Installation Instructions for Solar SnowMax (SSM) Series of Snow Retention Products

Warning- Do not use this product on solar arrays where the ground snow loads exceed 50 pounds per square foot (psf). Most solar panels are rated for a compressive load of 50 psf. Using this product on projects where the ground snow loads are in excess of 50 psf may cause damage to the panels.

Snow Guard Layout

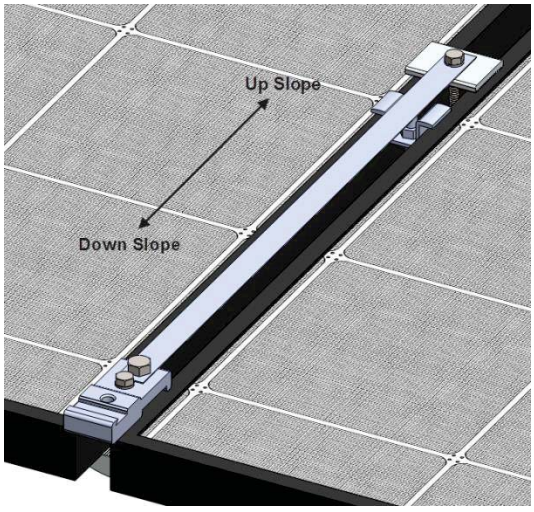
The images below show a sample installation of Solar SnowMax (SSM) on a solar array.

All SSM installations will require one (1) bracket installed in the vertical joint between panels.

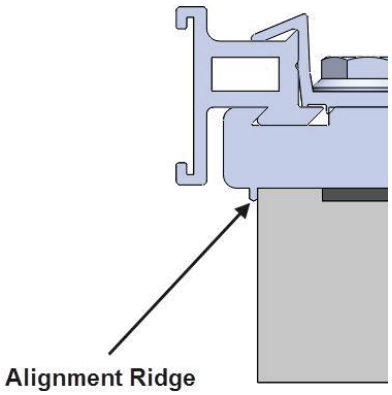
Installation

1. The first row of SSM brackets will be installed along the leading edge or eave of the array at the vertical joint between panels.

   Note: **The first row of SSM (if installed along the leading edge of the array) will always require the use of a strap to prevent the bracket from being pushed off the edge of the array in the event of an excessive load.**

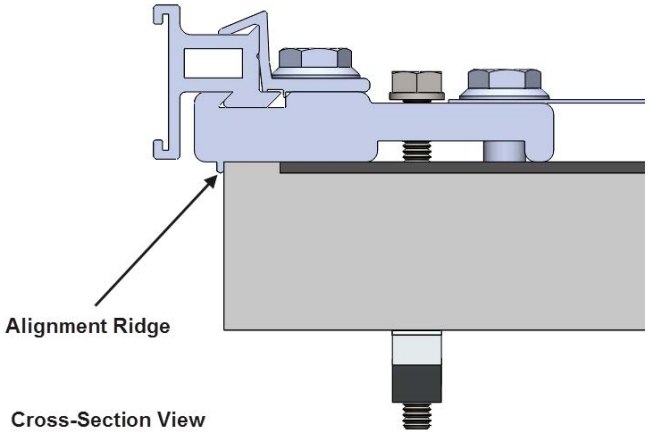


   Subsequent courses (if needed) may not require the use of a strap if the raised alignment ridge formed into the bottom surface of the bracket engages the top of the lower panel thus preventing the bracket from sliding down.



289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials

2. Each SSM bracket has an alignment ridge formed into the bottom surface of the bracket. On the first row of the array, install the bracket so that the alignment ridge pushes tightly to the leading edge of the array. Clamp bracket into place using T nut assembly as shown. If you are installing this row of assembly along the top edge of a panel, continue with installation instructions. Tighten the T bolt clamp to a torque setting of 120 inch pounds.



Cross-Section View

3. For SSM assemblies installed along the leading edge of an array, a strap is always installed to prevent the system from sliding down.

.032” x 1” Hemmed Aluminum Strap (Black or Mill Finish)

289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials

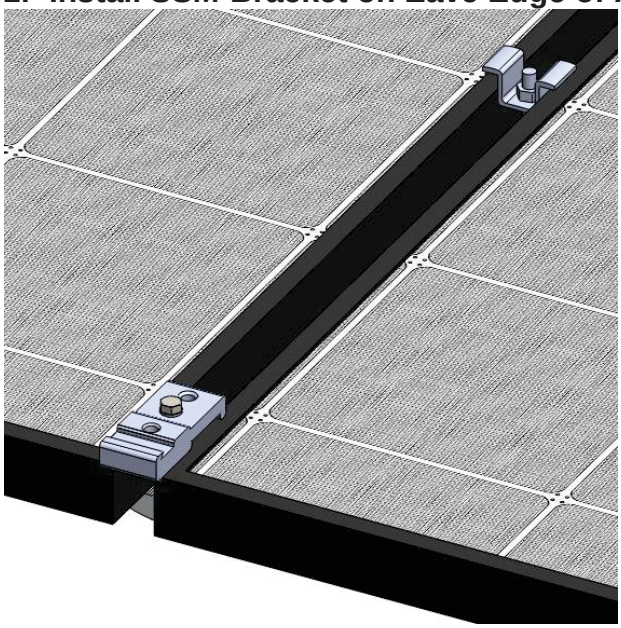
Assembly of Solar SnowMax-Bracket w/ Aluminum Strap Assembly with T Nut

SSM with Aluminum Strap Assembly with T Nut is an assembly that consists of:
(1) SSM-Bracket
(1) Aluminum strap assembly with T Nut
-Aluminum strap assembly with T Nut consists of:
(1) Strap (available in .032" Hemmed Aluminum Black or Mill Finish)
(1) Flange Bolt (for attaching the Strap to the SSM Bracket)
(1) T nut
(1) Spacer Plate

First, Install the SSM-Bracket as previously explained. Then install the Aluminum Strap Assembly with T Nut per the following instructions:

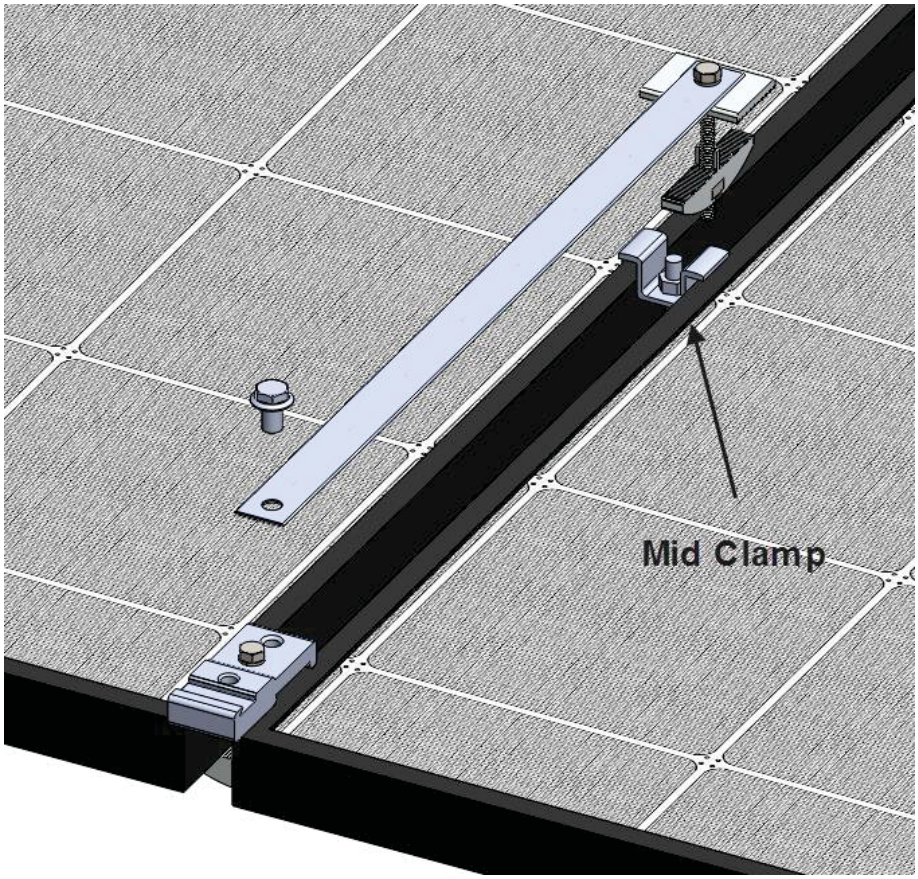
1) Turn the T nut so that it is parallel with the vertical joint between the panels
2) Locate the T nut on the up-slope side of the lowest mid-clamp and drop between panels (the purpose of the spacer plate is to elevate the strap above the mid-clamp assembly)
3) Install the provided Flange Bolt attaching the Strap to the pre-installed SSM-Bracket.
4) Turn the T nut perpendicular to the vertical joint so that when tension is applied using the 1/4" Bolt the " clamps to the bottom of the panel
5) Tighten bolts to a torque setting of 120 inch pounds.
6) Proceed to next assembly.

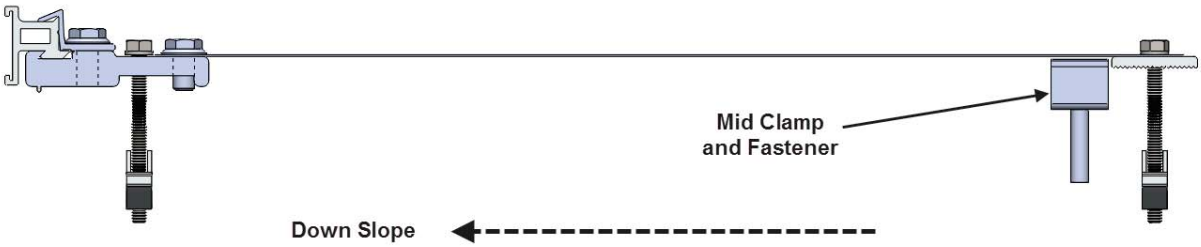
Step 1: Install SSM-Bracket on Eave Edge of Array



289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials

Step 2: Install Strap with T Nut, locating the T Nut above the lowest Mid Clamp so that it cannot slide down. This will vary from array to array depending on rack locations.





289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials

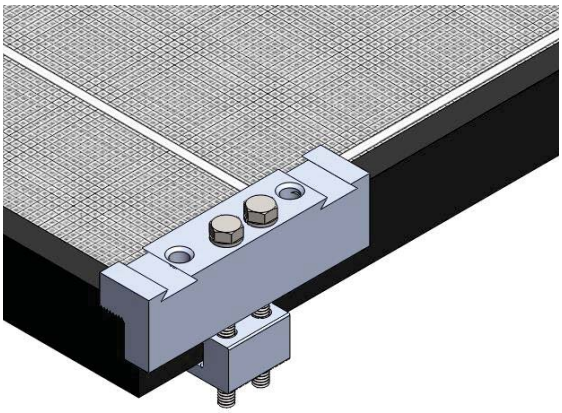
Assembly of End Bracket

End Bracket Assembly Main Clamp is installed on the bottom of the outermost panels on a tier of Solar SnowMax (Left and Right Sides) by aligning it with the other SSM-Brackets in the tier, placing it over the edge of the panel frame, and tightening the provided 1/4” fasteners.

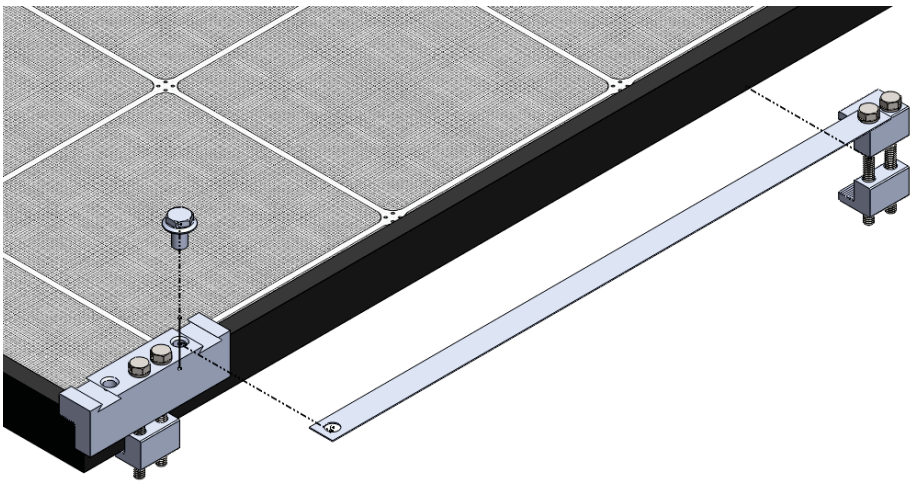
The strap is then attached to the End Bracket with the provided 3/8” Flange Bolt.

The upper clamp is then attached to the panel frame above the lower most panel end clamp in the same steps as the End Bracket, using the provided 1/4" bolts. See images below for clarification.

Step 1. Install End Bracket



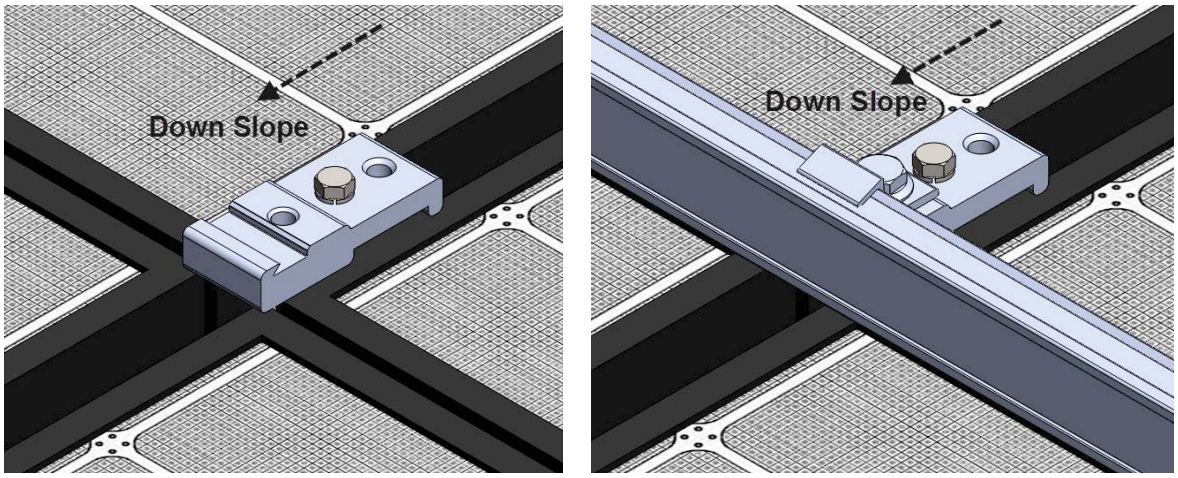
Step 2. Install Upper Clamp and attach Strap



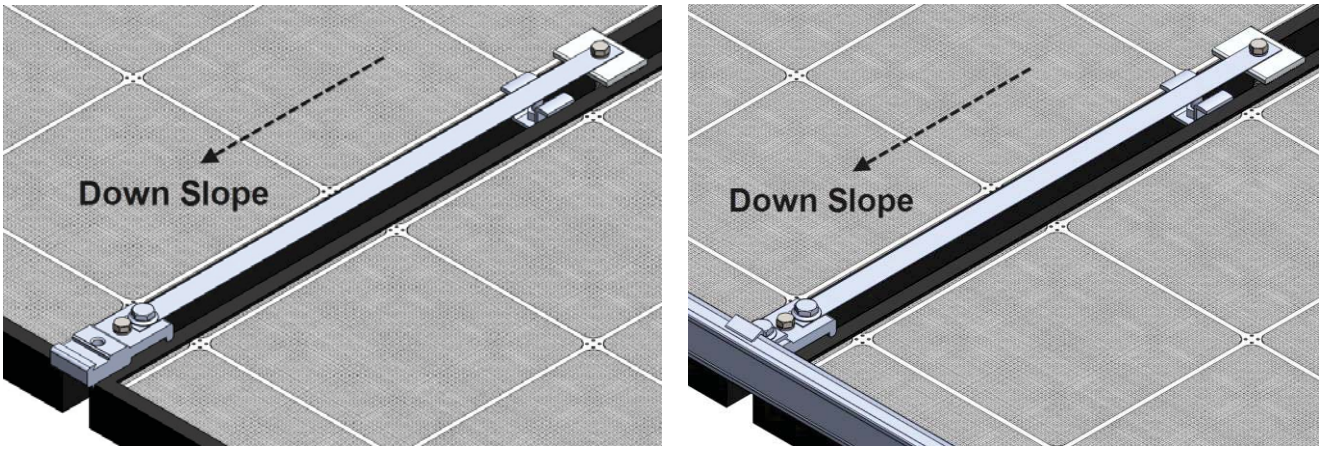
289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials

Assembly Image for Each Type of SSM-Bracket

Shown below are the images of each subsystem installed in their appropriate orientation. These assemblies are shown with and without the Solar SnowMax Bar for clarity.

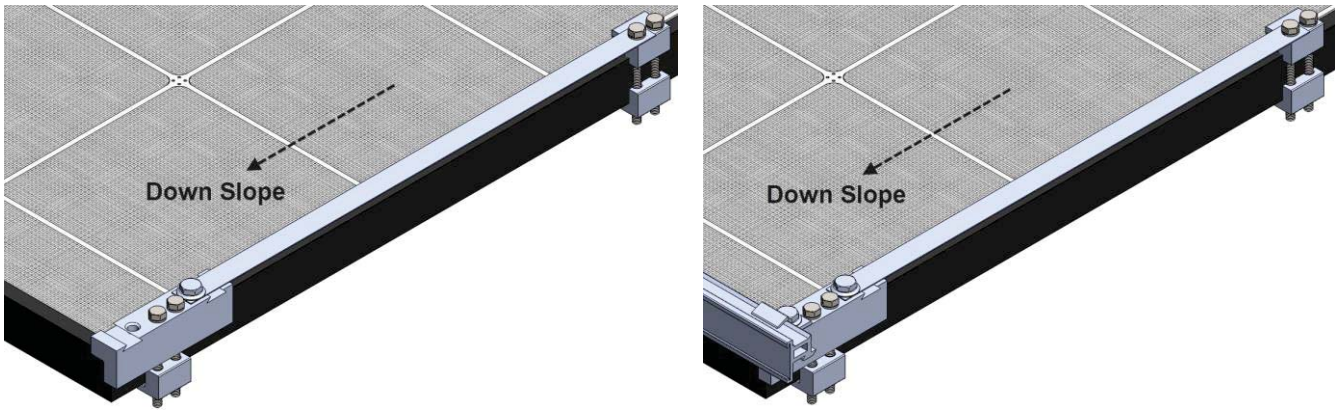


SSM-Solar SnowMax System – Field Assembly



Solar SnowMax Eave Assembly

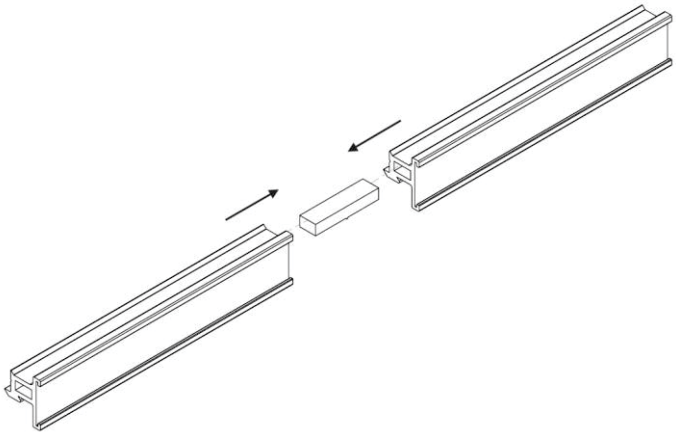
289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials



Solar SnowMax-End Bracket Assembly

Installation of Splice Plate

When connecting two lengths of Solar SnowMax Bar together, a Splice Plate is needed. The Splice Plate is slid into the rectangular slot at the end of the Solar SnowMax Bar. The small raised protrusion on one side of the Splice Plate keeps it from sliding too far into the end of either bar.



Layout for Extreme Snow Areas Greater Than 50 psf Ground Snow Load

If your project is in an extreme snow area, with greater than a 50 psf solar array snow load you will need to call us to discuss other options.

Document version 04.29.2015

289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994
info@alpinesnowguards.com A Division of Vermont Slate & Copper Services, Inc.
Made in Vermont USA from recycled materials