

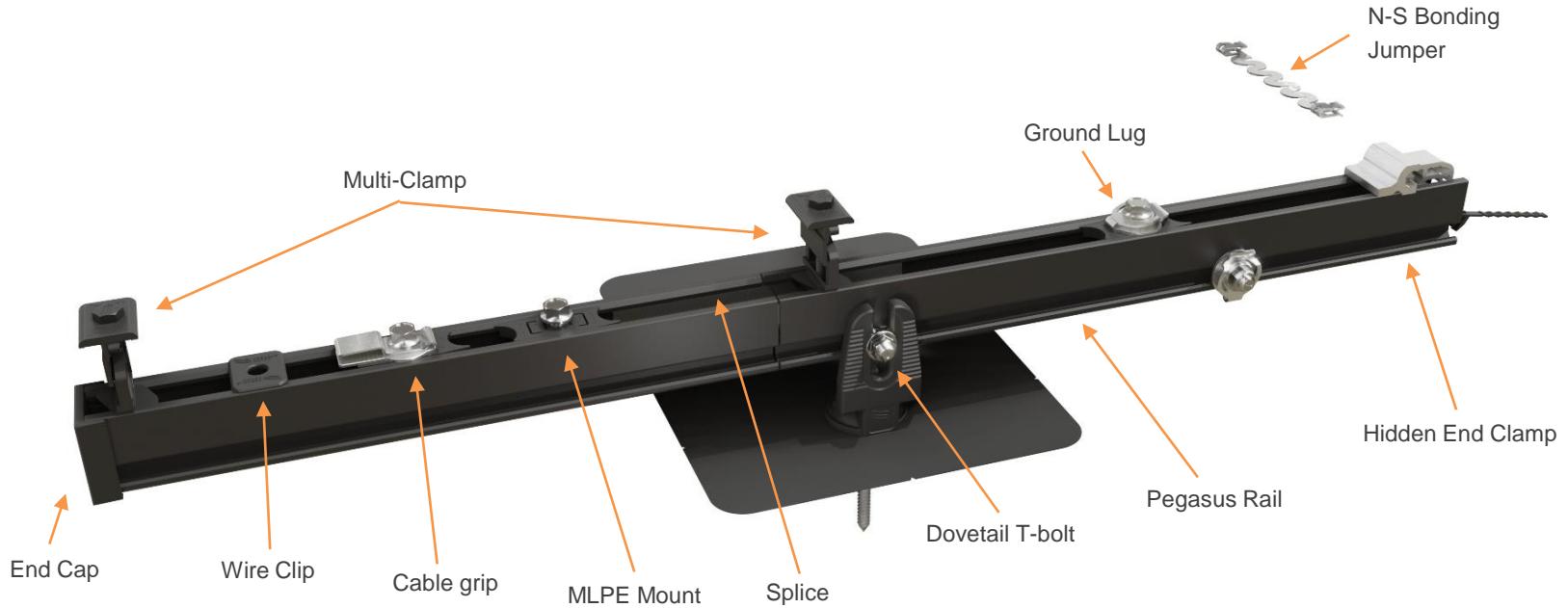


Pegasus Rail System – Bonding & Grounding







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Pegasus Rail System



Bonding Paths

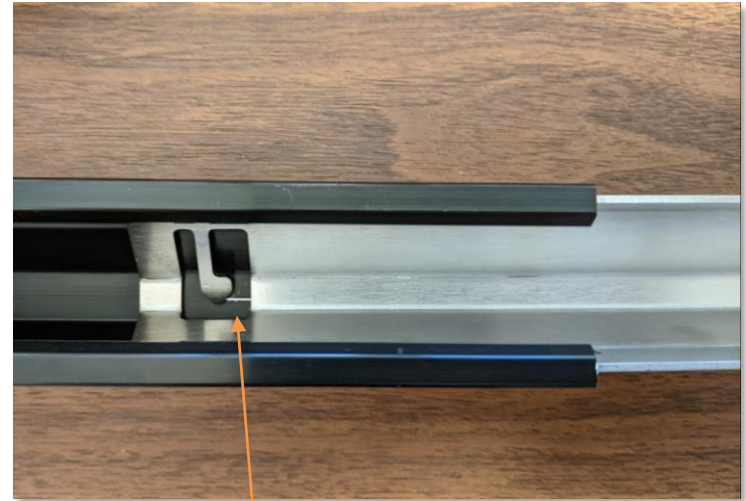
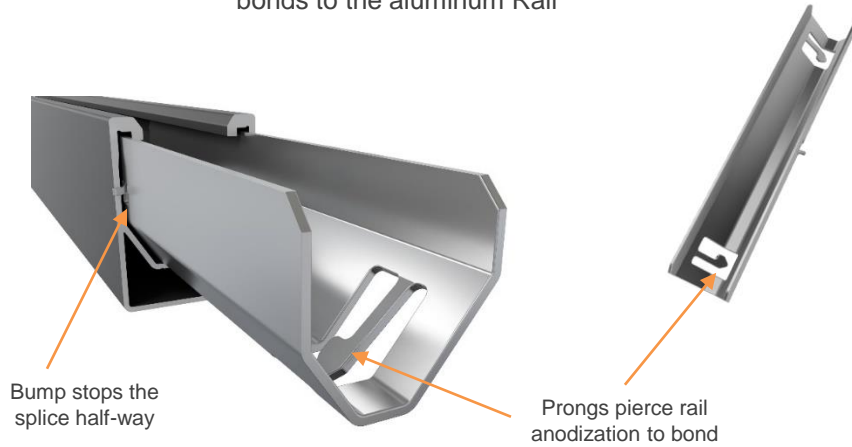
Part Picture	Part	Bond Path	UL Listing
	Splice	Rail to Rail	UL2703 listed as reusable
	Multi-Clamp	PV module to PV module and to Rail	UL2703 listed as reusable
	MLPE Mount	MLPE to Rail	UL2703 listed as reusable
	N-S Bonding Jumper	PV module to PV module	UL2703 listed as reusable
	Ground Lug	Rail to Ground Wire	UL2703 listed as reusable & Conforms to UL467
	Dovetail T-bolt	Rail to Tilt-Leg Bracket or Ground Lug	UL2703 listed as reusable



Bonding Splice



All Stainless-Steel splice electrically bonds to the aluminum Rail



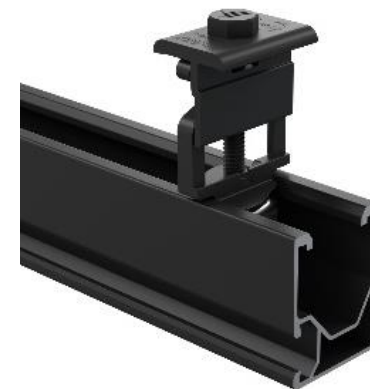
Multi-Clamp to Rail



Stainless-Steel bolt bonds the “nut” to the
Top Clamp and Bonding Plate



Stainless-Steel “nut” has redundant spikes
that cut into the Rail’s anodization (one spike
on left and right side)



After the Multi-Clamp is installed into the
Rail, it will bond after being clamped down



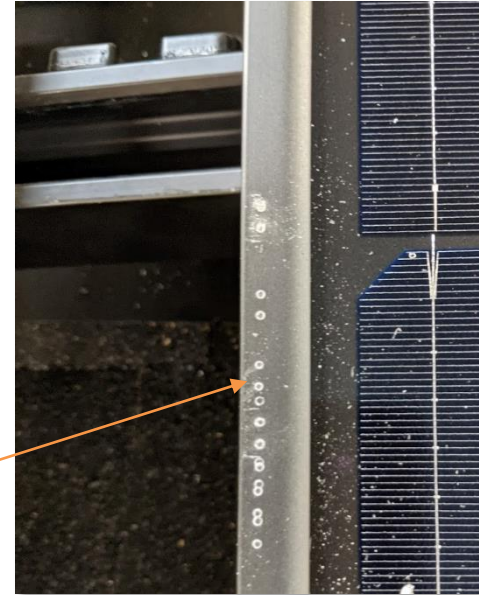
Multi-Clamp to PV Module



Redundant "volcanoes" pierce each PV module on both sides of clamp

Stainless-Steel "bond plate" bonds adjacent PV modules together, and both PV modules to the Multi-Clamp

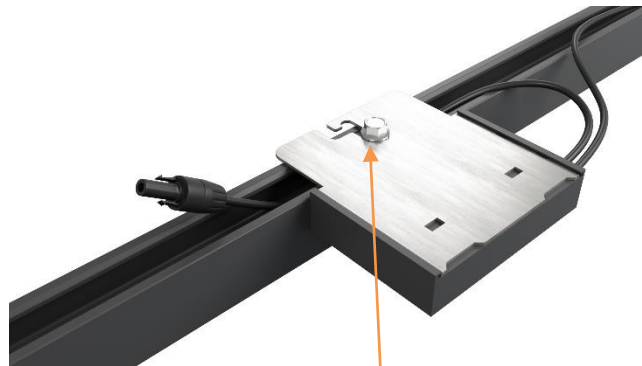
Volcanoes consistently pierce the module frame anodization after multiple uses



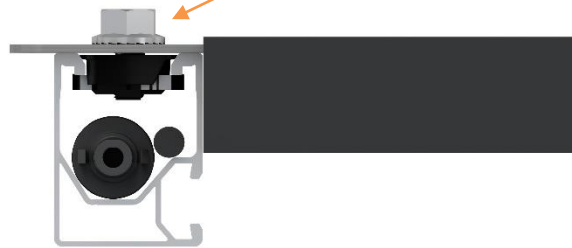
MLPE Mount to Rail and MLPE



Stainless-Steel "nut" has redundant spikes that cut into the Rail's anodization (one spike on left and right side)



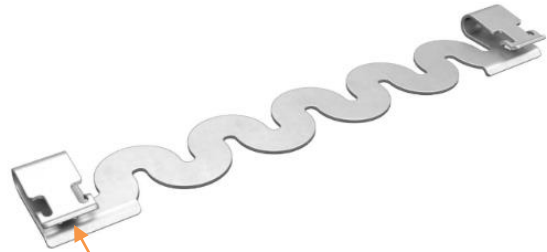
Stainless-Steel serrated bolt bonds MLPE (either a Microinverter or Optimizer) to the Nut, and then to the Rail



N-S Bonding Jumper



- Stainless Steel
- Quad barbed teeth cut into anodization of PV module flange
- Bonds PV modules row-to-row



Four barbed teeth provide redundancy when piercing the anodization of the PV module frame



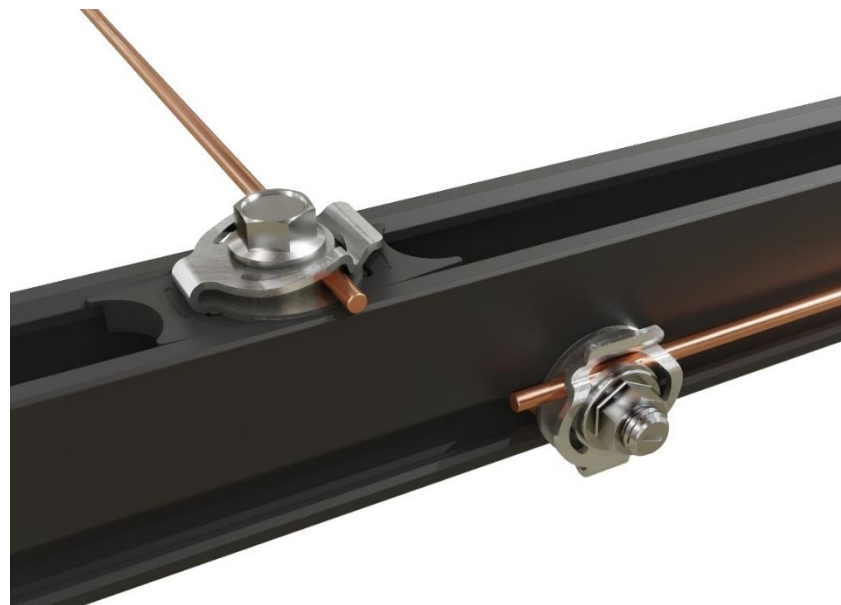
View is of underside of PV modules – from the roof looking up towards the sky



Ground Lug



- Stainless Steel
- For 6- or 8-AWG Copper Wire
- Installs on top of Rail using MLPE Mount, or side of Rail using the Dovetail T-bolt



UL2703 Listed Bonding / Grounding – 3 Methods

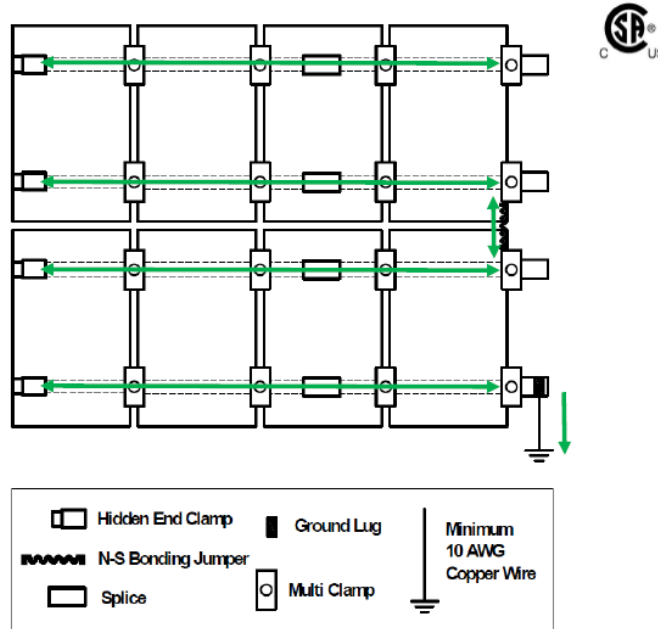
1. N-S Bonding Jumpers with 1 Ground Lug per Array
 - The N-S Bonding Jumpers bond each row of PV modules to one another, then a single Ground Lug anywhere in the array connects the system to Ground
2. A Ground Lug for each PV Module row
 - A Ground Lug is located on each PV Module row, and the copper Ground Wire is routed to each PV Module row
3. Grounding through the Enphase Trunk Cable
 - The entire system is bonded together, and through the MLPE Mount into the Enphase Microinverter, the connection to Ground is made



All Three Methods Have Been Tested and Listed by CSA to UL2703



1) N-S Bonding Jumpers with 1 Ground Lug per Array



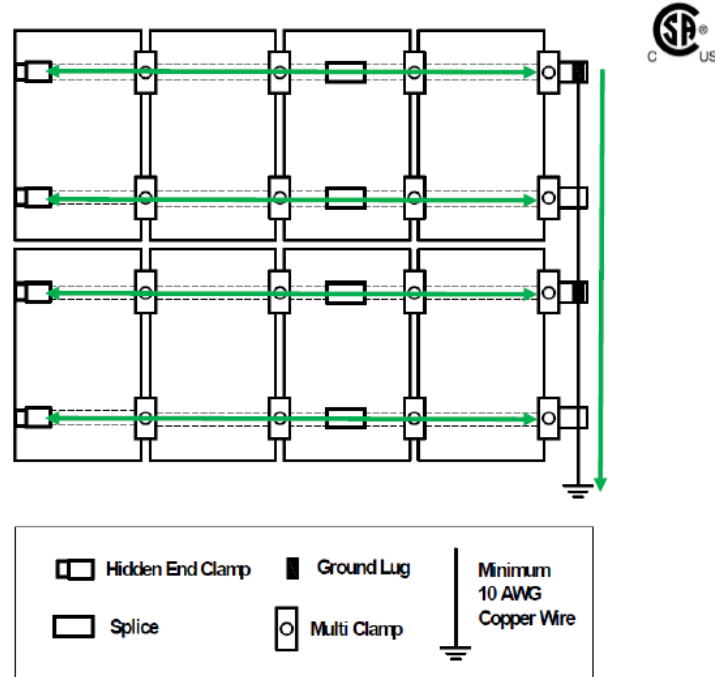
Multi-Clamps bond adjacent PV modules to one another and to the Rail. The Splice provides a bond connection between two Rail sections, including when a 1" thermal gap is utilized. The N-S Bonding Jumper will provide a bonding path between rows of PV modules, so that one Ground Lug per array is necessary for earth ground. If a thermal break is left between two sections or Rail, the Multi-Clamps will provide a bond path across the two Rails through the PV module frame.

The N-S Bonding Jumper may only be used with the Pegasus Rail System, and is not certified for use with any other mounting system.

If the N-S Bonding Jumper needs to be removed during maintenance, a second N-S Bonding Jumper shall first be installed on the opposite end of the row or PV modules, or the array should be disconnected from A/C power.



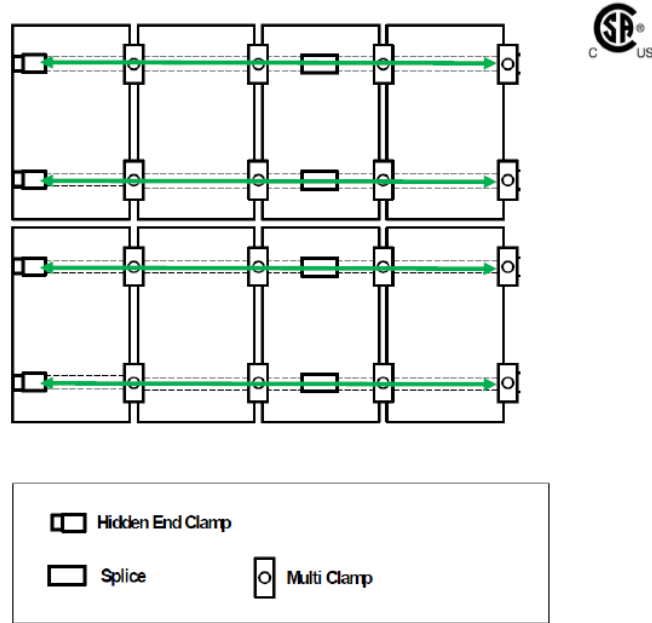
2) One Ground Lug for Each PV Module Row



Multi-Clamps bond adjacent PV modules to one another and to the Rail. The Splice provides a bond connection between two Rail sections, including when a 1" thermal gap is utilized. One Ground Lug is required per row of PV Modules, with a final earth ground connection at the terminal end of the ground wire. If a thermal break is left between two sections or Rail, the Multi-Clamps will provide a bond path across the two Rails through the PV module frame.



3) Grounding through Enphase Trunk Cable



Multi-Clamps bond adjacent PV modules to one another and to the Rail. The Splice provides a bond connection between two Rail sections, including when a 1" thermal gap is utilized. The MLPE Mount creates a bond connection to the MLPE. When using Enphase products, Ground Lug, N-S Bonding Jumpers, or other equipment ground conductors (EGC) are not required, and the use of the Enphase products satisfies the UL7/03 bonding and grounding requirements.

Compatible Enphase products:

- Microinverters M250-72, M250-60, M215-60, C250-72; with Engage cables ETXX-240, ETXX-208, ETXX-277

