

PART 1 - GENERAL

1.1 SUMMARY A. Section Includes:

SECTION 07 72 53 SNOW GUARDS

1. Snow guards for metal roofs.
2. Non-penetrating 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 55 - Roof Accessory Attachment System.
- F. Section 13 34 19 – Metal Building Systems

1.3 REFERENCES

- A. Aluminum Association (AA) - Aluminum Standards and Data, 2003 Edition.
- B. ASTM International (ASTM):
 1. B85-03 - Standard Specification for Aluminum-Alloy Die Castings.
 2. B221-04a - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

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. Clamp and Bracket samples.
 - b. 12-inch long cross member samples including splice connector, end cap and other hardware.

B. Informational Submittals:

1. Include calculation of number and location of snow guards based on designed roof snow load, roof slope, roof type, components, spacing's and finish
2. Test results: Results of product tensile load testing, issued by a recognized independent testing laboratory, showing ultimate load-to-failure value of attachment.

C. Closeout Submittals:

1. Certification: Installer's certification that 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 20 years documented experience.
- B. Installer Qualifications: Installer to specialize in metal roof installation and installation of Snow Guard Products with a minimum of 5 years documented experience.
- C. 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.

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.

B.

Attachment system to provide attachment to standing seam metal roofs:

1. With only minor dimpling of panel seams.
2. Without penetrations through roof seams or panels.
3. Without use of sealers or adhesives.
4. Without voiding roof warranty.

Performance Requirements: Provide snow guards to withstand exposure to the weather and environmental elements, and resist design forces without failure due to defective manufacture.

1. Loading: Design snow guard system to resist minimum in-service vector load of [] pounds per linear foot of eave.
2. Factor of safety: Utilize a factor of safety $\geq [2]$ [] to determine allowable loads from ultimate tested clamp tensile load values.
3. Source Limitation: Provide snow guard system as designed and tested by the manufacturer as a complete system. Install components by the same manufacturer.

2.2 MANUFACTURER

A. Acceptable Manufacturer: S-5! by Metal Roof Innovations, Ltd., 8655 Table Butte Road, Colorado Springs, CO. 80908; Tel: 888-825-3432; Fax: 719-495-0045; Email: support@s-5.com; Web: www.s-5.com

B. Substitutions: Not permitted.

2.3 PIPE-TYPE SNOW RETENTION SYSTEMS FOR STANDING SEAM METAL ROOFS

A. Basis of Design: X-Gard 1.0 and 2.0, manufactured by S-5!

Metal Roof Innovations, Ltd.

B. Components: 1. Clamps:

a. Manufactured from 6061-T6 aluminum extrusions conforming to ASTM B221 or

aluminum castings conforming to ASTM B85 and to AA Aluminum Standards and Data.

1) Model: No. [S-5-U.] [S-5-S.] [S-5-T.] [S-5-Z.] [S-5-E.] [S-5-B.] [S-5-Q.] [S-5-H.] [S-5-K700.] [S-5-H90.] [S-5-N.] [S-5-N 1.5.] [S-5-KHD.] [S-5- V.] [S-5-K Grip.] [S-5-R465.]

b. Set screws: 300 Series stainless steel, 18-8 alloy, 3/8 inch diameter, with round nose point.

c. Attachment bolts: 300 Series stainless steel, 18-8 alloy, 10 mm diameter, hex flange bolt.

2. Pipe Brackets: a. Manufactured from 6061-T6 or 6005-T5 alloy and temper aluminum extrusions

conforming to ASTM B221 and AA Aluminum Standards and Data or cast aluminum.

. 1) Model: X-Gard Bracket 1.0 for single cross member

. 2) Model: X-Gard Bracket 2.0 for double cross member

3. Cross Members:

a. Manufactured from 6061-T6 or 6005-T5 alloy and temper aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.

. 1) Model: NEX 2.0 Pipe, or

. 2) Optional 1.9" Round Pipe

b. Provide NEX 2.0 Splice connectors ensuring alignment and

structural continuity at end joints.

4. Ice and Snow Clips: a. Aluminum, minimum 3 inches wide.

PART 3- EXECUTION

3.1 EXAMINATION

- . 1) Model: X-Clip II for standing seam heights 1” to 1.75”
- . 2) Model: X-Clip III for standing seam heights 1.75” to 3”

Prior to beginning installation, verify that:

1. Panel seaming is complete.
2. Panel attachment is sufficient to withstand loads applied by snow guard system.
3. Installation will not impeded roof drainage.

3.2 PREPARATION

3.2.1 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 instructions and approved Shop Drawings
- B. X-Gard Snow Retention System:

Place clamps at maximum 48 inches on center or as required by in-service loads.

Place clamps in straight, aligned rows.

Place both set screws on same side of clamp.

Tighten set screws to manufacturer's recommended torque. Randomly

test set screw torque using calibrated torque wrench.

Slide cross member thru [X-Gard 1.0] [X-Gard 2.0].

Attach [X-Gard 1.0] [X-Gard 2.0] and cross members to clamps; tighten bolts to manufacturer's recommended torque.

Install splice connectors at cross member end joints. Do not cantilever cross members more than 4 inches beyond last clamp at ends.

Install [one X-Clip III] [two X-Clip III] per panel between panel seams.

Secure [one X-Clip III] [two X-Clip III] to pipe using 12-14 x 7/8 inch stainless steel self drilling screw (provided)

END OF SECTION