

## **SECTION 07 72 53**

### **SNOW GUARDS**

This section has been prepared by Metal Roof Innovations, Ltd. for use in the preparation of a project specification. Attachment may be by one of the following methods:

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

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Snow guards for metal roofs.
  - 2. Face fastened attachment system.

##### **1.2 RELATED SECTIONS**

- A. Division 01: Administrative, procedural and temporary work requirements apply to this section.
- B. Section 07 41 13 – Metal Roof Panels
- C. Section 07 61 00 – Sheet Metal Roofing
- D. Section 07 62 00 – Sheet Metal Flashing and Trim
- E. Section 07 72 53 – Roof Accessories – Snow Guards
- F. Section 13 34 19 – Metal Building Systems

##### **1.3 REFERENCES**

- A. Aluminum Association (AA) - Aluminum Standards and Data, Current Edition.
- B. ASTM International (ASTM):
  - 1. A484/A484M-16 – Standard Specifications for General Requirements for Stainless Steel Bars, Billets and Forgings.
  - 2. A554-16 – Standard Specification for Welded Stainless Steel Mechanical Tubing.
  - 3. A555/A555M-16 – Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods.
  - 4. B85-03 - Standard Specification for Aluminum-Alloy Die Castings.
  - 5. B221-04a - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
  - 6. F836M-02 (Current) – Standard Specification for Style 1 Stainless Steel Metric Nuts (Metric).
  - 7. F880-12 – Standard Specification for Stainless Steel Socket, Square Head, Torx and Slotted Headless-Setscrews.
- C. ICC Evaluation Service ([www.icc-es.org](http://www.icc-es.org)):
  - 1. Division: 05 00 00 – METALS; Section: 05 05 23 – METAL FASTENERS Evaluation Report ESR-3869.

## 1.4 SUBMITTALS

### A. Action Submittal:

1. Shop Drawings: Include roof plans showing locations of snow guards on roof and attachment details and spacing.
2. Product Data:
  - a. Product description.
  - b. Construction details.
  - c. Material descriptions.
  - d. Individual component dimensions.
  - e. Finishes.
  - f. Installation instructions.
3. Samples:
  - a. Bracket samples.
  - b. 12-inch long cross member samples including all associated hardware.

### B. Informational Submittals:

1. Proof of Job-Specific Engineering: Include registered professional engineer wet-stamped calculation for number and frequency of snow guard attachments based on design roof snow load, roof slope, roof dimensions, specific roof profile name, material type, gauge thickness and brand of manufacture; brand and model of snow retention device.  
[(<https://s-5.com/snow-calculator/>)]
2. Proof of Product Testing: Results of appropriate product tensile load testing, issued by a recognized ISO 17025 accredited independent testing laboratory, showing the mean (of a minimum three test pulls) ultimate load-to-failure value of attachment **[bracket] [clamping device]** proposed on the specimen material named in B.1.
3. Proof of Certified Production: Copy of manufacturer current ISO 9001 certificate (latest edition).
4. Proof of Best Practice Compliance: Manufacturer duly executed letter stating full compliance with all provisions of the Metal Construction Association technical bulletin, "Qualifying Snow Retention Systems for Metal Roofing" (latest edition).

### C. Closeout Submittals:

1. Certification: Installer's certification or duly executed letter stating snow guard system was installed in accordance with manufacturer's instructions and approved shop drawings.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer to specialize in production of snow guard products of the type specified with a minimum of 10 years documented experience.
- B. Manufactured in an ISO 9001 certified facility; ICC audited facility.
- C. Installer Qualifications: Installer to specialize in metal roof installation and installation of snow guard products with a minimum of 5 years documented experience.
- D. Mockup:
  1. Size: Minimum **[8]** ☐ feet long.
  2. Show: Snow guard attachment, cross members and accessories.
  3. Locate **[where directed]** ☐.
  4. Approved mockup may remain as part of the Work.

- E. Warranty:
  - 1. Lifetime material/workmanship warranty on all products.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver components to jobsite properly packaged to provide protection during transport, delivery and handling.
- B. Store products in manufacturer's original labeled and unopened packaging in a clean and dry location, protected from potential damage, until ready for application.

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTION

- A. Attachment system to provide attachment to trapezoidal exposed-fastened metal roofs:
  - 1. Factory-applied butyl sealant.
  - 2. Without use of sealants or adhesives.
- B. Performance Requirements: Provide snow guards to withstand exposure to the weather and environmental elements and resist design forces without failure due to defective material or manufacture.
  - 1. Loading: Design snow guard system to resist minimum design roof snow load(s) [of \_\_\_\_] [See **structural drawings for roof design snow loads**].
  - 2. Factor of Safety: Utilize a factor of safety  $\geq$  [2] [\_\_\_\_] to determine allowable loads from ultimate tested bracket tensile mean load values.
  - 3. Source Limitation: Provide snow guard system as designed and tested by the manufacturer as a complete system. Install all system components by the same manufacturer.

### 2.2 MANUFACTURER

- A. Basis of Design: S-5!® div. of Metal Roof Innovations, Ltd., 500 W. Highway St., Iowa Park, TX 76367; Tel: 888-825-3432; Fax: 719-495-0045; Email: [support@s-5.com](mailto:support@s-5.com); Web: [www.s-5.com](http://www.s-5.com)
- B. Acceptable Manufacturers if products meet specification requirements:
  - 1. S-5!® div. of Metal Roof Innovations, Ltd. <https://www.s-5.com/>
  - 2. LMCurbs. <https://www.lmcurbs.com/>
  - 3. Rocky Mountain Snow Guards Inc. <https://www.rockymountainsnowguards.com/>
- C. Substitutions: [Under provisions in Division 1.] Not permitted.

### 2.7 CONTINUOUS, PIPE-TYPE SNOW RETENTION SYSTEMS FOR EXPOSED FASTENED ROOFS

- A. Basis of Design: VersaGard™, manufactured by S-5! div. of Metal Roof Innovations, Ltd.
  - 1. Bracket:
    - a. Manufactured from 6000-series aluminum extrusions conforming to ASTM B221 and to AA Aluminum Standards and Data.
      - 1) Model: VersaGard.
    - b. Screws for attachment of brackets to roof: Type best suited to application: Metal to metal applications: ¼-14 self drilling point, 2 inch (50.8 mm) length, 3/8 inch (9.525 mm) hex washer head, Zinc/Aluminum cap. Metal to wood applications: ¼-14 type 17 AB milled point, 2 inch (50.8 mm) length, 3/8 inch (9.525 mm) hex washer head, Zinc/Aluminum cap as recommended and supplied by manufacturer.
  - 2. Pipes (Cross Members):

- a. Manufactured from 6000-series alloy and temper aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.
    - 1) Model: DualPipe
- 3. Pipe Couplings (Splices):
  - a. Manufactured from 6000-series alloy and temper aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.
- 4. Pipe Collar:
  - a. Manufactured from 6000-series alloy and temper aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data, with 1/4-20 x 3/8 inch (9.525 mm) stainless steel setscrew.
    - 1) Model: DualCollar
- 5. Snow and Ice Clips:
  - a. Aluminum, with rubber foot, minimum 3 inches (76.2 mm) wide.
    - 1) Model: DualClip II
- 6. End Caps:
  - a. Metal snap-in.

## **PART 3- EXECUTION**

### **3.1 EXAMINATION**

- A. Prior to beginning installation, verify:
  - 1. Roof attachment is sufficient to withstand loads applied by snow guard system.
  - 2. Installation will not impede roof drainage.

### **3.2 PREPARATION**

- A. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.

### **3.3 INSTALLATION**

- A. Install system in accordance with manufacturer's current instructions and approved Shop Drawings.
- B. VersaGard Snow Retention Systems
  - 1. Place brackets at maximum 32 inches (812.8 mm) on center or as required by in-service loads.
  - 2. Place brackets in straight, aligned rows using a string line.
  - 3. Clean roof area to receive bracket. Remove protective seal on butyl tape.
  - 4. Place brackets at spot of attachment and fasten with screws best suited for type of attachment.
  - 5. Install pipes through holes in brackets. Insert a pipe collar inside last bracket of either end of the run as pipe is inserted into brackets.

6. Install pipe coupling at adjoining pipe end joints. Insert coupling halfway into pipe that will be joined to next pipe in the run.
7. Cut extended end of pipe at end of run. Do not cantilever pipes more than 6 inches (152.4 mm) beyond last bracket at ends.
8. Apply end cap to each pipe.

Include the following when applicable. Use one DualClip per panel for panels up to and including 24 inch (609.9 mm) seam spacing and two per panel over 24 inches (609.6 mm).

9. Install **[one DualClip] [two DualClips]** per panel between panel seams.
  - a. DualClips: Secure DualClip II to back side of pipe cross member using stainless steel #10 x ½ inch (12.7 mm) screw.

END OF SECTION