

**Sno-Safe Guide Specification**

**Sno-Safe Snow Guards™** prevent damaging snow avalanches on roofs. They work together to function as cleats holding the accumulated snow on the roof surface. Sno-Safe Snow Guards distribute snow weight evenly when positioned throughout a roof in staggered rows. As the snow melts the snow guards help to break up the snow into small pieces which shed off the roof. Protect people, gutters, driveways, sidewalks, HVAC units, and decks with Sno-Safe Snow Guards.

STRONG

Gusseted and thick wall design for maximum strength

Square channel grooves for adhesive increases shear strength

LASTING

UV inhibitor prevents discoloration and degradation from damaging sunlight

Resists temperature extremes

Virtually unbreakable from snow and ice

COMMERCIAL & RESIDENTIAL APPLICATIONS

Sno-Safe Snow Guards are the perfect snow retention solution for both commercial and residential roofs. A low profile design provides minimal distraction. Can be installed on large commercial roofs, ledges, skylights, and canopies.

ENGINEERED FOR STRENGTH – MANUFACTURED WITH QUALITY

Sno-Safe Snow Guards are manufactured with a high quality polycarbonate that is also used for safety glass and bullet proof windows. This material has strength and maintains clarity.

The Sno-Safe Snow Guard is designed with a profile that provides maximum snow holding surface area ratio. It incorporates gusseted and thick wall design for exceptional strength. Key design features make them virtually unbreakable from snow and ice. A UV inhibitor in the polycarbonate prevents discoloration and degradation from damaging sunlight.

Sno-Safe has designed square profile grooves in the bottom fastening surface of the snow guard to provide mechanical shear strength when fastened using adhesive. In addition to the strength of the adhesive properties, these grooves allow the adhesive to lock the snow guard to the roof providing significant resistive force parallel to the roofing surface.

Review and edit this Section to meet the requirements of the Project and local building code.

For additional information, contact: Sno-Safe Snow Guards., Chicopee, MA 01021; (413) 592-0404; info@sno-safe.com; www.sno-safe.com.

Sno-Safe Snow Guards™ is a trademark of Sno-Safe Snow Guards, LLC.

SECTION 077523 – SNOW GUARDS

1. GENERAL
	* + 1. SECTION INCLUDES

Specifier Notes: The use of snow guards for the purpose of snow retention will be effective up to a slope of 12/12. If the roof surface is steeper than this, full snow retention may not be achieved. Consult Sno-Safe Snow Guards, LLC for more information.

* + - * 1. Pad-type, flat-mounted polycarbonate snow guards.
				2. Pad-type, flat-mounted metal snow guards.
			1. RELATED REQUIREMENTS

Specifier Notes: Edit the following optional list of related sections to correspond to Project. Limit the list to sections with specific information that the reader might expect to find in this Section but is specified elsewhere.

* + - * 1. Section 073113 – Metal Shingle Roofing.
				2. Section 074113 – Standing Seam Metal Roof Panels.
				3. Section 075000 – Membrane Roofing.
				4. Section 076100 – Sheet Metal Roofing.
				5. Section 086300 – Metal-Framed Skylights.
				6. Section 088000 – Glazing.
				7. Section 107316 – Canopies.
			1. ACTION SUBMITTALS
				1. Product Data: For each type of product, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

Include independent testing agency test reports for snow guard attachment shear strength.

* + - * 1. Shop Drawings: Include roof plans showing layouts and attachment details of snow guards.

Include calculation of number and location of snow guards based upon Performance Requirements in Part 2.

* + - * 1. Samples: Submit manufacturer’s sample of snow guards.
			1. INFORMATIONAL SUBMITTALS
				1. Warranty Documentation: Submit sample copy of manufacturer’s standard warranty.
			2. QUALITY ASSURANCE
				1. Source Limitations: Obtain snow guards from a single source from single manufacturer.
				2. Manufacturer Qualifications: Company specializing in manufacturing of specified products with minimum five years' experience.
			3. FIELD CONDITIONS
				1. Weather Limitations: Proceed with adhesive-only installation when existing and forecasted weather conditions permit adhesive-mounted snow guards to be installed and adhesive cured according to adhesive manufacturer's written instructions.

Do not install snow guards using adhesive only when rain, snow, or excessive moisture is expected during installation or within 24 hours after installation.

Do not install snow guards under ambient conditions outside manufacturer’s limits.

When conditions do not allow use of adhesive-only installation, refer to manufacturer's written instructions for mechanical fastening.

1. PRODUCTS
	* + 1. PERFORMANCE REQUIREMENTS
				1. Shear Properties, “Original” Polycarbonate Snow Guards: Attached to metal panel mounted on plywood sheathing, per Intertek Test Report available from manufacturer:

Adhesive-mounted Snow Guard: Displacement, 0.113 inches at peak force of 1,220 lbf, with shear modulus of 22,300 psi, average.

Adhesive plus mechanical fastener-mounted Snow Guard: Displacement, 0.235 inches at peak force of 2,280 lbf, with shear modulus of 27,600 psi, average of 5 tests.

* + - * 1. Shear Properties, “Wide” Polycarbonate Snow Guards: Attached to metal panel mounted on plywood sheathing, per Intertek Test Report available from manufacturer:

Adhesive-mounted Snow Guard: Displacement, 0.389 inches at peak force of 2,480 lbf, with shear modulus of 30,400 psi, average.

Adhesive plus mechanical fastener-mounted Snow Guard: Displacement, 0.352 inches at peak force of 2,410 lbf, with shear modulus of 30,600 psi, average.

* + - 1. MANUFACTURERS
				1. Manufacturer: **Sno-Safe Snow Guards, LLC, Chicopee, Massachusetts 01021**. Phone (413) 592-0404. www.sno-safe.com; info@sno-safe.com.

Specifier Notes: Specify if substitutions will be permitted.

Substitutions: [Not permitted] [Submit for approval by Architect in accordance with Instructions to Bidders and Division 01 General Requirements].

* + - * 1. Provide snow guard installation, including attachment to roofing substrate, as applicable for attachment method, based on the following:

Roof snow load.

Snow drifting

Roof slope.

Roof type.

Roof dimensions.

Roofing substrate type and thickness.

Snow guard type.

Snow guard attachment method and strength.

Snow guard spacing.

Coefficient of Friction Between Snow and Roof Surface.

Factor of Safety: [**2**] [**3**].

* + - * 1. Performance Requirements: Provide snow guards that withstand exposure to weather and resist thermally induced movement without failure, rattling, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

Specifier: Select pad-type snow guard for Project from among three alternatives given below; confer with Sno-Safe Snow Guards for their recommended types given your particular requirements. Delete those snow guard types not required.

* + - 1. PAD-TYPE SNOW GUARDS
				1. Snow Guards, Polycarbonate: [Adhered] [Adhered plus mechanically fastened] snow guards with grooved base formed for maximum adhesion, configured for multiple row installation on sloped roof as shown in approved shop drawings.

Product: **Sno-Safe Snow Guards, LLC., Sno-Safe Original Polycarbonate Snow Guards**.

Material: Polycarbonate with UV inhibitor.

Dimensions: 1.5 by 5.00 inch base by 2.32 inches tall.

Fastening Holes: Four, 0.265-inch diameter.

Color: [Bone White] [Charcoal Gray] [Clear] [Colonial Red] [Dove Gray] [Forest Green] [Mansard Brown] [Matte Black] [McDonalds Red] [Medium Bronze] [Midnight Bronze] [Musket Gray] [Slate Blue].

* + - * 1. Snow Guards, Wide Base, Polycarbonate: [Adhered] [Adhered plus mechanically fastened] snow guards with grooved base formed for maximum adhesion, configured for multiple row installation on sloped roof as shown in approved shop drawings.

Product: **Sno-Safe Snow Guards, LLC., Sno-Safe Wide Polycarbonate Snow Guards**.

Material: Polycarbonate with UV inhibitor.

Dimensions: 5.25 by 3.13 inch base by 3.13 inches tall.

Fastening Holes: Two, 0.265-inch diameter.

Color: [Charcoal Gray] [Clear] [Forest Green] [Mansard Brown] [Black].

* + - 1. ACCESSORIES
				1. Adhesive: Snow guard manufacturer's recommended adhesive applicable to roof substrate and installation conditions.
				2. Mechanical Fasteners: #12 self-drilling neoprene-washer roofing screws, length as required for minimum 5/8-inch penetration into screw-holding substrate.
1. EXECUTION
	* + 1. EXAMINATION
				1. Examine sloped roofing areas to receive snow guards. Verify surfaces to receive snow guards are secured, clean, dry, and rigid.
				2. Notify Architect of conditions that would adversely affect installation or subsequent use.
				3. Proceed with installation of snow guards once unacceptable conditions are corrected.
			2. INSTALLATION
				1. Install snow guards in accordance with snow guard manufacturer’s and adhesive manufacturer's written instructions at locations indicated on approved shop drawings.
				2. Securely attach snow guards using [adhesive] [screws and adhesive] in accordance with manufacturer’s written instructions.

Clean each snow guard location just prior to installation.

Specifier Notes: Edit the following sentence as required for spacing of snow guards.

* + - * 1. Install snow guards in straight staggered rows at spacing as indicated on approved shop drawings.
			1. ADJUSTING
				1. Remove and replace damaged snow guards with new material.
			2. CLEANING
				1. Remove excess adhesive from surfaces promptly after installation.
				2. Do not use harsh cleaning materials or methods that could damage surfaces or finish.
			3. PROTECTION
				1. Protect installed snow guards to ensure that, except for normal weathering, snow guards will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

**Sno-Safe Snow Guard** layouts and quantities are estimated assuming a high of 40psf snow load based on field experience. This is the high end of snow load for the vast majority of the United States minus some specific areas. Estimating layouts and quantities for snow loads significantly above this becomes difficult if not impossible due to the fact that so many factors affect sliding snow. Any attempts at calculations in this regard should be performed by an architect familiar with the specific geographic area and specific snow conditions.

High snow load considerations:

As snow load and/or depth increases, a point is eventually reached where the holding power of the snow guard is no longer the determining factor in whether the snow can be held in place. As pressure of the snow against the snow guard increases, the shear strength of the snow itself against the face of the snow guard is what will eventually give way. Also the shear strength of the different layers of the snow, their density, and the stratification, can also become the determining factor, allowing snow to slide without the snow beneath moving.

One way to mitigate the first factor mentioned above, in unusually high snow load conditions, is to use a higher number of snow guards than typically estimated. However, with so many factors playing a role in the movement of the snow atop the roof, attempting any type of calculations or assurances, is not possible.

Another consideration is to look at using our new "Sno-Safe Wide Snow Guard". Especially if the roof is metal panel and has a 9" valley width and 2 minor ribs in the valley. This snow guard is designed to fit this type of metal roof very well. These snow guards have a larger face area which can provide greater shear resistance. Our calculator at https://sno-safe.com/spacing.html estimates both the number of Original or Wide snow guards suggested for most roofs.

Lastly, with exceptionally high snow loads, ensuring that the structure is built to withstand the weight of the snow that will be held on the roof, is especially important.