Unirac's Modular Solar Panel Framing System Shines

Although solar power has existed for several decades, with renewable energy becoming more and more popular, solar technologies have advanced dramatically over the past several years. Along with improving the harnessing power and storage capacity of solar panels, dramatic improvements are also being made to the structural integrity of the framework on which the panels are mounted and how they are attached to structures. The construction and mounting of these frames is as critical for durability and safety as are the solar panels themselves.

Unirac, Inc., a Hilti Group Company, and ICC Evaluation Service (ICC-ES) worked together, in conjunction with other industry organizations, to develop the ICC-ES "Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Modules" (AC428). This document requires solar infrastructure to be tested to withstand varying weather conditions, meet the manufacturer-specified lifespan, and show compliance with other critical durability and safety requirements as referenced in the 2009 and 2006 *International Building Code*® (IBC®) and *International Residential Code*® (IRC®).

First solar panel frame evaluation

Unirac's flush mount modular framing system for solar panels is the first product evaluated under AC428, with the evaluation documented in ICC-ES Evaluation Report ESR-3083. "This is a milestone for solar. In this emerging industry, the lack of standards has produced wild variations in engineering quality and safety," said Juan Suarez, Unirac Senior Director of Engineering. "By partnering with ICC-ES, we have achieved the first racking product certified to the IBC. We appreciate ICC-ES solar leadership and believe this will result in safer solar for our customers."

AC428 and ESR-3083 detail Unirac's Solar Mount (E)Volution flush-mounted and freestanding systems, and cover load factors for design, performance with regard to weather and natural disasters, structural design, connection capacities and a comprehensive list of other criteria. ICC-ES reviewed the results of extensive testing relative to the integrity of the framing and mounting materials and methods for roof and ground mounting based on varying building and installation conditions. There is now a way to qualify solar panels mounted to rooftops, thanks to AC428 and ESR-3083.

Code compliance for greater peace of mind

Unirac's Solar Mount (E)Volution is a frame system designed with code requirements in mind, and ICC-ES evaluated the product and determined that it was code-compliant based on recent editions of the International Codes.

Since the Unirac systems are modular, they are perfect for single- or multi-use facilities. This will enable more widespread use under a broader range of conditions, while also ensuring the product's installation and structural integrity consistently meet public safety requirements as specified in the International Codes.

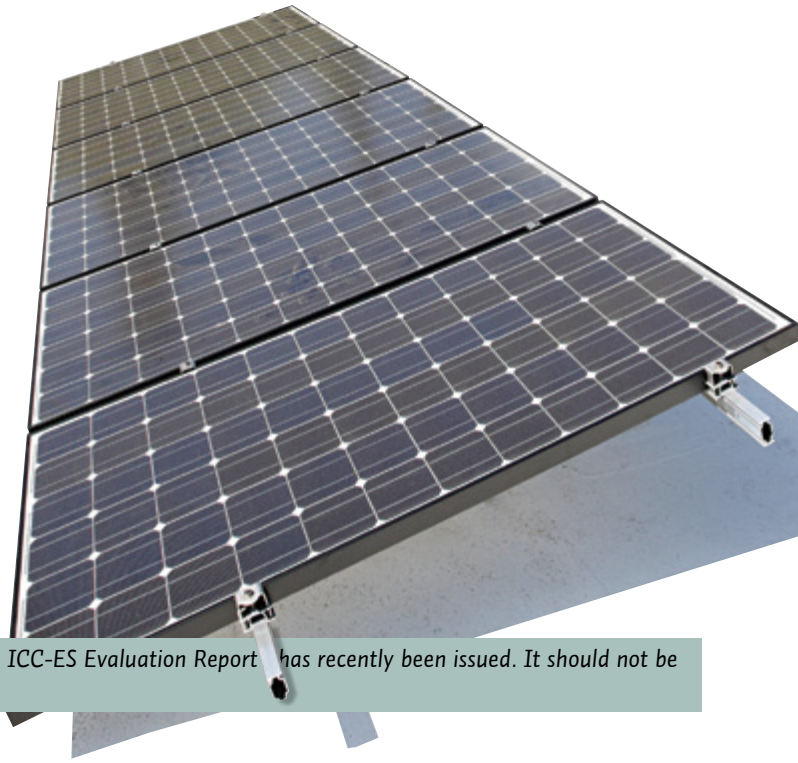
To learn more about this product, view **ESR-3083**, on the Unirac Solar Mount™ (E)Volution Flush Mount Modular Framing System, issued on February 1, 2012; and **AC428**.

All ICC-ES Evaluation Reports can be accessed and downloaded free of charge at **www.icc-es.org/evaluation_reports/index.shtml**, and are readily searchable based on attributes such as product type, manufacturer or report number. For more information, please visit www.icc-es.org.

Benefiting the entire industry

This new acceptance criteria and the resulting ICC-ES evaluation report will certainly benefit Unirac, but will also become a great aid to the entire solar panel industry, manufacturers and installers alike. "The rigorous review and approval process used by ICC-ES will provide our customers with the assurance they are installing a high-quality product. ICC-ES Evaluation Reports also reduce costs for contractors by making the permit process easier and more consistent," said Suarez. This new system means that installers of solar panels will have greater peace of mind in knowing their installations will be safer and stronger.

"Unirac wanted a report that was comprehensive enough to benefit the entire industry," said Yamil Moya, ICC-ES Staff Engineer. "AC428 not only specifies the requirements for materials, components and connections of Unirac's frame system, but it also details engineering calculations for varying building conditions."



** This article is intended to provide information on a product for which an ICC-ES Evaluation Report has recently been issued. It should not be construed as a product endorsement or a recommendation for its use.*