

# **SPECIFICATIONS SECTION 07 72 00**

## **UL LISTED HEAT AND SMOKE VENTS**

### **PART 1 – GENERAL**

#### **1.01 SUMMARY**

##### **A. Section includes:**

1. Prefabricated UL Listed heat and smoke vents, with UL 972 Impact resistant SkyArc domed lids, curbs, hardware and counter flashing.
2. Prefabricated UL Listed heat and smoke vents with metal lids, curbs, hardware and counter flashing.

##### **B. Related Sections:**

1. Section 07510 – Built-up Bituminous Roofing
2. Section 07525 – Modified Sheet Roofing.
3. Section 07360 – Single Ply Membrane Roofing
4. Section 07600 – Flashing and Sheet Metal Trim
5. Section 07610 – Sheet Metal Roofing
6. Section 077200 – Roof Accessories for manufactured metal curbs for unit skylights

#### **1.02 REFERENCES**

##### **A. Aluminum Association (AA)**

1. Specifications for Aluminum Structures.

##### **B. American Architectural Manufacturers Association (AAMA)**

1. AAMA 1600/IS7, Skylight Standard
2. AAMA Skylight Installation Manual
3. AAMA 1505.1-87, Voluntary Standard Uniform Load Test Procedure for Plastic Glazing Skylights by Uniform Static Air Pressure Difference.

##### **C. American Society for Testing and Materials (ASTM)**

1. ASTM D4802 Specification for Poly (Methyl Methacrylate) Acrylic Plastic Sheet
2. ASTM E331 Test Method for Water Penetration of Exterior Windows, Curtain Walls and doors by Static Air Pressure Difference.
3. ASTM A-463 Specification for Steel Sheet, Cold Rolled, Aluminum Coated, Type 1 or Type 2.
4. ASTM A-653 Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Alloy Coated by the Hot Dip process.
5. ASTM A 792 Specification for Steel Sheet, Fifty-Five Percent Aluminum-Zinc Alloy coated by the Hot Dip Process.

##### **D. International Building Code (2021) and International Fire Code (2021)**

##### **E. National Roofing Contractors Association (NRCA)**

1. Roofing and Waterproofing Manual.

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- F. Underwriters Laboratory (UL)
  - 1. UL 972 Standard for Burglar and Impact Resistant Glazing.
  - 2. UL 793 Standard for Heat and Smoke Vents
- G. National Fire Protection Association (NFPA)
  - 1. NFPA 204 Standard for Heat and Smoke Vents
- H. American Welding Society (AWS)
  - 1. AWS D1.1 Structural Welding Code

#### **1.03 PERFORMANCE REQUIREMENTS**

- A. Polycarbonate glazed smoke vents shall conform to the recommendations of AAMA 1600/IS7
- B. Smoke Vents (Polycarbonate glazed or Metal Lids) shall operate automatically, in accordance with the operating requirements of UL 973.
- C. Glazing material shall be UL 972 Listed for Impact resistance
- D. Plastic domed units shall be tested to an 800 lb/sq.ft impact load and certified by a third-party UL approved testing agency. Manufacturer's products supplied as an alternate to the specifications must provide a copy of the 800 lb/sq.ft impact test for approval.
- E. Smoke Vents shall operate automatically by activation of a UL Listed or FM Approved fusible link. Link temperature as required by AHJ.
- F. UL Smoke Vents shall be tested to and passed the air infiltration and water penetration performance requirements for unit skylights per AAMA/WDMA/CSA 101/I.S./A440-11 and a third-party test report shall be provided indicating compliance.
- G. Units shall comply with the specific requirements of the Authority Having Jurisdiction (AHJ) and may include any of the following:
  - 1. Exterior and/or interior manual release.
  - 2. Activation by smoke detector through an electronic relay system
  - 3. Activation by a remote manual control system utilizing electro-thermal links (ETL)
  - 4. Activation by a re-settable Electro-thermal link (ETL or McCabe ETL Link)

#### **1.04 DELIVERY, STORAGE AND HANDLING**

- A. Handle, deliver and store in manufacturer's original packaging, following the manufacturer's recommendations. Store in a dry area and in a manner to prevent damage.
- B. Exercise caution when hoisting unit to the roof so as not to damage the release mechanism.
- C. Check for damage to manual release

#### **1.05 WARRANTY**

- A. Smoke Vent Warranty: Provide written warranty by the manufacturer, agreeing to repair or replace work that exhibits defects in materials or workmanship, yellowing or breakage.
- B. Warranty period to be 10 years from date of installation.

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#### PART 2 – PRODUCTS

##### 2.01 PLASTIC DOMED LID UL LISTED HEAT AND SMOKE VENTS

- A. Manufacturers: Subject to compliance with requirements. Approved manufacturers are:
  - 1. Acralight Solar, 11932 Baker Place, Santa Fe Springs, CA 90670, phone (562) 696-1570  
[www.acralight.com](http://www.acralight.com)
  - 2. Or approved equal. (Prior approval shall be obtained 10 days prior to bid date)
- B. Manufactured units: UL 793 Listed smoke and heat vent, Double-Lid, with UL or FM approved fusible link, link temperature as required.
  - 1. Acralight Solar Model Number S-ULSV2D (for galvanized steel) or A-ULSV2D (for aluminum)
  - 2. Finish: Manufacturer's standard mill finish aluminum or galvanized steel.
  - 3. Inside curb dimension to be 48" x 96" or as shown on drawings.
- C. Domed Lids: Polycarbonate SkyArc, UL 972 Listed white glazing outer dome, (optional clear inner dome) in aluminum or galvanized steel frame. Designed to withstand a 90 psf uplift load in the closed position. Units shall be tested to meet an 800 lb impact load with no penetration. Units shall be furnished with an exterior and/or interior manual release handle. When released, lids shall open against a 10 psf positive external load and lock in the open position.
- D. Curbs: Curb Mounted unit (CM) or self-flashing (SF) curbs or Metal Building Curbs (MB) to be manufacturer's standard aluminum or galvanized steel, 12" high (or as noted on drawings) with optional 1" thick insulation and/or a 1" x 4" wood nailer.
- E. Optional Ventilated Base for natural gravity ventilation: (Add if required) ventilated louvered base, Model S-ULSV2D-L3 (steel) or Model A-ULSV2D-L3 (aluminum) and include a galvanized steel wire mesh bird screen and/or insect screen as required.
- F. Steel Security Bars: (Add if required) Optional steel security/burglar bars by Acralight Solar shall be ½" steel bars welded and assembled into a 1 ½" x 1 ½" x 1/8" steel angle frame and provided with a white powder coated paint finish tested to meet an 800 lb Impact load. Check local code requirements for bar spacing. Bars as manufactured by: Acralight Solar, 11932 Baker Place, Santa Fe Springs, CA 90670, phone (562) 696-1570 [www.acralight.com](http://www.acralight.com) or approved equal.

##### 2.02 METAL LID UL LISTED HEAT AND SMOKE VENTS

- A. Manufacturers: Subject to compliance with requirements. Approved manufacturers are:
  - 1. Acralight Solar 11932 Baker Place, Santa Fe Springs, CA 90670, phone (562) 696-1570  
[www.acralight.com](http://www.acralight.com)
  - 2. Or approved equal (Prior approval shall be obtained 10 days prior to bid date)
- B. Manufactured units: UL Listed Metal Lid heat and smoke vent with Double-Lid, including UL or FM approved fusible link, link temperature as required by Authority Having Jurisdiction (AHJ).
  - 1. Acralight Solar Model Number S-ULSV2D-ML (for galvanized steel) or A-ULSV2D-ML (for aluminum)
  - 2. Finish: Manufacturer's standard mill finish aluminum or galvanized steel.
  - 3. Inside curb dimension to be 48" x 96" or as shown on drawings.

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- C. Metal Lids: Aluminum or galvanized steel lids with 1" rigid insulation and interior metal liner. Designed to withstand a 90 psf uplift load in the closed position. Units shall be furnished with an interior and/or exterior manual release handle. When released, lids shall open against a 10 psf positive external load and lock in the open position.
- D. Self-flashing Curbs: Curb mount unit (CM) or on curbs to be manufacturer's standard aluminum or galvanized steel, 12" high (or as noted on drawings) with 1" thick insulation and/or a 1" x 4" wood nailer.
- E. Steel Security Bars: Optional steel security/burglar bars by Acralight Solar shall be ½" steel bars welded and assembled into a 1 ½" x 1 ½" x 1/8" steel angle frame and provided with a white powder coated paint finish. Provide third-party testing to certify bars meet an 800 lb impact load. Acralight Solar (562) 696-1570 or approved equal.

#### 2.03 FABRICATION

- A. Fabricate free of visual distortions and defects. Weld corners and joints.
- B. All fasteners and hardware shall be corrosion resistant.
- C. Provide for removal of condensation.
- D. Provide a weather tight assembly.
- E. Provide a UL Label in accordance with UL 793. UL Label to include:
  - 1. Manufacturer's name or identifying symbol.
  - 2. Catalog or Model number.
  - 3. The word "Caution" and the following:
    - a. Automatically operated Vent
    - b. Risk of Injury
    - c. Do not place anything on top of this device
  - 4. The date or other dating period of manufacture for traceability.
  - 5. The Class of roof deck construction (30, 60, or 90) the vent is intended for.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Install completely assembled smoke vents with curbs in accordance with manufacturer's instructions. Coordinate roof membrane installation requirements specified in other Sections.
- B. Smoke Vent curbs bearing on roof deck:
  - 1. Set units in place and secure curb flange to steel roof deck by self-tapping non-corrosive screw fasteners, spaced at a maximum of 12" on center, staggered.
- C. Apply bituminous paint on metal surfaces of units in contact with cementitious material and dissimilar metals.
- D. After installation, remove shipping screws and test vents to ensure that vents operate as intended utilizing the exterior manual release handles.

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**3.02 INSPECTION AND MAINTENANCE**

- A. Inspect and maintain smoke vents in accordance with the requirements of the NFPA 204, Standard for Heat and Smoke Vents, 2021 Edition.
- B. Maintain heat and smoke vents in accordance with the NFPA 204, 2021, Chapter 12.

**END OF SECTION**