STANDARDS UPDATE NOTICE (SUN)
ISSUED: April 5, 2021

STANDARD INFORMATION

Standard Number: UL 2703
Standard Name: Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels
Standard Edition and Issue Date: 1st Edition dated January 28, 2015
Date of Revision: May 29, 2019
Date of Previous Revision of Standard: January 28, 2015

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **February 28, 2022**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes:

- Update Fire Testing and Classification Requirements in Sections 11 and 15
- Mechanical Loading Revisions

Specific details of new/revised requirements are found in table below.

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.

STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are <u>underlined</u> and deletions are shown ~~lined out~~ below.
	Info	**CONSTRUCTION**
6	Info	**General**
6.4		Threaded fasteners without suitable clamp load are subject to loosening and/or fatigue failure, therefore, threaded fasteners used to secure clamping devices and other components shall be utilized at their recommended clamp load. <u>For grounding and bonding connections, screws shall not be sheet metal thread forming type screws. For structural/mechanical connections, screws shall be as allowed in the relevant sections of the locally adopted Building and/or Residential Codes. Threaded fasteners are to be of suitable tensile strength and corrosion resistance and are to be tightened to the recommended torque for the fastener type and size as stated by the mounting system manufacturer.</u> ~~And shall not incorporate sheet metal thread from types (for example, but not limited to types A, B, and AB). The tensile strength of the cap screw shall match the proof load if the female threads. Threaded fasteners are to be of suitable tensile strength and corrosion resistance and are to be tightened to the recommended torque for the fastener type and size as stated by the mounting system manufacturer. The tightening torque specification shall result in a clamp load on the fastened joint that exceeds the force that the joint can exert against the threaded fastener.~~
6.7		Where a threaded rod is utilized, such as but not limited to a leveling device, and as such a clamp load is not possible, <u>then the stress of the component needs to be analyzed to show a factor of safety of at least 6:1 using the design load acting on that component applied to the area tributary to the component being analyzed.</u> ~~Allowable load on the threads shall be limited to 10% of the tensile strength of the material (not the clamp load noted in example 6.5 since there would not be a clamp load).~~ This is calculated using the tensile strength of the material multiplied by the stress area of the threads as follows: $As = 0.7854[D-0.9743/n]^2$ where: As = Stress Area D = Major Diameter n = number of threads

CLAUSE	VERDICT	COMMENT
		The result, As, is then multiplied by the tensile strength of the threaded rod, then comparison is made to the load the threaded rod would be subject to, using the cross-sectional area of the PV modules and the design loads.
7	Info	**Polymeric Materials**
7.4		A polymeric material that serves as mechanical mounting support shall have a minimum Relative Temperature Index (RTI) Mechanical without Impact value ~~of 95°C as described in~~ in accordance with the Standard for Polymeric Materials – Long Term Property Evaluations, UL 746B, as noted below: a) 105° C for components that are in direct contact with a module's polymeric substrate or superstrate and where: 1) The RTI of the module's substrate is no greater than 105°C, and 2) There is no standoff requirement in the module's installation requirements or the module's compliance with UL 1703 (Section 19) or UL 61730-2. b) 90° C for components that are not in direct contact with a module's polymeric substrate or superstrate, c) 70° C for components that are not in direct contact with a module's polymeric substrate or superstrate and where: 1) The product installation instructions or physical constraints ensures the bottom of a module is nominally on average 3 in or more off the roof surface, 2) There is a minimum of 1/4 in gap between modules, and 3) A minimum of 75% of the vertical area around the array is open for sloped roof racking systems (i.e. a skirt on only one side) and a minimum of 75% of the vertical area around a row of modules is open for flat roof racking systems (i.e. only side deflectors). Exception: A lower RTI minimum requirement for a polymer may be derived from the measured temperature of the polymer within a representative PV system including the manufacturer's rack mounting system that is subjected to the UL 1703 or UL 61730-2 Temperature Test. The test shall be conducted with the irradiance measured in the plane of the module and also in any other position relative to the sun that is allowed in the manufacturer's installation instructions where the polymer would likely experience maximum temperature.
11		**Fire Resistance** ***Section 11 has been completely rewritten, see standard for new requirements***
15		**System Fire Class Rating of Mounting Systems with Modules or Panels in Combination with Roof Coverings** ***Section 15 has been completely rewritten, see standard for new requirements***