

Photo: AceClamp

MOUNTING GUIDE 2017

# CLAMPS OF APPROVAL

HERE'S WHAT TO LOOK FOR WHEN SELECTING PV CLAMPS

By **Marisa Borelli**

**C**lamps, the racking component used to fasten and ground modules to rails, are an integral component of a racking system. Knowing what to look for in a clamp is a great place to start when vetting racking solutions. Ideally, solar module clamps should be versatile, high quality, aesthetically pleasing and ultimately save you time on the roof.

Versatile solar module clamps are important because they allow for streamlined purchasing and ensure that you always have the right materials in stock. With framed modules ranging from 30 to 50 mm in height, a clamp that can accommodate any height means that you only have to worry about stocking one part, regardless of the modules that you install. With module prices

dropping, this simplicity allows you to opportunistically shift your module purchasing without having to worry about changing the racking you stock. Going one step further, the most versatile clamps will be both module height agnostic and double as a mid and end clamp. Having both of these features reduces SKU count and increases simplicity.

## DOES IT MEET STANDARDS?

Quality of the clamp needs to be considered because racking systems are responsible for the structural integrity of solar systems that will be around for more than 20 years. Some factors to consider are code compliance and certifications, the amount and quality of testing

that has been done and the warranty provided by the manufacturer.

A clamp needs to be UL 2703 Listed, which means it passes electrical, mechanical and fire testing. Be sure the clamp is UL Listed rather than just UL Classified or UL Recognized. UL Classified means it has only passed a portion of the required testing, and UL Recognized means that only a component of the racking system has passed a portion of the testing.

Warranty is important because it shows the level of confidence a manufacturer has in its product. The industry standard for a racking product warranty is 20 years.

## IS IT A LOOKER?

Aesthetics of a clamp should be considered because sleek looking systems will increase the adoption of residential solar.

For a clamp, more attractive means having multiple finish options and a hidden end clamp. Matching the color of the clamp to the color of the module frame will give the system a cleaner look. A hidden end clamp eliminates protruding rails, helping rail-based systems rival the aesthetics of rail-less while remaining more cost effective.

## DOES IT SAVE YOU TIME?

Purchasing a clamp that is pre-assembled with a low part count and integrated grounding can save you tons of time. Now, almost all of the top racking brands have integrating grounding, where modules are bonded directly to the rail through teeth on the clamps that bite into the module's anodized coating. This eliminates components, reduces cost and results in significant labor savings. Also, choosing a clamp that is able to stand alone in the rail channel will increase ease-of-install and turn a two person job into a one person job. Some brands accomplish this through single pre-assembled pieces that have a robust enough end to stand alone while others use spring loaded clamps. Another consideration is whether the mid clamp has a t-bolt or square bolt end. Square bolts need to be run through the rail prior to installation, whereas t-bolts can be inserted into the rail at any point.

Looking for these key features will ultimately save you time and money and allow for a smoother installation process. #

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**Marisa Borelli** is product manager for racking at Civic Solar.

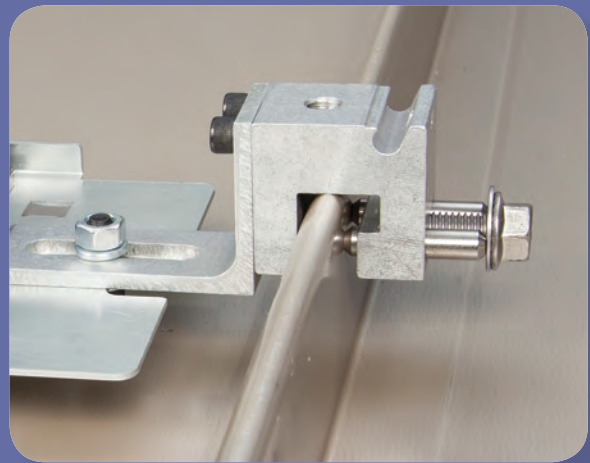
## ACECLAMP'S FAMILY OF CLAMPS

AceClamps are factory-assembled clamps with patented design features that allow strong connections to standing-seam roof panels without the use of set screws or any other loose parts that could damage the surface of the roof panel. Accessories include Solar Kits for securing PV solar panels; a Micro L-Foot to mount microinverters directly to the standing seam roof rib; and a custom designed L-Foot for attaching a racking system to the AceClamp when needed. AceClamp designs have been vibration tested during the development stage and incorporate special locking features to ensure that the bolts do not back out when subjected to vibratory loads from wind flutter and light seismic activity.



### HOW DOES IT SAVE TIME AND COST?

AceClamps and Solar-Kits are pre-assembled at the factory saving time at the jobsite. Four clamp styles fit the majority of the roof panels on the market, resulting in inventory cost savings. AceClamps install in less than half the time as most set-screw mounted clamps.



**Material:** 6061-T6 aluminum and 303 stainless steel

**Certifications:** AceClamp ML and A2 UL Listed to 2703; AceClamp ML approved by Factory Mutual (4471) for wind uplift attachment. A2 and Solar-Kit tested to UL 467 Grounding.

**Warranty:** 20-year limited