



Rocky Mountain Snow Guards Inc

ROCKY MOUNTAIN SNOW GUARDS
4231 S NATCHES CT., UNIT C
ENGLEWOOD, CO 80110
PHONE: (720) 379-7756
FAX: (720) 387-8361
www.rockymountainsnowguards.com

S-5® ColorGard SNOW BAR SYSTEM

AVAILABLE MATERIALS:

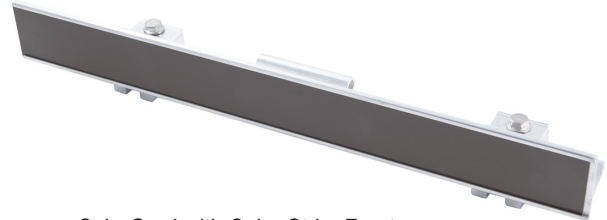
- ALUMINUM
- BRASS (S-5® B-CLAMP ONLY)



Unpunched ColorGard Bar with S Clamps, Veraclips and SnoClip II, Rear

INFORMATION:

- 7'8" Unpunched bar
- Clamps to fit all seam profiles
- Specific load ratings for all panels
- Excellent Choice for:
 - Standing seam metal panel roofs
 - Through-fastened metal panels (Versabacket)
 - Corrugated metal panels (Corrubacket)



ColorGard with Color Strip, Front

EXAMPLES:



S-5![®]

The Right Way![®]

S-5-T Clamp

The S-5-T clamp is specially developed to fit profiles having a "T" shaped seam configuration. It will also work on architectural "single-fold," or "horizontal seam" profiles having a horizontal projection of 5/8" or less. Its two-piece design allows it to be easily installed anywhere along the length of the panel seam.

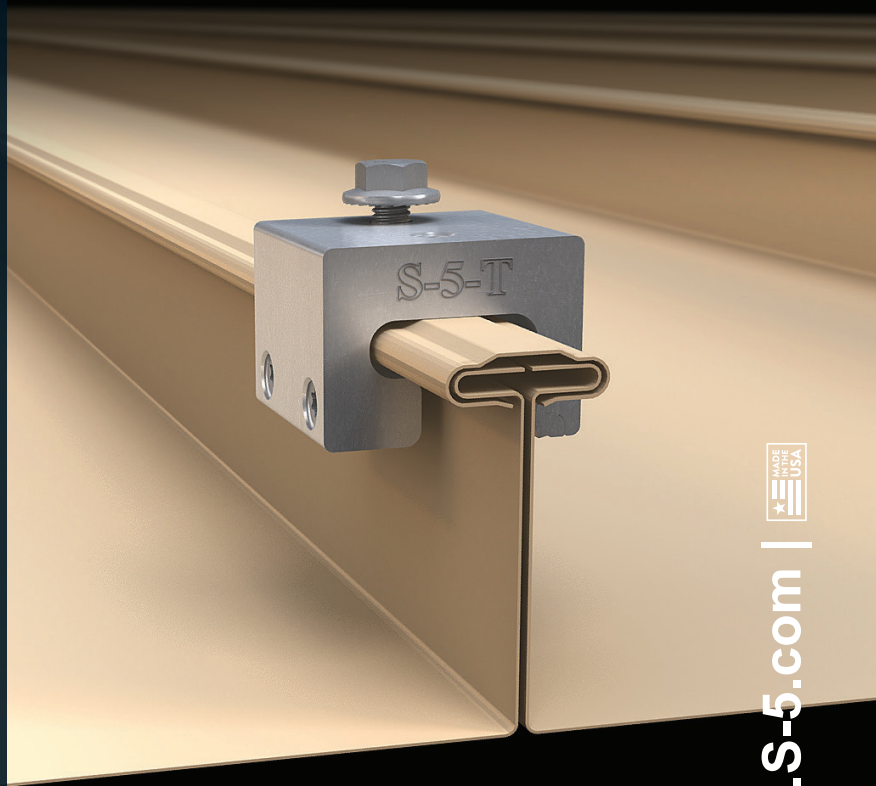
The S-5-T (illustrated in Steps 1–4) is perfect for use with S-5![®] ColorGard[®] snow retention system and other heavy-duty applications.

Installation is as simple as placing the clamp on the seam, positioning the insert piece, and tightening the patented round-point setscrews to the specified tension. Then, affix ancillary items using the bolt provided. Go to www.S-5.com/tools for information and tools available for properly attaching and tensioning S-5! clamps.

S-5-T Mini Clamp

The S-5-T Mini is a bit shorter than the S-5-T and has one setscrew rather than two. The mini (illustrated in the rendering to the right) is the choice for attaching all kinds of rooftop accessories: signs, walkways, satellite dishes, antennas, rooftop lighting, lightning protection systems, solar arrays, exhaust stack bracing, conduit, condensate lines, mechanical equipment—just about anything!*

*S-5! mini clamps are not compatible with, and should not be used with, S-5! SnoRail™/SnoFence™ or ColorGard[®] snow retention systems.



The S-5-T clamp is specifically developed to fit profiles having a "T" shaped seam configuration.

The right way to attach almost anything to metal roofs!

S-5-T and S-5-T Mini



888-825-3432 | www.S-5.com |

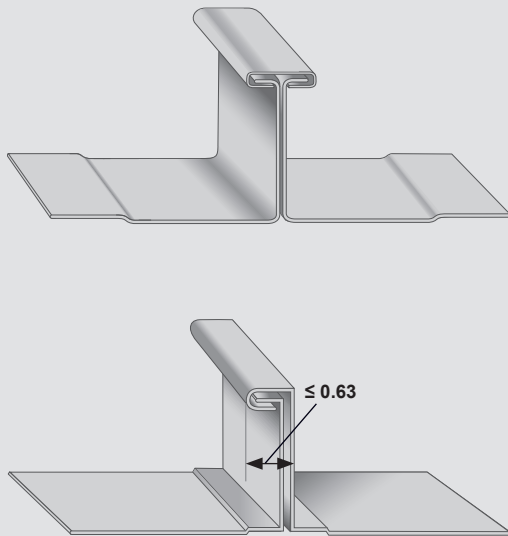


The strength of the S-5-T clamp is in its simple design. The patented setscrews will slightly dimple the metal seam material but will not puncture it—leaving roof warranties intact.

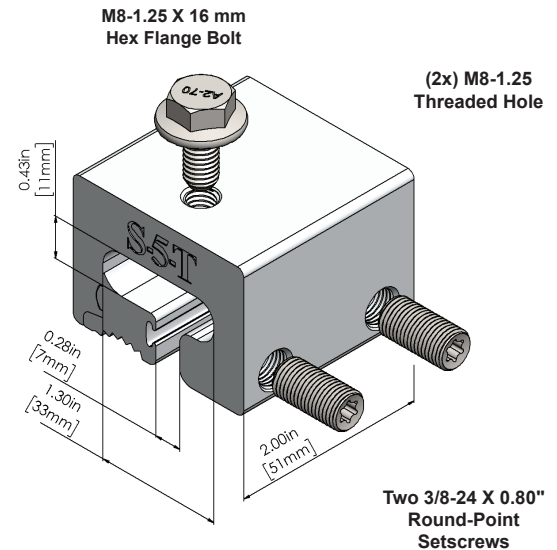
The **S-5-T** and **S-5-T Mini clamps** are each furnished with the hardware shown to the right. Each box also includes a bit tip for tightening setscrews using an electric screw gun. A structural aluminum attachment clamp, the S-5-T is compatible with most common metal roofing materials excluding copper. All included hardware is stainless steel. Please visit www.S-5.com for more information including CAD details, metallurgical compatibilities and specifications.

The S-5-T clamp has been tested for load-to-failure results on a variety of "T" shaped standing seam roof profiles from leading manufacturers of panels. The independent lab test reports found on our website at www.S-5.com prove that S-5!® holding strength is unmatched in the industry.

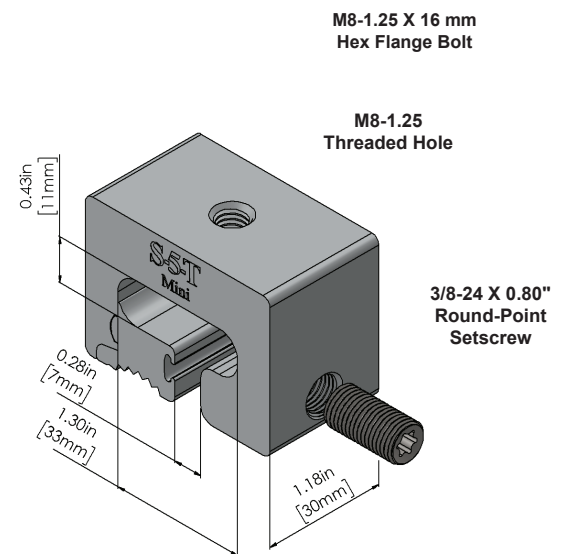
Example Profiles



S-5-T Clamp



S-5-T Mini Clamp



Please note: All measurements are rounded to the second decimal place.

S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. Visit the website at www.S-5.com for complete information on patents and trademarks. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses. Clamp setscrew tension should be verified using a calibrated torque wrench between 160 and 180 inch pounds when used on 22ga steel, and between 130 and 150 inch pounds for all other metals and thinner gauges of steel. Consult the S-5! website at www.S-5.com for published data regarding holding strength.

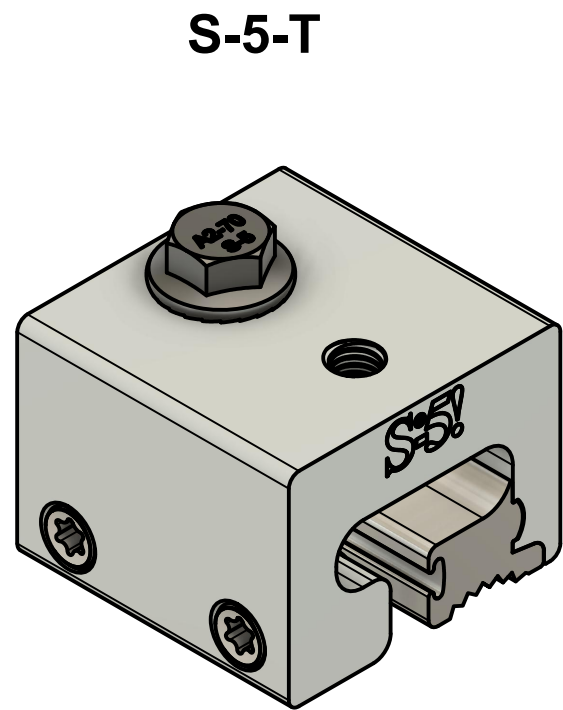
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Distributed by



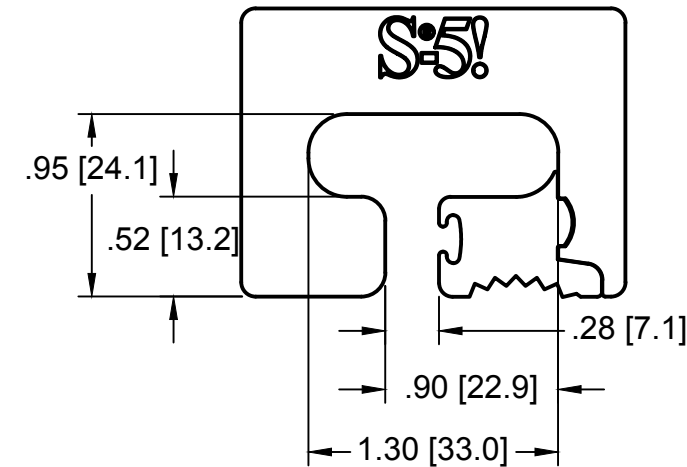
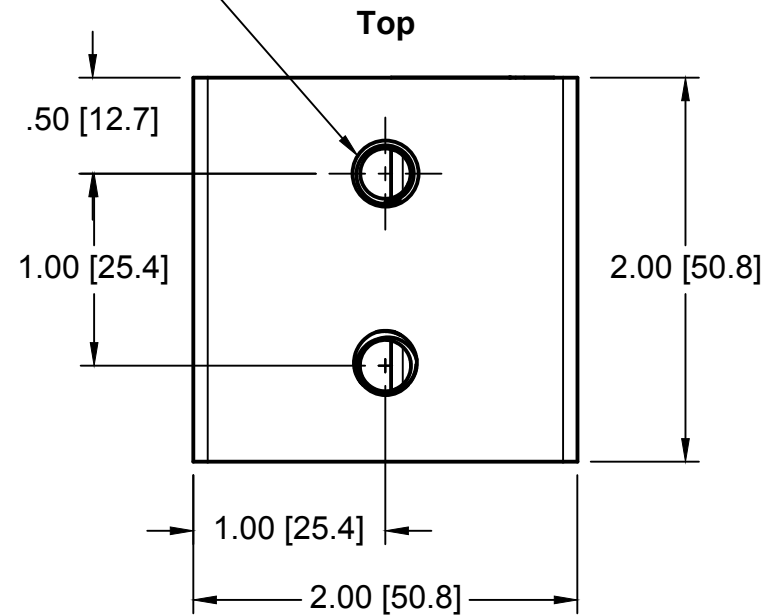
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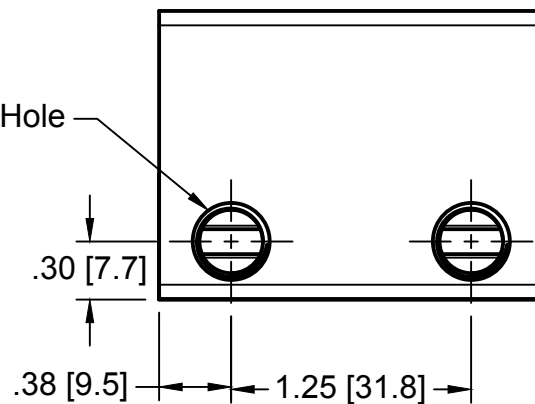
S-5-T

(2x) M8-1.25 Threaded Hole

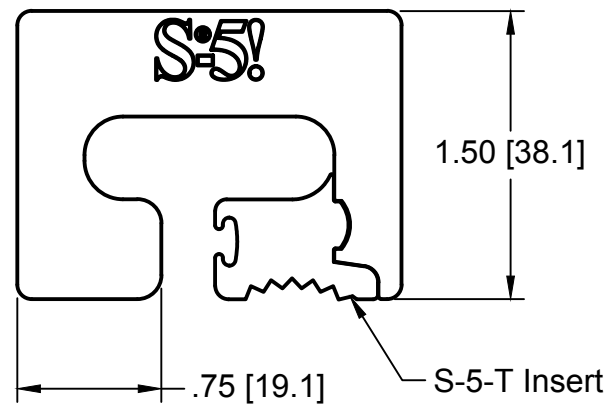


Left

(2x) 3/8-24 Threaded Hole

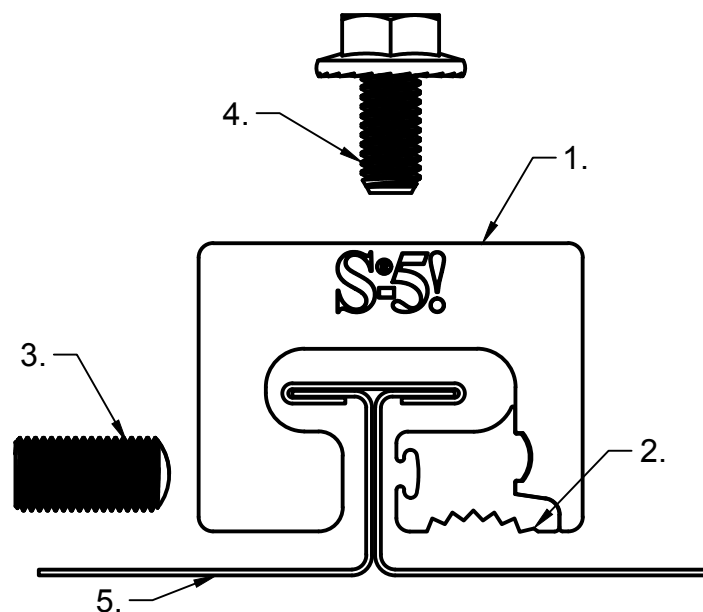


Front



General Notes:

1. S-5-T
2. S-5-T Insert
3. 0.9" 3/8-24 T30 Drive SetScrew
4. M8-1.25 16 mm Bolt
5. Example roof



MATERIAL:
6000 Series AL
EST ASSEMBLY WT:
0.016 lbs
HARDWARE:
2x 0.9" 3/8-24 T30 Drive SetScrew, M8-1.25 16 mm Bolt

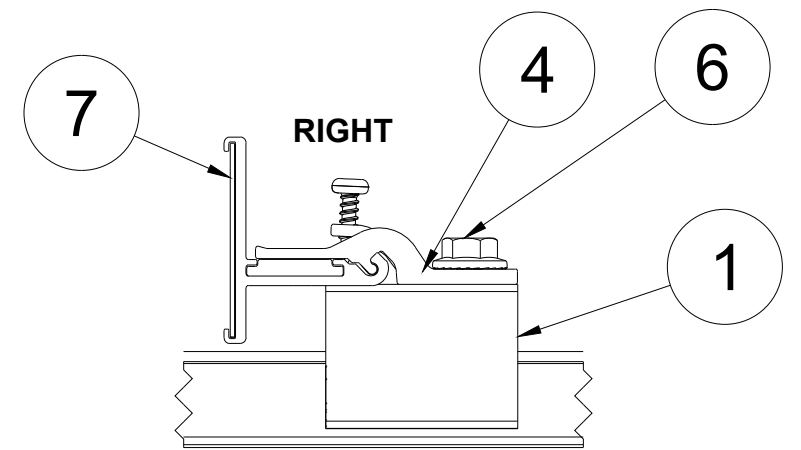
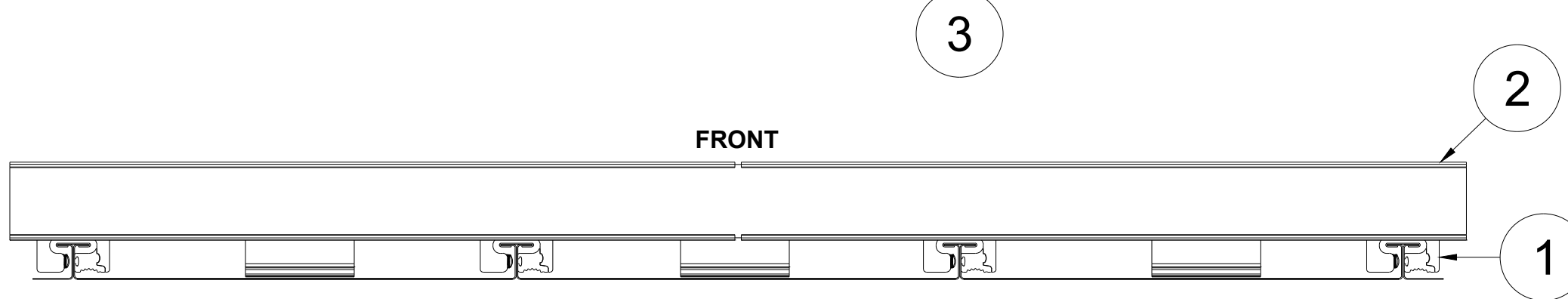
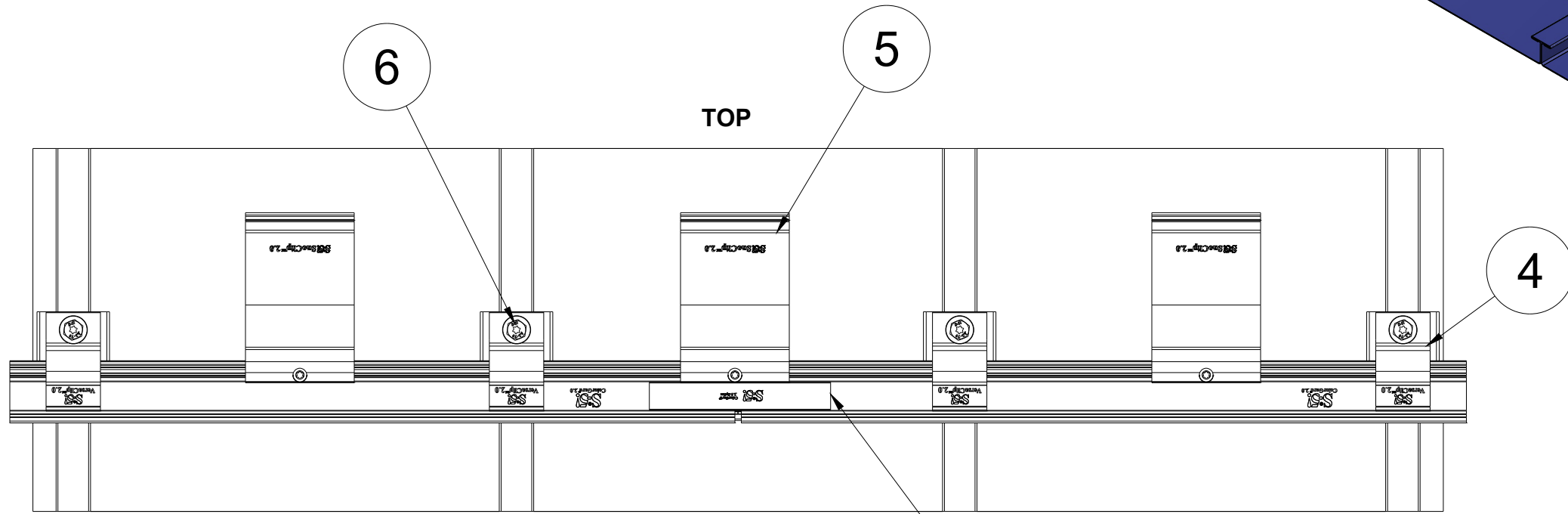
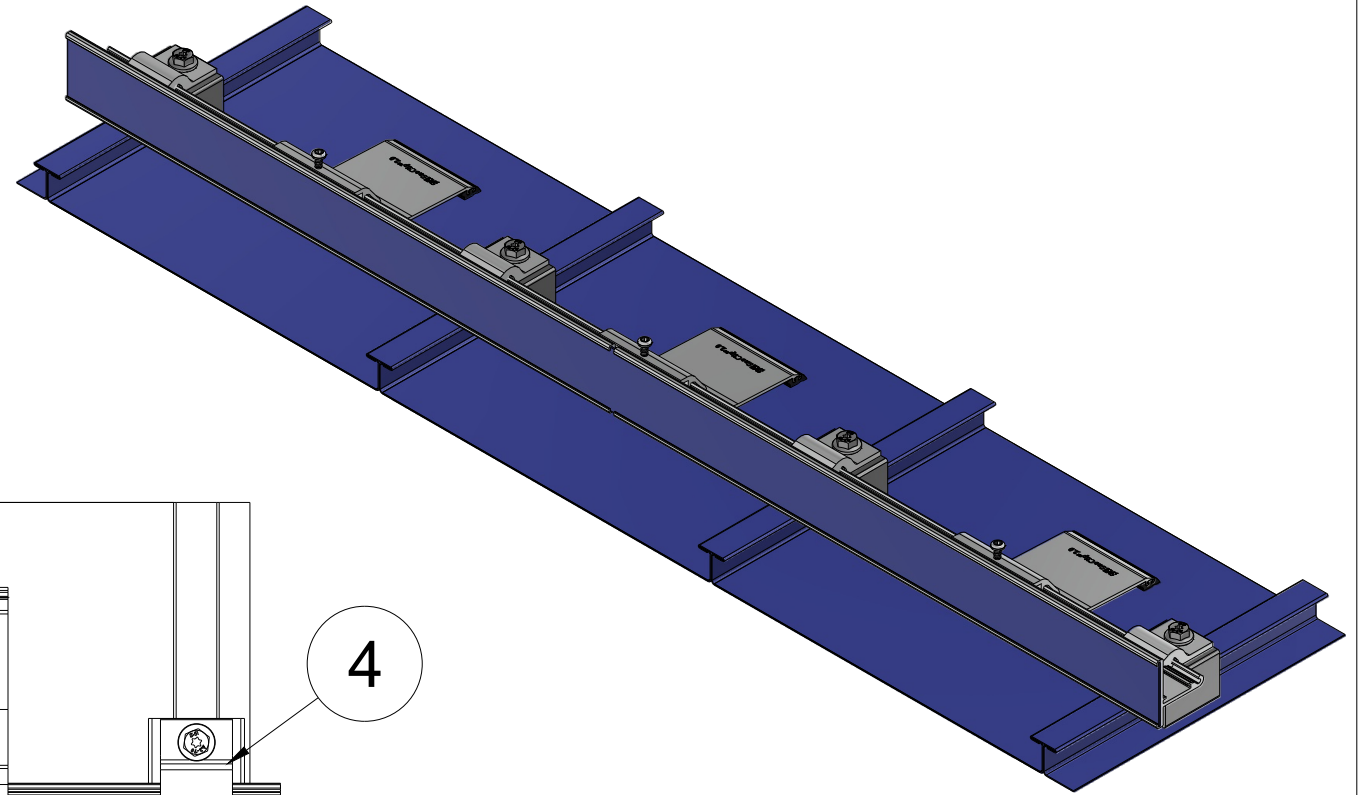


METAL ROOF INNOVATIONS, LTD.
8750 WALKER RD
COLORADO SPRINGS, CO 80908
719-495-0518
719-495-0045 (FAX)

TITLE S-5-T [CCD]
DRAWING NO. T09-A-8-C DRAWN BY SNLR DATE 3/14/2022
SCALE 1:1 FILE NAME T09-A-8-C (S-5-T) [CCD]

S-5!® PRODUCTS ARE PROTECTED BY MULTIPLE U.S. AND FOREIGN PATENTS.
VISIT OUR WEBSITE AT WWW.S-5.COM FOR COMPLETE INFORMATION ON
PATENTS AND TRADEMARKS

ColorGard 2.0 W/ S-5-T



Components:

1. S-5-T
2. ColorGard
3. ColorGard Splice
4. Versaclip
5. Snoclip II 2.0
6. M8x17mm Bolt
7. ColorStrip

MATERIAL: 6000 SERIES AL EST ASSEMBLY WT:	S-5! [®]	METAL ROOF INNOVATIONS, LTD. 12730 BLACK FOREST ROAD COLORADO SPRINGS, CO 80908 719-495-0518 719-495-0045 (FAX)	
HARDWARE: 304 SS		TITLE ColorGard 2.0 W/ S-5-T	
	DRAWING NO.	DRAWN BY JM	DATE
	SCALE 1:16	FILE NAME ColorGard 2.0 W/ S-5-T [CCD]	
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S-5!®

The Right Way!

The right way to attach almost anything to metal roofs!

Installation Instructions

S-5!® Warning! Please use these products responsibly! Visit our website or contact your S-5! distributor for available load test results. The user and/or installer of these parts is responsible for all necessary engineering and design to ensure S-5! clamps have been properly spaced and configured.

Notice to S-5! product users: Due to the many variables involved with specific panel products, climates, snow melt phenomena, and job particulars, the manufacturer cannot and does not express any opinions as to the suitability of any S-5! assembly for any specific application and assumes no liability with respect thereto. S-5! products are tested for ultimate holding strength on various profile types and materials. This information is available from the S-5! website: www.S-5.com. This document is an installation guide only and the photographs and drawings herein are for the purpose of illustrating installation, tools and techniques, not system designs. Information contained within is intended to apply to the document as a whole.

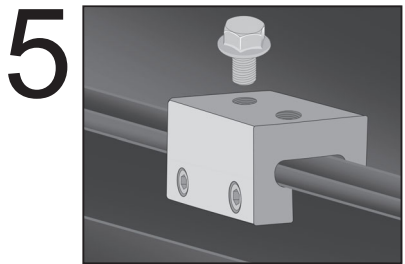
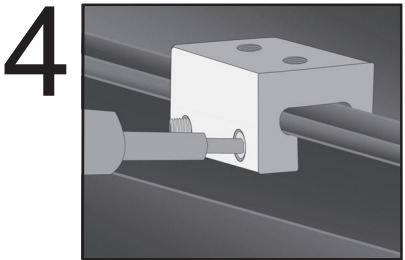
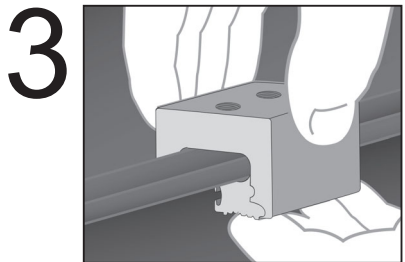
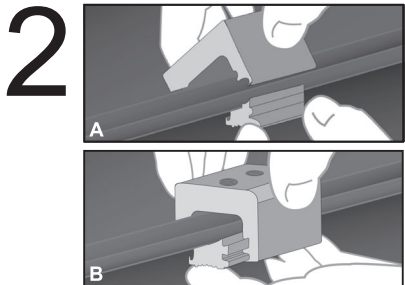
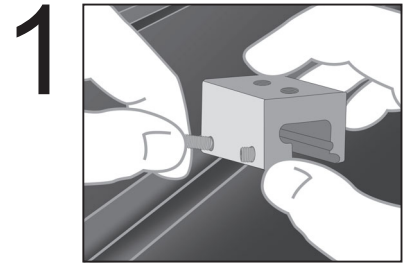
The S-5-T, S-5-Z, S-5-Q, and S-5-H clamps fit "T" and "bulb" shaped seams. Please see individual clamp product sheets or the S-5! website for profile details and clamp dimensions.

Tools Needed

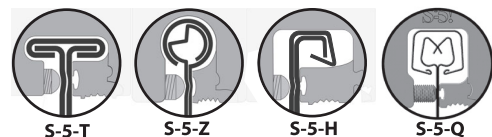
- Screw Gun*
- T30 Torx Bit Tip (Provided)
- Dial-Calibrated Torque Wrench
(For accurate tension values, do NOT use a clicking torque wrench.)

To Install the S-5-T, S-5-Z, S-5-Q, and S-5-H

1. Partially thread the provided round-point setscrews into the clamp by hand.
2. Position clamp at desired location along seam with the bolt hole in the correct (upslope or downslope) orientation.
3. **For S-5-T, S-5-Z, and S-5-Q (illustrated in image 2A):** Install by holding the clamp insert piece under the edge of the seam, then roll the clamp into position over the seam and the insert.
For S-5-H (illustrated in image 2B): Install by positioning clamp at desired location on seam. Then, **slide** insert into place.
4. Tighten the setscrews at the base of the clamp using a screw gun* and the included screw gun bit tip. Standard clamps requiring two setscrews should be tensioned and re-tensioned as the seam material compresses, i.e. tighten the first setscrew, then the second; then repeat until each setscrew achieves the recommended torque. The setscrews will dimple the seam material but will not penetrate it. When relying upon tested load values, setscrew tension should be verified periodically throughout installation using a calibrated torque wrench at 160 to 180 inch pounds on 22ga steel and 130 to 150 inch pounds on all other metals and thinner gauges of steel. Once installed correctly, these clamps require no maintenance or re-inspection for the life of the roof (See reverse for setscrew torque table and units).
5. *** For time-saving tool recommendations, call S-5!**
For critical attachment applications utilizing an M8-1.25 X 16 mm hex flange bolt, tighten the included M8 bolt to 160 inch pounds (13 foot pounds).



Above illustrations show S-5-T clamp, along with S-5-H clamp on step 2.



These instructions are for use by those experienced in the trade. Always follow appropriate safety precautions and use appropriate tools.

S-5-T Mini, S-5-Z Mini, S-5-Q Mini, and S-5-H Mini Installation Instructions

To Install the S-5-T Mini, S-5-Z Mini, S-5-Q Mini, and S-5-H Mini

1. Partially thread the provided round-point setscrew into the clamp by hand.
2. Position clamp at desired location along seam.
3. **For S-5-T Mini, S-5-Z Mini, and S-5-Q Mini (illustrated in 2A):** Install by holding the clamp insert piece under the edge of the seam, then roll the clamp into position over the seam and the insert.
For S-5-H Mini (illustrated in 2B): Install by positioning clamp at desired location on seam. Then **slide** insert into place.
4. Tighten the setscrew at the base of the clamp using a screw gun* and the included screw gun bit tip. The setscrew will dimple the seam but will not penetrate it. When relying upon tested load values, setscrew tension should be verified throughout the installation using a calibrated torque wrench as indicated below to ensure the tool is consistently achieving proper torque range.

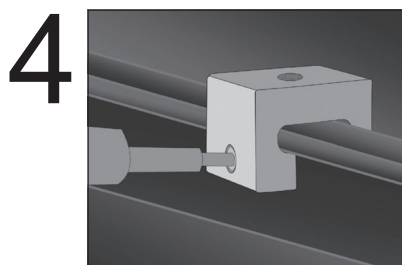
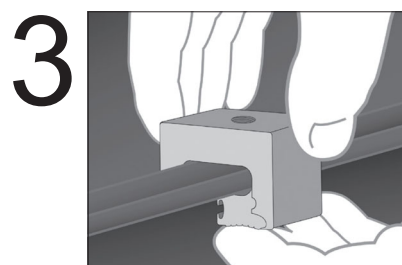
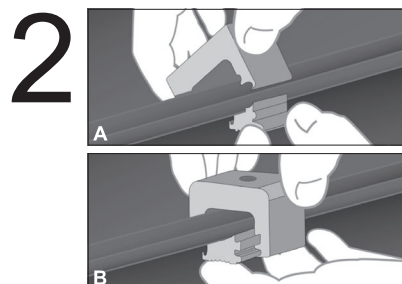
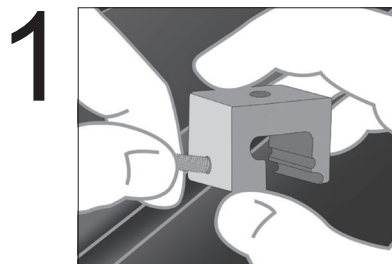
***For time-saving tool recommendations, call S-5!**

Specified Torque	Inch Pounds	Foot Pounds	Nm
22ga steel	160–180	13–15	18–20
24ga steel and all other metals	130–150	11–12.5	15–17

Once installed correctly, these clamps require no maintenance or re-inspection for the life of the roof.

5. For critical attachment applications utilizing an M8-1.25 X 16 mm hex flange bolt, tighten the M8 bolt (sold separately) to 160 inch pounds (13 foot pounds).

NOTE: Any S-5! warranty and/or calculation may be void if hardware is used that was not furnished by S-5! directly or through one of their licensed distributors



Above illustrations show S-5-T Mini clamp, along with S-5-H Mini clamp on step 2.

S-5!® Warning! Please use this product responsibly!

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S-5! aggressively protects its patents, trademarks, and copyrights.

ColorGard® 2.0 *Installation Instructions*

Providing *The Right Way*™ to attach virtually anything to metal roofs worldwide.

S-5!®
The Right Way

ATTENTION! This document is a guide only. This product may not be suitable for every application. The user is responsible for all necessary application engineering and design. We have online tools to help with this. Please scan the QR code to the right for additional information, warnings and disclaimers regarding product use.

You can also view load test results at www.S-5.com where applicable, or contact your S-5!® distributor for more information.



⚠ ATTENTION INSTALLERS ⚠

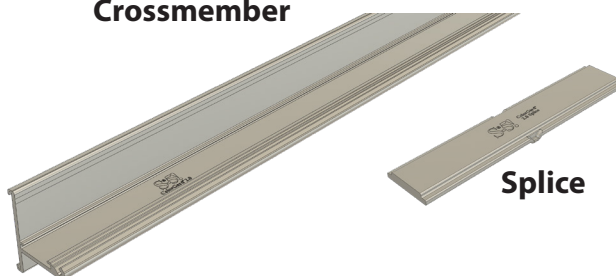
**PLEASE READ THESE INSTRUCTIONS ALL THE WAY THROUGH BEFORE BEGINNING WORK.
IT WILL SAVE TIME, MONEY AND PREVENT MISTAKES!**

Components

Crossmember and Splice

Unpunched and punched crossmembers are available. Use the included splice to join two pieces of crossmember together, ensuring structural continuity. ColorGard 2.0 now accommodates a wider allowable span, up to 42-inch seam spacings.

Crossmember



Splice

SnoClip™ 2.0

SnoClip can be added to slow the migration of snow and ice beneath the crossmembers. Simply hinge it onto the ColorGard crossmember during or following installation and secure the fastener to engage the SnoClip foot onto the roof.

SnoClip 2.0 II

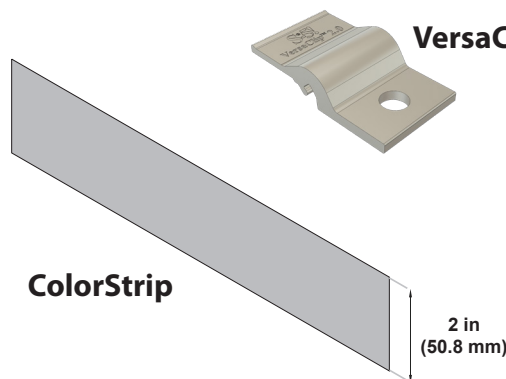
SnoClip 2.0 III



VersaClip™ 2.0

VersaClip is placed "on the fly" as the ColorGard crossmember is installed. (No preassembly)

VersaClip 2.0



ColorStrip

2 in
(50.8 mm)

ColorStrip™

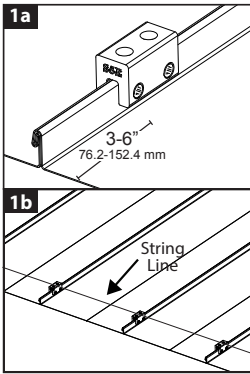
Not included: The **ColorStrip** can be obtained in **2-inch (50.8 mm) wide strips** by the roofing material manufacturer to ensure a perfect color match and durability.

Note: It is recommended to have the ColorStrip **sheared**, not slit, during manufacturing to maintain clean edges and optimal performance. Use **tin snips** to trim the ColorStrip to the required length on-site as needed.

Tools Required:

- Screw Gun
- 13mm Socket for Impact or Ratchet [Box-End Hand Wrench Optional]
- Reciprocating Saw or Circular Saw with Non-Ferrous Blade [minimal use]
- String Line
- Calibrated Dial Indicating Torque Wrench
- Vice Grip Pliers

How to Install ColorGard:



1 INSTALLING S-5! CLAMPS/BRACKETS

Step 1a: Preparing the Clamps/Brackets

- I. Review the **S-5! instructions** for your specific S-5! clamps or brackets. Read these instructions to the end before beginning work—it will save time and avoid mistakes.
- II. Attach a clamp/bracket within **3-6" (76.2-152.4 mm) of the eave** at both ends of the planned installation area.

Step 1b: Aligning Clamps/Brackets with a String Line

- I. Stretch a **tight string line** between the two end clamps/brackets.
 - Make sure the line is taut to avoid sagging or being affected by wind.
- II. Then install all clamps/brackets to line at their predetermined spacing.

Note for Longer Assemblies: For installations that span longer distances, additional intermittent clamps or brackets should be used at intervals to stabilize and anchor the string line securely in place.

2 INSTALLING THE COLORGARD CROSSMEMBER

Step 2a: Place the Crossmember

- I. Position the crossmember **downslope** of the installed S-5! clamps/brackets.

Step 2b: Attaching the Crossmember

For Unpunched Crossmembers:

- Place the **VersaClip** on the crossmember at each clamp/bracket location.
- Secure the crossmember using the provided **stainless steel M8 bolts** through the **upslope** clamp hole.
- Leave the bolts **loosely tightened** to allow for adjustments as the assembly progresses.

For Punched Crossmembers:

- Secure it using an **M8 bolt** through the **downslope** clamp hole (no VersaClip required).
- Leave the bolts **loosely tightened** to allow for adjustments as the assembly progresses.

Step 2c: Tightening the Bolts

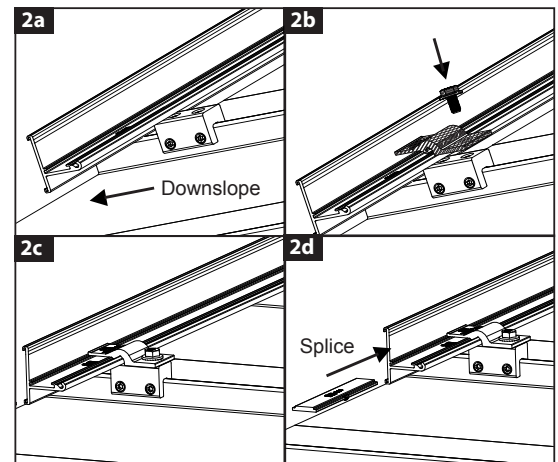
Note: if installing ColorStrip, please read Step 3 before tightening the bolts.

- I. Once the entire assembly is aligned and adjustments are complete, tighten all bolts progressively to achieve or exceed the specified torque: **160 inch-pounds (18 Nm)** for unpunched/punched crossmembers

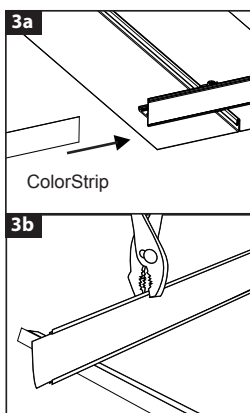
Step 2d: Connecting Crossmembers with Splices

- I. Insert a **splice piece** at each joint between crossmembers to maintain structural integrity.
 - If trimming the crossmember at the end of assembly, ensure the crossmember does not cantilever more than **8" beyond the last clamp/bracket**.
 - Secure trimmed sections with **at least two** clamps/brackets.

Note: For unpunched crossmembers at splices, the VersaClip can be placed directly at the clamp/bracket location if needed.



3 INSTALLING THE COLORSTRIP



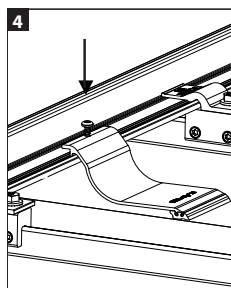
Step 3a: Insert the ColorStrip

- I. As you assemble the system, slide the **ColorStrip** into the crossmembers while the bolts remain loose to allow for smooth insertion of the strip
- II. Stagger the joints of the ColorStrip from the crossmember joints to conceal connections.
- III. Overlap adjacent ColorStrips by **.5 inch (13 mm)**

Step 3b: Secure the ColorStrip

- I. Use **vice grip pliers** to pinch the retainer lip of the crossmember at various points along its length. This prevents the ColorStrip from shifting laterally during or after installation.

4 INSTALLING THE SNOCLIP



I. Position the SnoClip

- For one SnoClip per panel, center it on the crossmember between two clamps/brackets.
- For two or more SnoClips per panel, space them evenly between the clamps/brackets to ensure uniform support.

II. Attach the SnoClip

- Hinge the SnoClip directly onto the crossmember.
- Ensure the rubber foot engages the surface of the panel for proper functionality.

III. Secure the SnoClip

Drive the included fastener through the prepunched hole in the SnoClip into the crossmember channel using the T30 from clamp installation. Tighten the screw to approximately 50 inch-pounds (5-6 Nm) to secure the SnoClip firmly. (if the screw head shears during installation do not be alarmed as it will not inhibit proper function)

SnoClip 2.0 II
Designed for Seam Heights of 1" - 2"

SnoClip 2.0 III
Designed for Seam Heights of 2" - 3¼"

Note: Any S-5! warranty and/or calculation may be void if hardware is used that was not furnished by S-5! directly or through one of their licensed distributors or any assembly that has not been tested by S-5! These instructions are for use by those experienced in the trade. Always follow appropriate safety precautions and use appropriate tools.

S-5!® Warning! Please use product responsibly!

S-5!® Warning! Please use this product responsibly! Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, fastener torque, patents and trademarks, visit the S-5! website at www.s-5.com. Copyright 2025, Metal Roof Innovations, Ltd. S-5! products are patent protected. S-5! aggressively protects its patents, trademarks and copyrights. 013125



Rocky Mountain
Snow Guards Inc



Stocked Color Strip Inserts for Colorgard Snow Fence Systems

Black

Charcoal Gray

Dark Bronze

Medium Bronze

Evergreen

ACTUAL COLORS MAY VARY

**We strongly recommend obtaining a
sample prior to purchasing.**

(877) 414-7606

www.RockyMountainSnowGuards.com



Rocky Mountain Snow Guards Inc

ROCKY MOUNTAIN SNOW GUARDS
4231 S. NATCHES COURT, UNIT C
ENGLEWOOD, CO 80110
PHONE: (877) 414-7606
FAX: (720) 387-8361
www.rockymountainsnowguards.com

Rocky Mountain Snow Guards Snow Retention System Maintenance Guide

Systems designed by Rocky Mountain Snow Guards, installed properly should last the life of the roof. Rocky Mountain does not recommend adhesive tape or sealant attachment for any snow fence or snow guard system. Rocky Mountain snow retention systems installed on commercial buildings, above high traffic areas or in areas with high snow loads should be inspected by a qualified roofing or snow retention professional on an annual basis to ensure the system will continue to perform as designed.

Bolt Down Snow Fence Systems:

1. Inspect brackets, snow fence components and fasteners for evidence of damage.
2. Replace damaged parts prior to the next snow season.

Clamp to Seam Snow Fence and Snow Bar Systems:

1. Inspect brackets, snow fence and snow bar components for evidence of damage.
2. Replace damaged parts prior to the next snow season.
3. Check torque on set screws with an appropriate torque wrench.
4. Torque set screws to recommended torque. This is especially important after the 1st snow season.

Snow Guards:

1. Inspect snow guards for evidence of damage.
2. Inspect exposed fasteners.
3. Replace damaged parts prior to the next snow season.

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. **[Non-penetrating] [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):

1. Division: 05 00 00 – METALS; Section: 05 05 23 – METAL FASTENERS Evaluation Report ESR-3869.
- D. IAPMO Uniform Evaluation Services
1. IAPMO UES EC 029-2018; Division: 05 00 00 – METALS; 05 05 23 METAL FASTENINGS; UES Evaluation Report Number: 805

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][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 designed 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 (current) 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.
2. System performance warranty.

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 standing seam metal roofs:
 1. With dimpling deformation of panel seams only at setscrew locations.
 2. Without penetrations through roof seams or panels.
 3. Without use of sealants or adhesives.
 4. Without violation of roof warranty.
- A. Attachment system to provide attachment to **[trapezoidal] [corrugated]** 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 **[clamp][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; Web: 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.

2.3 CONTINUOUS, COLOR-MATCHING – TYPE SNOW RETENTION SYSTEMS FOR [STANDING SEAM] [EXPOSED-FASTENED] [EXPOSED-FASTENED, TRAPEZOIDAL-RIBBED INSULATED METAL PANEL] METAL ROOFS

A. Basis of Design: ColorGard®, manufactured by S-5! div. of Metal Roof Innovations, Ltd.

B. Components:

1. Clamps:

- a. Manufactured from 6000-series aluminum extrusions conforming to ASTM B221 or aluminum castings conforming to ASTM B85 and to AA Aluminum Standards and Data.
 - 1) Clamp model to be as recommended by the manufacturer for the specific seam profile used on the project.
- b. Setscrews: 300-series stainless steel, 18-8 alloy, 3/8 inch (9.525 mm) diameter, with round nose point.
- c. Attachment bolts: 300-series stainless steel, 18-8 alloy, 8 mm diameter, hex flange bolt.

2. Brackets:

- a. Manufactured from 6000-series alloy and temper-aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.
 - 1) Model: [VersaBracket 47.] [VersaBracket 67.] [CorruBracket.] [SnoBracket.]
- b. Screws for attachment of brackets to roof: as specifically tested to the substrate used on the project, and furnished by snow guard manufacturer. All fastener portions exposed to the weather shall be stainless steel or Zinc/Aluminum cap.

3. Cross Members:

- a. Manufactured from 6000-series alloy and temper-aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.
- b. Receptacle in face to receive color-matched metal strips.
- c. Provide splice connectors ensuring alignment and structural continuity at end joints.

4. Color Strips: Same material and finish as roof panels; obtained from roof panel manufacturer.

5. Snow and Ice Clips:

- a. Aluminum, with rubber foot extending to and resting at surface of metal panels; minimum 3 inches (76.2 mm) wide.
 - 1) Model: SnoClip II or SnapClip II for standing seam heights 1 inch (25.4mm) to 1.5 inches (38.1 mm).
 - 2) Model: SnoClip III or SnapClip III for standing seam heights 1.75 inches (44.45 mm) to 3.25 inches (82.55 mm).

PART 3- EXECUTION

3.1 EXAMINATION

Prior to beginning installation, verify:

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.

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.
- B. Wipe away excess oil and debris at bracket locations.

3.3 INSTALLATION

- A. Install system in accordance with manufacturer's instructions and approved shop drawings.
- B. ColorGard snow retention system:
 - 1. Place clamps at maximum 32 inches (812.6 mm) on center or as required by certified calculation.
 - 2. Place clamps in straight, aligned rows using a string line.
 - 3. Place both setscrews on same side of clamp.
 - 4. Tighten setscrews to manufacturer's recommended torque. Calibrate tool to setscrew torque using calibrated dial-indicating torque wrench.
 - 5. Insert color-matched metal strips into cross members, staggering strips to cover cross-member joints.
 - 6. Attach cross members to clamps; tighten bolts to manufacturer's recommended torque.
 - 7. Install splice connectors at cross-member end joints.
 - 8. Do not cantilever cross members more than 8 inches (203.2 mm) beyond last clamp at assembly ends.
 - 9. Install SnoClips or SnapClips at spacings indicated on shop drawings.
 - a. SnoClips: slide onto cross member before securing cross member to clamps.
 - b. SnapClips: Secure clips to back side of the cross member using stainless steel #10 x ½ inch (12.7 mm) screw provided.
- 1. Place brackets at maximum 32 inches (812.6 mm) on center or as required by certified calculation.
- 2. Clean roof area to receive bracket. Remove protective seal on butyl tape.
- 3. Place brackets in straight rows along underlying substrate using a string line.
- 4. Insert color-matched metal strips into cross members.
- 5. Place brackets at spot of attachment. Fasten with screws best suited for type of attachment, and install according to the manufacturer's instructions.
- 6. Attach cross members to brackets using self drilling screws.
- 7. Install splice connectors at cross-member end joints.

8. Do not cantilever cross members more than 8 inches (203.2 mm) beyond last bracket at assembly ends.
9. Install SnoClips or SnapClips at spacings indicated on shop drawings.
 - a. SnoClips: slide onto cross member before securing cross member to clamps
 - b. SnapClips: Secure **[SnapClip II]** **[SnapClip III]** to back side of cross member using stainless steel #10 x ½ inch (12.7 mm) screw (provided).
1. Place brackets at maximum 32 inches (812.6 mm) on center or as required by certified calculation.
2. Clean roof area to receive bracket. Remove protective seal on butyl tape.
3. Place brackets in straight rows along underlying substrate using a string line. Orient the bolt hole downslope.
4. Secure the bracket directly to the rib of the panel, straddling the profile.
5. Secure the SnoBrackets by driving the provided fasteners into the pre-punched holes. All eight pre-punched holes must be used to achieve published tested strength. Drive fasteners in until they are tight and the washer is firmly seated. Do not overdrive fasteners.
6. Install the ColorGard system using Versaclips with provided M8 bolts.
7. Be sure not to cantilever more than 8 inches beyond the last bracket. Any trimmed piece of ColorGard must be attached with at least two clamps.
8. Insert color-matched metal strips into cross members.
9. Install splice connectors at cross-member end joints.
10. Install SnoClips or Snapclips at designated spacings indicated on shop drawings.
 - a. SnoClips: slide onto cross member before securing cross member to clamps.
 - b. SnapClips: Secure clips to back side of the cross member using stainless steel #10 x ½ inch (12.7 mm) screw provided.

END OF SECTION