



## **PRODUCT SPECIFICATIONS**

B & B Sheet Metal, 25-40 50<sup>th</sup> Avenue,  
Long Island City, New York 11101  
PHONE: 718-433-2501; FAX: 718-433-2709;  
EMAIL: info@bbsheetmetal.com  
WEBSITE: www.bbsheetmetal.com

### **SECTION 08 62 20 - SHEET METAL FRAMED UNIT SKYLIGHTS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section includes: [Custom fabricated] [Manufactured] sheet metal framed, roof mounted, glass panel, unit skylights [for [\_\_\_\_\_] [historic restoration of [\_\_\_\_\_] ].
- B. Related sections:
  - 1. Section 06 10 00 - Rough Carpentry: Wood support curbs.
  - 2. Section [07 30 33 - Steep Slope Roofing] [07 41 00 - Metal Roof Panels] [07 50 00 – Membrane Roofing] [\_\_\_\_\_] : Roof system to receive unit skylights.
  - 3. Section 07 62 00 - Sheet Metal Flashings and Trim: Sheet metal flashings, counter flashings, and trim installed as part of roof system to prevent water penetration.
  - 4. Section 07 92 00 - Joint Sealants: Sealants and backing material used for installation of sheet metal skylights.

##### **1.2 REFERENCES**

- A. American National Standards Institute (ANSI): ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- B. American Society for Testing and Materials (ASTM):
  - 1. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - 2. Section A308 - Steel Sheet, Terne (Lead-Tin Alloy) Coated by Hot-Dip Process.
  - 3. ASTM A653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.
  - 4. ASTM B32 - Solder Metal.
  - 5. ASTM B101 - Lead-Coated Copper Sheet and Strip for Building Construction
  - 6. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
  - 7. ASTM B370 - Copper Sheet and Strip for Building Construction.



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8. ASTM C1036 - Flat Glass.
  9. ASTM C1048 - Heat Treated Float Glass, Kind HS, Kind FT Coated and Uncoated.
  10. ASTM C1172 - Laminated Architectural Flat Glass.
  11. ASTM E331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Differences.
  12. ASTM E546 - Frost Point of Sealed Insulating Glass Units.
  13. ASTM E576 - Frost Point of Sealed Insulating Glass Units in Vertical Position.
  14. ASTM E773 - Accelerated Weathering for Sealed Insulating Glass Units.
  15. ASTM E774 - Classification of the Durability of Sealed Insulating Glass Units.
- C. CPSC 16 CFR 1201 - Consumer Product Safety Commission Safety Standard for Architectural Glazing Materials.
- D. International Code Council (ICC): ICC IBC - International Building Code.
- E. National Roofing Contractors Association (NRCA): NRCA Roofing Manual.
- F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) – SMACNA Architectural Sheet Metal Manual.

### **1.3 PERFORMANCE REQUIREMENTS**

- A. Design and install skylights to support:
1. 20 PSF live load plus dead load.
  2. Negative wind or uplift loads for Project location.
- B. Water leakage: None measured in accordance with ASTM E331.
- C. Unit to provide for expansion and contraction caused by cycling temperature range of 140 degrees F without causing detrimental effects to unit.



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### **1.4 SUBMITTALS**

- A. Submit in accordance with Section 01 33 00 - Submittal Procedures:
  - 1. Product data.
  - 2. Shop drawings for sheet metal framed unit skylight showing configuration, elevations, plans, dimensions, material gauges, fastening methods, flashings, and installation details for actual Project conditions. Where appropriate, provide perspective sketches or photographs to illustrate design.
  - 3. Sample of selected material and finish.
  - 4. Copy of warranty required by Paragraph 1.7 for review by Architect.
  - 5. Manufacturer's installation and maintenance instructions.

### **1.5 QUALITY ASSURANCE**

- A. Manufacturer: Company specializing in manufacturer of sheet metal framed, glass panel, unit skylights with 5 years minimum successful, documented experience.
- B. Perform work in accordance with applicable details and requirements published in NRCA Roofing Manual and SMACNA Architectural Sheet Metal Manual.
- C. Comply with safety requirements of following standards. Where discrepancies exist, more stringent requirement shall govern.
  - 1. Consumer Product Safety Commission 16 CFR 1201.
  - 2. ICC IBC.

### **1.6 HANDLING**

- A. Deliver, store, and handle unit skylights to prevent breakage, scratching, gouging, abrasion, soiling, discoloration, staining, or other damage.

### **1.7 WARRANTY**

- A. Provide in accordance with Section 01 78 00 - Closeout Submittals: 1 year warranty to cover:
  - 1. Abnormal aging, deterioration, and other defects in metal materials and



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workmanship.

2. Weathertightness of skylight.

## **PART 2 - PRODUCTS**

### **2.1 ACCEPTABLE MANUFACTURERS**

- A. B & B Sheet Metal, Inc.  
25-40 50th Avenue  
Long Island City, New York 11101;  
P: 718-433-2501 F: 718-433-2709  
www.bbsheetmetal.com.
- B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01 25 13 - Product Substitution Procedures.

### **2.2 MATERIALS**

- A. Galvanized sheet steel: Zinc-coated steel sheet complying with ASTM A653, [26] [24] gauge thick.
- B. Copper sheet: Plain copper sheet complying with ASTM B370 and weighing [16] [20] ounces per square foot.
- C. Pre-patina copper sheet: Copper sheet weighing [16] [20] ounces per square foot and complying with ASTM B370 with greenish-brown patina oxidation film; Evergreen Copper as provided by B & B Sheet Metal.
- D. Lead-coated copper: Copper sheet with a thin lead coating complying with ASTM B101 and weighing [16] [20] ounces per square foot.
- E. Zinc-coated copper: Copper sheet with a thin zinc coating complying with ASTM [\_\_\_\_\_] and weighing [16] [20] ounces per square foot.
- F. Stainless steel: [26] [24] gauge corrosion resistant chromium, tin, and steel alloy complying with ASTM A167.
- G. Terne-coated stainless steel: [26] [24] gauge stainless steel sheet with a hot dipped lead and tin terne coating complying with ASTM A167 and ASTM A308.
- H. Aluminum sheet: 0.025 inch thick aluminum sheet complying with ASTM B209 and finished with [thermoset polyester enamel finish with [brown] [high gloss white] [bronze] color.] [fluoropolymer Kynar coating in color selected by Architect from manufacturer's



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full range.]

### I. Glazing:

[1/4 inch thick, monolithic, clear, laminated safety glass complying with ASTM C1172, ANSI Z97.1, and CPSC 16 CFR.]

[1/4 inch thick, monolithic, translucent, laminated safety glass fabricated by bonding two glass lites with white translucent interlayment and complying with ASTM C1172, ANSI Z97.1, and CPSC 16 CFR.]

[1/4 inch thick, monolithic, clear wire glass with square mesh of woven stainless steel wire conforming to ASTM C1036, Type II.]

[1/4 inch thick, monolithic, clear hammered wire glass with square mesh of woven stainless steel hammered wire conforming to ASTM C1036, Type II.]

[1/4 inch thick, monolithic, clear, ribbed glass.]

[1 inch thick, bronze tinted, insulating, fully tempered safety glass complying with ASTM E546, ASTM E576, ASTM E773, and ASTM E774.

1. Outer lite: 1/4 inch thick, bronze tinted, fully tempered safety glass heat treated in accordance with ASTM C1048, Kind FT to meet requirements of ANSI Z97.1 and CPSC 16 CFR to qualify as safety glass.
2. Inner lite: 1/4 inch thick, clear, fully tempered safety glass heat treated in accordance with ASTM C1048, Kind FT to meet requirements of ANSI Z97.1 and CPSC 16 CFR to qualify as safety glass.]

[1 inch thick, white translucent, insulating, laminated safety glass complying with ASTM E546, ASTM E576, ASTM E773, and ASTM E774.

1. Outer lite: 1/4 inch thick, translucent, laminated safety glass fabricated by bonding two glass lites with white translucent interlayment and complying with ASTM C1172, ANSI Z97.1, and CPSC 16 CFR.
2. Inner lite: 1/4 inch thick, clear, fully tempered safety glass heat treated in accordance with ASTM C1048, Kind FT to meet requirements of ANSI Z97.1 and CPSC 16 CFR to qualify as safety glass.]

[1 inch thick, low emissivity (low-E), insulating glass complying with ASTM E546,



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ASTM E576, ASTM E773, and ASTM E774.

1. Outer lite: 1/4 inch thick, fully tempered, low-E glass with neutral coating pyrolytically applied to produce durable surface and resulting in improved thermal performance and reduced solar heat gain complying with ASTM C1048, Kind FT to meet requirements of ANSI Z97.1 and CPSC 16 CFR to qualify as safety glass.
  2. Inner lite: 1/4 inch thick, clear, fully tempered safety glass heat treated in accordance with ASTM C1048, Kind FT to meet requirements of ANSI Z97.1 and CPSC 16 CFR to qualify as safety glass.]
- J. Sealant: [Silicone] [Polyurethane] [Acrylic] [\_\_\_\_\_] type specified in Section 07  
92 00 - Joint Sealants.
- K. Solder: ASTM B32.

### **2.3 UNIT SKYLIGHTS FOR SLOPED ROOFS**

- A. Type: Sheet metal framed, glass panel, unit skylight for installation on sloped roof with [shingle] [wood shake] [metal panel] [\_\_\_\_\_] roof membrane; [Flat] [Flat Vented] [Flat Ridge] Sloped Roof Skylight as manufactured by B & B Sheet Metal.]
- B. Rough roof opening size: [\_\_\_\_\_] inches wide by [\_\_\_\_\_] inches long.
- C. Configuration:
- Flat Sloped Roof Skylight.**  
Rectangular skylight with two glass panels installed level with plane of sloped roof.
- Flat Vented Sloped Roof Skylight.**  
Rectangular skylight installed level with plane of sloped roof with two glass panels and one ventilation opening with sloped sheet metal cover and insect screen.
- Flat Ridge Sloped Roof Skylight.**  
Rectangular, double pitched, skylight with four glass panels designed for installation along ridge of a sloped roof.
- D. Roof mounting curb: [[Gutter Curb] [Common Bar Curb] [Puddy Bar Curb] [Roof Flange Curb] [ Custom Wall Flashing Curb] as manufactured by B & B Sheet Metal.]



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[As detailed on Drawings and reviewed shop drawings and designed to flash into room membrane and provide watertight installation.]

### **2.4 UNIT SKYLIGHTS FOR FLAT ROOFS**

- A. Type: Sheet metal framed, glass panel, unit skylight [with raised base structure] for installation on a flat roof with [built-up] [shingle ply] [\_\_\_\_\_] roof membrane; [Gable] [Flat Pitch] [Vented Flat Pitch] [Hip Ridge] [Hip Vent] Flat Roof Skylight as manufactured by B & B Sheet Metal.]
- B. Rough roof opening size: [\_\_\_\_\_] inches wide by [\_\_\_\_\_] inches long.
- C. Configuration:

#### **Gable Flat Roof Skylight.**

Rectangular, double pitched skylight with four rectangular glass panels and two triangular glass panels at each gable end installed level with plane of flat roof.

#### **Flat Pitch Flat Roof Skylight.**

Rectangular, single pitched skylight with two glass panels and solid metal sides.

#### **Vented Flat Pitch Flat Roof Skylight.**

Rectangular, single pitched skylight with two glass panels, one ventilation opening with sloped sheet metal cover and insect screen, and solid sheet metal sides.

#### **Hip Ridge Flat Roof Skylight.**

Pyramid shaped skylight with four triangular glass panels.

#### **Hip Vent Flat Roof Skylight.**

Pyramid shaped skylight with four trapezoidal glass panels and one ventilation opening at apex of pyramid with sloped sheet metal cover and insect screen.

*Flat roof skylights can be provided with a box-shaped base structure to raise skylight above the flat roof plane. Two type of base are provided by B & B Sheet Metal:*

#### **Louver Base:**

Sides of base are fixed louver panels.

#### **Turret Base:**

Sides of base are glass panels providing additional light through skylight.



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- D. Base structures: Provide skylight with box-shaped base structure to rise skylight above flat roof plane.
1. Type: Sheet metal base to match material and rough roof opening of skylight with side panels with fixed [Z-shaped] [flat] [V-shaped] [L-shaped] blades providing [\_\_\_\_\_] percentage free air flow and [copper] [bras] [fiber] insect screens; Louver Base as manufactured by B & B Sheet Metal.
  2. Type: Sheet metal base to match material and rough roof opening of skylight with glazed side panels; Turret Base as manufactured by B & B Sheet Metal.

*Five different roof mounting curbs are provided for flat roof skylights and louver and turret bases as illustrated in B & B Sheet Metal Product literature. Depending on location of skylight in roof system, adjacent construction, and special Project requirements, skylight may required a combination of curb types.*

- E. Roof mounting curb: [[Gutter Curb] [Common Bar Curb] [Puddy Bar Curb] [Roof Flange Curb] [ Custom Wall Flashing Curb] as manufactured by B & B Sheet Metal.] [As detailed on Drawings and reviewed shop drawings and designed to flash into roof system and provide watertight installation.]

### **2.5 PROTECTIVE SCREENS**

- A. Equip skylights with wire mesh protective screens installed on [exterior top side of skylight] [and] [on bottom interior side of skylight].
- B. Size: As required to completely cover [exterior glazed area] [and][interior roof opening].
- C. Construction:
1. Frame: 3/8 inch galvanized steel rod.
  2. Screen: 1-1/4 inches diamond mesh of woven 0.105 inch diameter galvanized wire.
  3. Provide screen frame with attachment tabs and screw type fasteners for anchoring screens to sheet metal frame of skylight.

### **2.6 SKYLIGHT FABRICATION**

- A. Design and shop fabricate unit skylights to meet performance requirement specified in Paragraph 1.3.



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- B. Fabricate skylights from formed sheet metal members with [soldered] [welded] joints and mitered corners as detailed on Drawings and reviewed shop drawings. Design glazing bars to accommodate spans and Project loads:
1. Spans greater than 48 inches: Triangular tubular member with flashing and drainage flanges; Puddy Bar as provided by B & B Sheet Metal.
  2. Spans less than 48 inches: Y-shaped flanged member: Common Bar as provided by B & B Sheet metal.
  3. Glazed panels: Provide glass panels of shape and size illustrated on Drawings and reviewed shop drawings with [1/4] [1] inch thick [monolithic, clear, laminated safety glass] [monolithic, translucent white, laminated safety glass] [monolithic, clear wire glass] [monolithic, clear, hammered wire glass] [monolithic, clear, ribbed glass] [bronze tinted, insulating, fully tempered safety glass] [white translucent, insulating, laminated safety glass] [low-E), insulating glass].
    - a. Factory glaze skylights. Install glass on setting blocks. Secure with removable metal stops and resilient gaskets. Ensure weathertightness.
- C. Fabricate skylights free of visual distortion and defects.
- D. Provide for removal of condensation with internal gutter and nonclogging weepholes.
- E. Fabricate to drain water entering joints, or migrating moisture occurring within unit, to exterior.
- F. Edges: Turn back all exposed edges to form 1/2 inch hem.
- G. Soldering: Clean and tin materials. Completely fill seams with solder. Soldering on exposed finished surfaces shall be neat, full flowing, and smooth. After soldering, remove flux and wipe and wash joints clean.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Coordinate provision of skylights with type and installation of roof deck and membrane, wood blocking and nailers, [\_\_\_\_\_] and other work related to sheet metal skylights.
- B. Prior to submittal of shop drawings and fabrication, field verify required sizes and installation tolerances for sheet metal skylights.



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- C. Deliver sheet metal skylights to site in time for accurate placement and coordination with other work.
- D. Verify roof membrane terminations and base flashings are in place, sealed, and secure.
- E. Coat dissimilar materials in contact with sheet metal:
  - 1. Concrete and masonry: One coat bituminous paint.
  - 2. Wood: 2 coats aluminum paint.

### **3.2 INSTALLATION**

- A. Install sheet metal skylights in accordance with Drawings, reviewed shop drawings, manufacturer's instructions and NRCA Roofing Manual and SMACNA Architectural Sheet Metal Manual standards of workmanship.
- B. Do not allow sheet metal to come in contact with dissimilar materials.
- C. Do not install bent, twisted, scratched, or otherwise damaged sheet metal skylights. Remove from site and replace.
- D. Secure skylights in place using concealed fasteners unless shown otherwise. Lap and seal all joints. Exposed fasteners shall be covered with sealant.
- E. Install sealants to achieve weathertightness in accordance with recommendations of skylight manufacturer and general installation requirements of Section 07 92 00 - Joint Sealants.
- F. Protect finishes of exposed to view sheet metal surfaces. Avoid gouging, scratching, and denting. Use cotton gloves when handling and installing unprotected sheet metal in order to avoid soiling exposed to view surfaces.

### **3.3 CLEANING**

- A. Remove protective materials from surfaces.
- B. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.
- C. Exercise care in removing mortar, cementitious materials, and sand from sheet metal skylights. Do not wipe surfaces in order to avoid scratching.



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- D. Wash exposed surfaces with solution of mild detergent applied with soft cloth. Remove dirt from corners. Wipe surfaces clean.

**END OF SECTION**