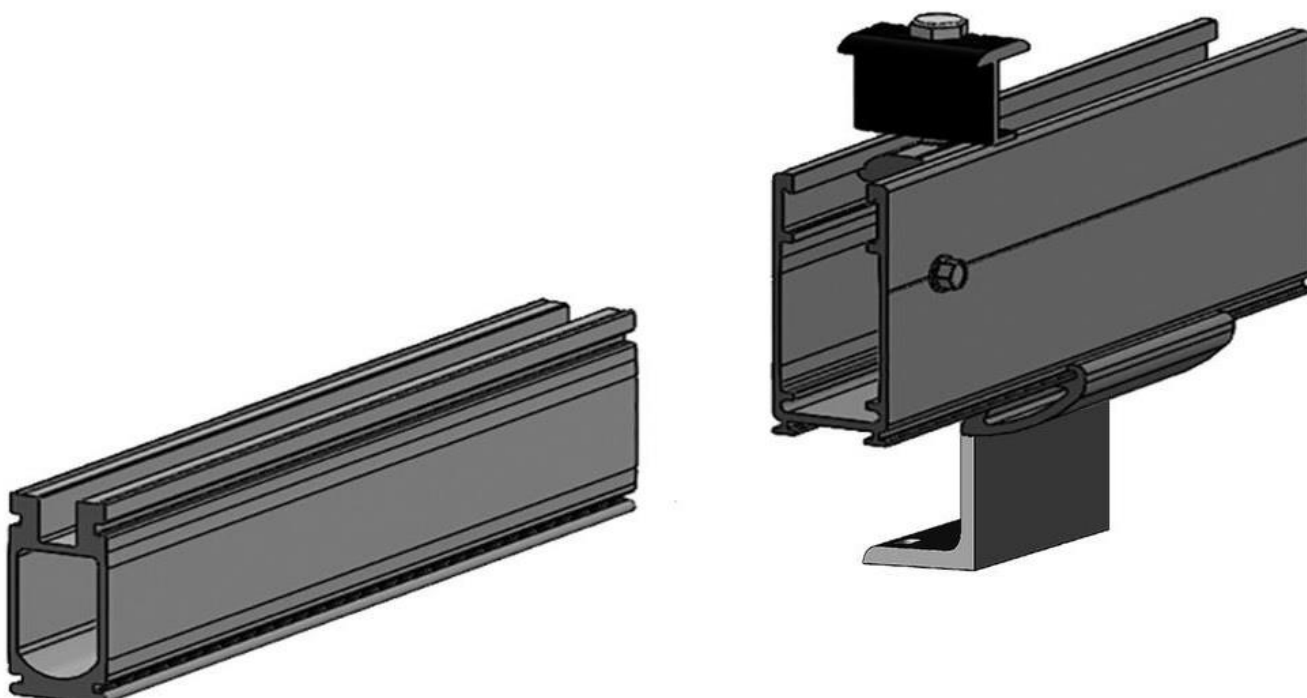


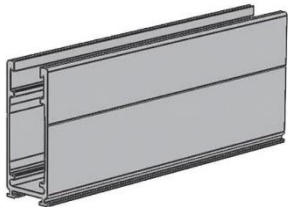


**UL Listed Rail System on
General Specialties Top of Pole Mounts**



Installation videos can be found on our website under the **Assembly Instructions** tab and on our **YouTube Channel** at **General Specialties Manufacturing**.

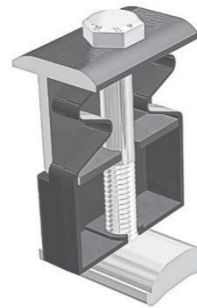
COMPONENTS FOR THE UL LISTED RAILS



3.1" Rail



Rail Mount



50-50 Clamp



Rail Splice



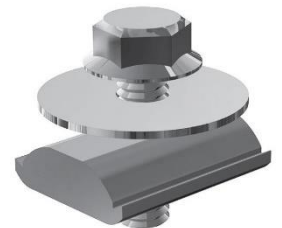
Rail Ground Lug



Module Frame Ground Lug



Wire Management Clip



MLPE Adapter

SYSTEM FEATURES

- Top clamps and rail attachments require the use of a 1/2-inch socket.
- Module clamps are spring loaded to ease module placement.
- Built-in wire management for module and microinverter cables.
- Certified to meet local and International building codes when installed in accordance with this manual.
- Design load rating meets the minimum requirements of 10 PSF downward pressure, 5 PSF upward pressure and 5 PSF down-slope load.
- ETL Listed to UL 2307 (by TSP Inc.) for bonding and grounding when installed in accordance with this manual.
- Rails, clamps, splices and mounting devices are UL2703 Listed for mounting flat-plate photovoltaic modules and panels.

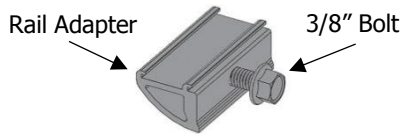


Intertek
5014275

Torque Specifications

Rail Support with 5/16-inch bolt	12 ft-lbs
MLPE Rail Attachment	12 ft-lbs
Ground Lug	12 ft-lbs
50-50 Clamp	12 ft-lbs
Rail Ground Lug	12 ft-lbs

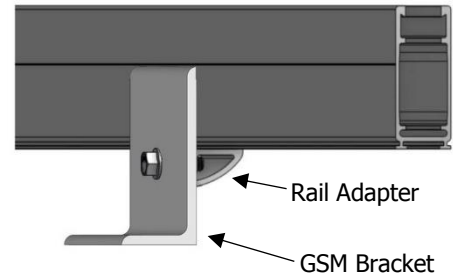
ATTACH RAIL MOUNTS AND INSTALL RAILS



Each Rail Adapter consists of two parts, a bolt and a clamp extrusion.

The Rail Adapter is compatible with the General Specialties Manufacturing (GSM) bracket.

Rail mounting is simple and easy. The Rail Adapter clamps to the two feet on the bottom of the rail. There is never any drilling and parts can be brought on site fully assembled and ready to be installed. Rail Adapters may be installed anywhere on the rails, including at splices and they will not interfere with module mounting clamps.



Note: Tolerances in rail manufacturing can vary. If the Rail Splice is difficult to slide into the rail use a silicone lubricant to help.

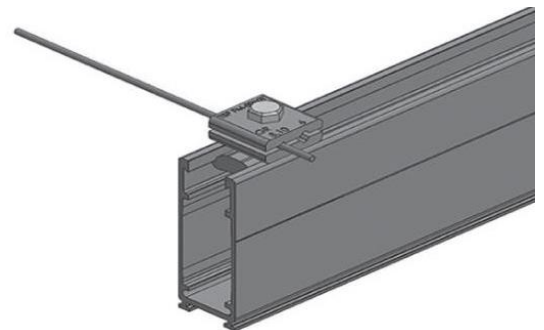
Insert the Rail Splice 5-inches into one rail end. Install one of the provided Rail Splice Locks and tighten to hold it in place. Slide the second section of rail over the splice until it contacts the first section and install the second Rail Splice Lock. Tighten bolt Rail Splice Lock bolts to 12 foot-pounds. Either bolt may be loosened and moved slightly if it interferes with mid-clamp placement when installing modules.

GROUNDING

The UL Listed rails and PV modules are bonded by 50-50 Module Clamps and splices. The 50-50 clamps achieve bonding to the module frames by stainless steel pins in the clamping surface of the clamp tops, which penetrate module frame coatings. The rails and channel nuts are bonded because of the conductive surface of the mill finish aluminum used in the rail construction.

Bonding Method: Rail Lug

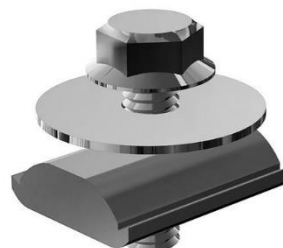
Use a Ground Clamp to bond a ground conductor to a rail. The ground clamp works with #10 - #6 AWG copper conductors.



MODULE LEVEL POWER ELECTRONICS

Use the Module Level Power Electronics (MLPE) Rail Adapter to attach and bond microinverters or optimizers to the rails.

Tighten the bolt with a 1/2" socket to the proper torque.



WIRE MANAGEMENT CLIPS



Place electrical conductors and connectors at the bottom of the rail channels. Wires can be threaded through the hole in the splices. Check to be sure that they do not conflict with the self-drilling fasteners. Install Wire Management Clips where necessary.



MODULE INSTALLATION

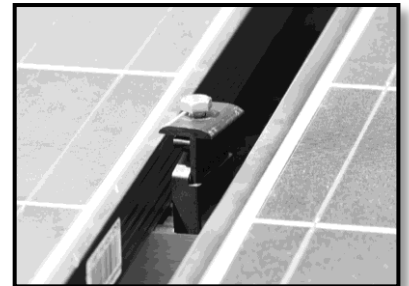
Start module installation at one end of the rails. If there are multiple rows, start on the bottom row.

Install a 50-50 Clamp at the end of each rail with the side of the clamp with two bonding pins on the module frame. Push the channel nut into the rails. The integrated spring assembly will hold the clamp in place.

Place the first module onto the rails so that it is centered over the rails. Make sure the module is touching the inside edge of the clamps and tighten the clamps with 1/2" socket.



Install 50-50 Clamps in each rail on the other side of the first module. The springs will hold the clamps in place prior to tightening. Place the second module on the rails, align it with the first module and push in against the clamps. Tighten the clamps to fully secure the module.



Install the remaining modules and clamps on the rails in the same manner, aligning the corners of the modules.

On the outside edge of the last module, install the clamps so that the side with the two stainless steel pins are on the module frame. Tighten all bolts to the specified torque.

Do a final check to be sure that all installation hardware on the array is properly tightened.

END CAPS

Place an End Cap at the end of each rail to improve the look of the system. Drain holes on the bottom of the end caps ensure that water does not accumulate in the rails.

