAMA 607.1, A31.
 - 7. Color Anodized Finish: Comply with AAMA 606.1, A44.
 - 8. Baked Enamel Finish: Comply with AAMA 603.8; color to be selected from manufacturer's standard selection.
 - 9. Fluoropolymer Finish: 70 percent Kynar 500(R)/ Hylar 500(R), complying with AAMA 605.2; color to be selected from manufacturer's standard selection.
 - 10. Finish only exposed aluminum members.

- C. Skylight Type ____: For mounting on separate curb.
1. Frame: 0.078 inch (2.0 mm) extruded aluminum, with integral condensate gutter.
 2. Dome Retaining Angle: 0.062 inch (1.6 mm) extruded aluminum.
 3. Provide sufficient drainage slots to carry all moisture to the outside.
 4. Provide poured and debridged polyurethane thermal break frame without weep holes, with factory sealed corners; seal domes to frame with neoprene gaskets and between domes with isobutylene/isoprene gaskets.
 5. Type: Single dome.
 6. Type: Double dome.
 7. Type: Pyramid single dome.
 8. Type: Pyramid double dome.
 9. Domes: Acrylic plastic glazing.
 10. Domes: Polycarbonate plastic glazing.
 11. Outer Dome Color: Colorless.
 12. Outer Dome Color: White.
 13. Outer Dome Color: Bronze.
 14. Outer Dome Color: Grey.
 15. Inner Dome Color: Colorless.
 16. Inner Dome Color: White.
 17. Frame Finish: Manufacturer's standard, mill finish.
 18. Frame Finish: Clear anodized.
 19. Frame Finish: Bronze anodized.
 20. Frame Finish: Polyester baked enamel.
 21. Frame Finish: Fluoropolymer.
 22. Size: As indicated on drawings.
 23. Size: _____, outside curb dimension.
- D. Skylight Type ____: Insulated curb type.
1. Frame: 0.062 inch (1.6 mm) extruded aluminum, with integral condensate gutter.
 2. Dome Retaining Angle: 0.062 inch (1.6 mm) extruded aluminum.
 3. Curb: Double aluminum wall, 9 inches (229 mm) high, with 3 inch (75 mm) roof flange, and 1 inch (25 mm) layer of fiberglass insulation.
 4. Provide sufficient drainage slots to carry all moisture to the outside.
 5. Provide poured and debridged polyurethane thermal break frame without weep holes, with factory sealed corners; seal domes to frame with neoprene gaskets and between domes with isobutylene/isoprene gaskets.
 6. Type: Single dome.
 7. Type: Double dome.

8. Type: Pyramid single dome.
9. Type: Pyramid double dome.
10. Style: For installation on metal roof.
11. Domes: Acrylic plastic glazing.
12. Domes: Polycarbonate plastic glazing.
13. Outer Dome Color: Colorless.
14. Outer Dome Color: White.
15. Outer Dome Color: Bronze.
16. Outer Dome Color: Grey.
17. Inner Dome Color: Colorless.
18. Inner Dome Color: White.
19. Frame Finish: Manufacturer's standard, mill finish.
20. Frame Finish: Clear anodized.
21. Frame Finish: Bronze anodized.
22. Frame Finish: Polyester baked enamel.
23. Size: As indicated on drawings.
24. Size: _____, outside curb dimension.

E. Skylight Type ___: Self-flashing type, for single-ply roofing.

1. Curb and Frame: Two-piece, 0.078 inch (2.0 mm) extruded aluminum, 9 inches (230 mm) high, with 3 inch (75 mm) roof flange, with condensate gutter and sufficient drainage slots to carry all moisture to the outside, wood nailer and 3/4 inch (19 mm) thick polyisocyanurate insulation.
2. Removable 0.062 inch (1.6 mm) extruded aluminum cap flashing with snap-in corner covers.
3. Dome Retaining Angle: 0.050 inch (1.3 mm) extruded aluminum.
4. Type: Single dome.
5. Type: Double dome.
6. Domes: Acrylic plastic glazing.
7. Domes: Polycarbonate plastic glazing.
8. Outer Dome Color: Colorless.
9. Outer Dome Color: White.
10. Outer Dome Color: Bronze.
11. Outer Dome Color: Grey.
12. Inner Dome Color: Colorless.
13. Inner Dome Color: White.
14. Frame Finish: Manufacturer's standard, mill finish.
15. Frame Finish: Clear anodized.
16. Frame Finish: Bronze anodized.
17. Frame Finish: Polyester baked enamel.
18. Size: As indicated on drawings.
19. Size: _____, outside curb dimension.

- F. Skylight Type ____: Louvered curb type.
1. Curb and Frame: 0.072 inch (1.8 mm) extruded aluminum, with condensate gutter and sufficient drainage slots to carry all moisture to the outside.
 2. Fixed aluminum louvers on all 4 sides of curb.
 3. Dome Retaining Angle: 0.065 inch (1.6 mm) extruded aluminum, with butyl glazing tape.
 4. Type: Single dome.
 5. Type: Double dome.
 6. Domes: Acrylic plastic glazing.
 7. Domes: Polycarbonate plastic glazing.
 8. Outer Dome Color: Colorless.
 9. Outer Dome Color: White.
 10. Outer Dome Color: Bronze.
 11. Outer Dome Color: Grey.
 12. Inner Dome Color: Colorless.
 13. Inner Dome Color: White.
 14. Frame Finish: Manufacturer's standard, mill finish.
 15. Frame Finish: Clear anodized.
 16. Frame Finish: Bronze anodized.
 17. Frame Finish: Polyester baked enamel.
 18. Frame Finish: Fluoropolymer.
 19. Size: As indicated on drawings.
 20. Size: _____, outside curb dimension.
- G. Skylight Type ____: Continuous vaulted type, aluminum framed, for mounting on separate curb.
1. Rafters: Curved extruded aluminum, with compression-type glazing retainers using continuous black EPDM glazing gaskets above and below glazing.
 2. Rafter Spacing: Standard.
 3. Rafter Spacing: Custom.
 4. Sill Members: Collect and weep water infiltration and condensation to the exterior; factory-slot sill members at anchor locations to allow for thermal movement.
 5. Performance: No uncontrolled water leakage when tested in accordance with ASTM E 331, at 6.24 psf static pressure differential; submit test reports.
 6. Type: Single glazed.
 7. Type: Double glazed.
 8. Ends: Vertical.
 9. Ends: Domed.
 10. Ends: Open.
 11. Ends: Abutting walls.
 12. Ends: As indicated on drawings.
 13. Provide rafter glazing caps to conceal glazing fasteners.

14. Glazing: Acrylic plastic.
15. Glazing: Polycarbonate.
16. Outer Glazing Color: Colorless.
17. Outer Glazing Color: White.
18. Outer Glazing Color: Bronze.
19. Outer Glazing Color: Grey.
20. Inner Glazing Color: Colorless.
21. Inner Glazing Color: White.
22. Frame Finish: Manufacturer's standard, mill finish.
23. Frame Finish: Clear anodized.
24. Frame Finish: Bronze anodized.
25. Frame Finish: Polyester baked enamel.
26. Frame Finish: Fluoropolymer.
27. Size: As indicated on drawings.
28. Size: _____, outside curb dimension.
29. Provide factory-assembled units for sizes up to 20 feet (6100 mm) long and outside curb span of 87 inches (2210 mm) or less.

H. Skylight Type ____: Ridge type, for mounting on separate curb.

1. Frame: 0.078 inch (2.0 mm) extruded aluminum with condensate gutter and weep holes to carry all moisture to the outside.
2. Glazing Retaining Angle: 0.062 inch (1.6 mm) extruded aluminum.
3. Rafters: 0.080 inch (2.0 mm) extruded aluminum with manufacturer's standard glazing seals.
4. Type: Single glazed.
5. Type: Double glazed.
6. Glazing: Acrylic plastic.
7. Outer Glazing Color: Colorless.
8. Outer Glazing Color: White.
9. Outer Glazing Color: Bronze.
10. Outer Glazing Color: Grey.
11. Inner Glazing Color: Colorless.
12. Inner Glazing Color: White.
13. Frame Finish: Manufacturer's standard, mill finish.
14. Frame Finish: Clear anodized.
15. Frame Finish: Bronze anodized.
16. Frame Finish: Polyester baked enamel.
17. Size: As indicated on drawings.
18. Size: _____, outside curb dimension.

I. Skylight Type ____: Circular, with integral curb.

1. Glazing Retaining Angle: 0.062 inch (1.6 mm) extruded aluminum.

2. Curb: 0.032 inch (0.8 mm) aluminum curb walls, 3 inch (75 mm) mounting flange, condensate gutter, and weep holes to carry all moisture to the outside.
3. Curb Height: 4 inches (100 mm).
4. Curb Height: 9 inches (230 mm).
5. Type: Single dome.
6. Type: Double dome.
7. Dome: Acrylic plastic.
8. Outer Dome Color: Colorless.
9. Outer Dome Color: White.
10. Outer Dome Color: Bronze.
11. Outer Dome Color: Grey.
12. Inner Dome Color: Colorless.
13. Inner Dome Color: White.
14. Frame Finish: Manufacturer's standard, mill finish.
15. Size: As indicated on drawings.
16. Size: _____, outside curb dimension.

- J. Skylight Type ___: Cluster type, for mounting on separate curbs and intermediate supports.
1. Frame: 0.078 inch (2.0 mm) extruded aluminum, with condensate gutter and weep holes to carry all moisture to the outside.
 2. Rafters: 0.080 inch (2.0 mm) extruded aluminum with manufacturer's standard glazing seals, sloped at 1/4 inch per foot (1:48), minimum.
 3. Glazing Retaining Angle: 0.078 inch (2.0 mm) extruded aluminum.
 4. Type: Single dome.
 5. Type: Double dome.
 6. Type: Pyramid single dome.
 7. Type: Pyramid double dome.
 8. Domes: Acrylic plastic glazing.
 9. Outer Dome Color: Colorless.
 10. Outer Dome Color: White.
 11. Outer Dome Color: Bronze.
 12. Outer Dome Color: Grey.
 13. Inner Dome Color: Colorless.
 14. Inner Dome Color: White.
 15. Frame Finish: Manufacturer's standard, mill finish.
 16. Frame Finish: Clear anodized.
 17. Frame Finish: Bronze anodized.
 18. Frame Finish: Polyester baked enamel.
 19. Frame Finish: Fluoropolymer.
 20. Size: As indicated on drawings.
 21. Size: _____, outside curb dimension.

- K. Ceiling Domes: Inside-mounted ceiling dome, to fit inside well, shape and size as indicated on drawings.
 - 1. Frame: 0.050 inch (1.3 mm) extruded aluminum.
 - 2. Glazing: Acrylic plastic glazing.
 - 3. Dome Color: White.
 - 4. Frame Finish: Manufacturers standard acrylic white finish.
- L. Extra Domes: Skylight replacement dome without frame, for Skylight _____.
 - 1. Glazing: Acrylic plastic glazing.
 - 2. Color: Colorless.
 - 3. Color: White.
 - 4. Color: Bronze.
 - 5. Color: Grey.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Take field measurements to verify that fabricated work will fit spaces intended.
- B. Verify that areas in which work is to be installed are ready for installation and that curbs are installed and level.
- C. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install in strict accordance with manufacturer's instructions and recommendations and with approved shop drawings; provide a complete weatherproof assembly.
- B. Maintain dimension from top of curb to finish roofing of 8 inches (200 mm), minimum; provide additional blocking if required.
- C. Anchor securely to supporting structure, but allow for differential and thermal movement.
- D. Separate aluminum members from dissimilar metals with protective coating or sheet capable of preventing electrolytic action.
- E. Ensure that weep and condensation control measures function properly.

F. Coordinate with other work.

3.3 CLEANING AND REPAIR

- A. Do not remove the "risk of fall" label from units.
- B. Remove labels, part number markings, sealant smears, handprints, and construction dirt; protect installed work from damage.
- C. Clean all exposed surfaces immediately prior to final inspection, using non-abrasive materials and methods recommended by manufacturer.
- D. Repair damaged components and finishes in accordance with manufacturer's recommendations; replace work that cannot be repaired to the satisfaction of the Architect.

END OF SECTION