



MAJOR INDUSTRIES, INC.
P.O. Box 306
Wausau, Wisconsin 54402-0306
Phone: (715) 842-4616
Fax: (715) 848-3336
Toll Free: (888) SkyCost (888-759-2678)
<http://www.majorskylights.com>
e-mail: info@majorskylights.com

PRODUCT GUIDE SPECIFICATION

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including MasterFormat, SectionFormat, and PageFormat, contained in the CSI Manual of Practice.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 08630

METAL-FRAMED SKYLIGHTS

Specifier Notes: This section covers Auburn® metal-framed skylights with glass glazing. Consult Major Industries for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal-framed skylights with glass glazing.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to the skylights.

- A. Section 06100 - Rough Carpentry: Wood blocking.
- B. Section 07620 - Sheet Metal Flashing and Trim.
- C. Section 07720 - Roof Accessories: Manufactured curbs.
- D. Section 07920 - Joint Sealants.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.



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- A. AAMA 501.2 - Field Test of Metal Store Fronts, Curtainwall and Sloped Glazing for Water Leakage.
- B. AAMA/WDMA 1600/I.S. 7 - Skylights.
- C. AAMA 2603 - Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- D. AAMA 2605 - Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- E. ANSI Z97.1 - Safety Glazing Materials Used in Buildings.
- F. ASTM A 193 - Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
- G. ASTM B 211 - Aluminum and Aluminum-Alloy Bar, Rod, and Wire.
- H. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- I. ASTM B 316 - Aluminum and Aluminum-Alloy Rivet and Cold-Heading Wire and Rods.
- J. ASTM C 864 - Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- K. ASTM C 1036 - Flat Glass.
- L. ASTM C 1048 - Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
- M. ASTM C 1115 - Dense Elastomeric Silicone Rubber Gaskets and Accessories.
- N. ASTM D 2240 - Rubber Property - Durometer Hardness.
- O. ASTM E 283 - Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- P. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.



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- Q. ASTM E 331 - Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- R. ASTM E 773 - Accelerated Weathering of Sealed Insulating Glass Units.
- S. ASTM E 774 - Classification of the Durability of Sealed Insulating Glass Units.
- T. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Extruded aluminum members with an integral screw race for secure attachment of exterior caps and setting blocks.
 - 2. Integral guttering system within skylight framing members for positive condensation drainage.
- B. Performance Requirements:
 - 1. Framing Members: Sufficient sizes as required to support design loads.
 - 2. Deflection of a Framing Member in a Direction Normal to Plane of Glass: When subjected to uniform load, deflection shall not exceed $L/175$ or 1 inch of clear spans less than 20 feet, or $L/240$ of clear spans greater than 20 feet.
 - 3. Deflection of a Framing Member in a Direction Parallel to Plane of Glass: When carrying its full dead load, deflection shall not exceed an amount that will reduce glass or panel bite below 75 percent of design dimension and member shall have a 1/8 inch minimum clearance between itself and edge of fixed panel, glass, or component immediately adjacent, nor shall it impair function of or damage joint seals.

Specifier Notes: Provide project design data as required.

- C. Design Loads: Framing components shall be designed to support following loads:
 - 1. Live Load: [_____ psf] [As indicated on the drawings].
 - 2. Wind Load: [_____ psf] [As indicated on the drawings].
 - 3. Alternate Design Loads: Conform to state and local codes.
- D. Physical Properties:
 - 1. Air Infiltration:
 - a. ASTM E 283: Not to exceed 0.05 cfm/sq ft at a static pressure of 6.24 psf (50 mph).



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- b. AAMA/WDMA 1600/I.S. 7, SKG-HC40: Not to exceed 0.10 cfm/sq ft at a static pressure of 6.24 psf (50 mph).
2. Static Water Penetration:
 - a. ASTM E 331: No uncontrolled water leakage at a static pressure of 12 psf (69.3 mph) and a minimum water flow rate of 5 gal/hr/sq ft for 15 minutes.
 - b. AAMA/WDMA 1600/I.S. 7, SKG-HC40: No uncontrolled water leakage at a static pressure of 6 psf and a minimum water flow rate of 5 gal/hr/sq ft for 15 minutes.
3. Structural Load Test:
 - a. ASTM E 330: Maximum allowable deflection of any member shall not exceed L/175.
 - b. AAMA/WDMA 1600/I.S. 7, SKG-HC40: Permanent set of any frame member shall not exceed 0.4 percent of its unsupported span at 60 psf positive and negative test pressures.
4. Simulated Field Test: Test skylights for dynamic water resistance at a static pressure of 12 psf in accordance with AAMA 501.2. No uncontrolled water leakage.

E. Expansion and Contraction: Design and install components with provisions for expansion and contraction due to a 100 degree F temperature variation.

1.5 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including description of materials, components, fabrication, finishes, and installation.
- C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, tolerances, profiles, anchorage, connections, fasteners, provisions for expansion and contraction, drainage, flashing, finish, glazing, and attachments to other Work.
- D. Samples: Submit manufacturers samples of each type of finish and glazing material as requested before fabrication.
 1. Aluminum Finish: Color charts or range samples for selection of color as specified.
 2. Glazing Materials: Samples for verification of specified color, reflective coating, or ceramic frit pattern design as specified.
- E. Design Data:
 1. Submit manufacturers structural calculations showing sizes of framing members and loads applied to supporting structure based on design loads.



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2. Structural calculations shall be prepared in accordance with Aluminum Association Specifications for Aluminum Structures SAS30 by a professional engineer qualified in design of self-supporting, sloped glazed systems and licensed in state where skylights are to be installed.
- F. Test Reports: Submit certified test reports from a qualified independent testing agency, indicating skylights comply with specified requirements, based on testing of current products. Submit results from the following tests:
1. Air Infiltration: ASTM E 283.
 2. Water Penetration: ASTM E 331.
 3. Uniform Load Deflection: ASTM E 330.
 4. Simulated Field Test: AAMA 501.2.
- G. Manufacturers Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of skylights manufactured.
- H. Installers Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of skylights installed.
- I. Maintenance Manual: Submit manufacturer's maintenance and cleaning instructions for skylights.
- J. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturers Qualifications:
1. Continuously engaged in metal-framed skylight manufacturing with a minimum of 20 years successful experience.
 2. Able to demonstrate successful performance on comparable projects.
 3. Responsible for all skylight components.
- B. Installers Qualifications:
1. Minimum of 5 consecutive years successful experience in installation of similar metal-framed skylights.
 2. Approved by manufacturer.
 3. Installer's Personnel: Employ persons trained for installation of metal-framed skylights.

Specifier Notes: Describe requirements for a preinstallation meeting to coordinate the installation of the skylights. Edit the paragraph as required for the project.



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- C. Preinstallation Meeting: Convene a preinstallation meeting [2] [_____] weeks before start of installation of skylights. Require attendance of parties directly affecting work of this section, including Contractor, Architect, installer, and manufacturers representative. Review examination, preparation, installation, cleaning, protection, and coordination with other work.

1.7 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: Store materials in a clean, dry area in accordance with manufacturer's instructions.
- C. Handling: Protect materials and finish from damage during handling and installation.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Auburn® Skylights, A Division of Major Industries, Inc., PO Box 306, 7120 Stewart Avenue, Wausau, Wisconsin 54402-0306. Toll Free (888) 759-2678. Phone (715) 842-4616. Fax (715) 848-3336.

2.2 METAL-FRAMED SKYLIGHTS

- A. Style: [Single Slope] [Standard Ridge] [Hip Ridge] [Pyramid].
- B. Overall Dimensions: [_____ width x _____ length] [As indicated on the drawings].
- C. Framing: Extruded aluminum, ASTM B 221, Alloy 6063-T6 or 6061-T6. Material alloy, temper, and thickness shall be as required for loading, deflection, cross-sectional configuration, and finish.
- D. Glazing Strips: Extruded EPDM rubber, ASTM C 864 and C 1115.
 1. Durometer: 70 plus or minus.
 2. Color: Black.
- E. Setting Blocks: Extruded Type II EPDM.
 1. Support glass and provide proper edge clearances and glass bites in accordance with manufacturer's instructions.
 2. Hardness, ASTM D 2240, Type A: Durometer 80 plus or minus.
 3. Color: Black.



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F. Fasteners:

1. For Framing Connections: As required by connection.
 - a. Aluminum: ASTM B 211, Alloy 2024-T4.
 - b. Stainless Steel: ASTM A 193, Series B8 300.
 - c. Aluminum Rivets: ASTM B 316.
2. For Exterior Cap Retainers: Stainless steel screws, ASTM A 193, Series B8 300.
3. Finish: Exposed fasteners to match aluminum finish.

G. Flashing:

1. Anodized Coating: Aluminum, Alloy 5005.
2. Pigmented Organic Coating: Aluminum, Alloy 5052.
3. Thickness: 0.040 inch.

H. Sealants:

1. Nonstructural Flush Glazed Joints and Weather Seal Joints: Silicone sealants. Apply in accordance with sealant manufacturers instructions.
2. Do not use structural silicone sealants to support dead weight of vertical glass or panels.

I. Curb:

1. Continuous aluminum curb with expansion joints as required.
2. Locate weep holes in curb to positively drain condensation to exterior of skylight at each rafter connection.

J. Glazing Caps:

1. Extruded aluminum, Alloy 6063-T6.
2. Attach glazing caps with glazing cap fasteners located at a maximum of 9 inches on center or as required to resist negative loading.

2.3 ALUMINUM FINISH

Specifier Notes: Specify one of the following aluminum finishes and delete the others. Consult Major Industries for assistance in determining required finish for the specific application.

- A. Anodized Coating: Architectural Class I clear anodized, Type AA-M10C22A41.
- B. Anodized Coating: Architectural Class II clear anodized, Type AA-M10C22A31.
- C. Anodized Coating: Architectural Class I pigmented anodized, Type AA-M10C22A42/A44.
 1. Color: [_____] [As selected by Architect from manufacturers standard colors] [As indicated on the drawings].



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- D. Pigmented Organic Coating: AAMA 2603.
 - 1. Color: [_____] [As selected by Architect from manufacturers standard colors] [As indicated on the drawings].
- E. High-Performance Pigmented Organic Coating: AAMA 2605.
 - 1. Color: [_____] [As selected by Architect from manufacturers standard colors] [As indicated on the drawings].

2.4 GLASS

- A. Float Glass: ASTM C 1036.
- B. Heat-Treated Glass: ASTM C 1048.
 - 1. Surface Stress: 5000 psi plus or minus 1,500 psi.
- C. Laminated Glass: 2 lites interleaved with polyvinyl butyral (PVB).
 - 1. Safety Glazing: ANSI Z97.1 and CPSC 16 CFR 1201.
 - 2. PVB Interlayer:
 - a. For Annealed Glass: 0.030 inch thick.
 - b. For Heat-Strengthened Glass: 0.060 inch thick.
- D. Insulating Glass:
 - 1. CBA Rated by Insulating Glass Certification Council (IGCC): ASTM E 773 and E 774.
 - 2. Seals: Dual edge seals with silicone secondary seal.
 - 3. Exterior Lite: [Heat-strengthened glass] [Fully-tempered glass].
 - 4. Interior Lite: Laminated glass.

Specifier Notes: Specify one of the following sloped glass units and delete the others. Consult Major Industries for assistance in determining required sloped glass units for the specific application.

- E. Sloped Glass Units:
 - 1. Type: 1-5/16-inch insulating glass.
 - 2. Exterior Lite: 1/4-inch [heat-strengthened glass] [fully-tempered glass].
 - a. Tint: _____ .
 - b. Reflective Coating: _____ .
 - c. Surface Applied To: _____ .
 - 3. Air Space: 1/2 inch.
 - 4. Interior Lite: 9/16-inch clear laminated [heat-strengthened glass] [fully-tempered glass].
 - a. PVB Interlayer: 0.060 inch thick.
- F. Sloped Glass Units:
 - 1. Type: 1-1/16-inch insulating glass.
 - 2. Exterior Lite: 1/4-inch [heat-strengthened glass] [fully-tempered glass].



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- a. Tint: _____ .
3. Air Space: 1/2 inch.
4. Interior Lite: 5/16-inch clear laminated [heat-strengthened glass] [fully-tempered glass].
 - a. PVB Interlayer: 0.030 inch thick.

G. Sloped Glass Units:

1. Type: [7/16-inch] [9/16-inch] laminated [heat-strengthened glass] [fully-tempered glass].
2. Tint: _____ .
3. Reflective Coating: _____ .
4. Surface Applied To: _____ .
5. PVB Interlayer: 0.060 inch thick.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive skylights, including supporting structure and substrate for dimensions, tolerances, material conditions, and support. Installer and manufacturers representative shall be present.
- B. Notify Architect of conditions that would adversely affect installation or subsequent utilization of skylights. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Ensure supports to receive skylights are clean, flat, level, plumb, and square.

3.3 INSTALLATION

- A. Install skylights in accordance with manufacturer's instructions at locations indicated on the drawings.
- B. Install skylights level, plumb, square, accurately aligned, correctly located, and without warp or rack.
- C. Do not install skylight components with deficiencies or dimensional errors. Do not proceed with installation until unsatisfactory components are replaced.
- D. Anchor skylights securely in place to supports to resist all loads. Use attachment methods permitting adjustment for construction tolerances, irregularities, alignment, and expansion and contraction.
- E. Install skylights including flashing, fasteners, hardware, sealants, gaskets, and glazing materials required for a complete, weatherproof installation.



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- F. Isolate with protective barrier contact areas between aluminum and dissimilar metals.
- G. Sheet Metal Flashing: Install sheet metal flashing at skylight perimeter as specified in Section 07620.
- H. Sealants: Install sealants as required to prevent air and water intrusion as specified in Section 07920.

3.4 FIELD QUALITY CONTROL

- A. Inspect installed skylights for required fasteners, wet-sealing, and uniformity of retaining caps.
- B. Inspect skylight framing members for level and plumb.
- C. Inspect installation of sheet metal flashing and sealants.
- D. Inspect glazing units for cracks, deep scratches, and other damage.

3.5 CLEANING

- A. Clean installed skylights in accordance with manufacturer's instructions.
- B. Clean skylights inside and outside, including member connections and inside corners, immediately after installation and after sealants have cured.
- C. Remove temporary protective coverings and strippable coatings from prefinished metal surfaces.
- D. Remove labels and part number markings from components.
- E. Remove excess sealant in accordance with sealant manufacturer's instructions.
- F. Do not use harsh cleaning materials or methods that would damage metal finishes or glazing.

3.6 PROTECTION

- A. Protect installed skylights in accordance with manufacturer's instructions.
- B. Maintain protection to ensure that, except for normal weathering, skylights will be without damage or deterioration at time of substantial completion.
- C. Remove and replace glass units which are chipped, cracked, abraded, or otherwise damaged.

END OF SECTION