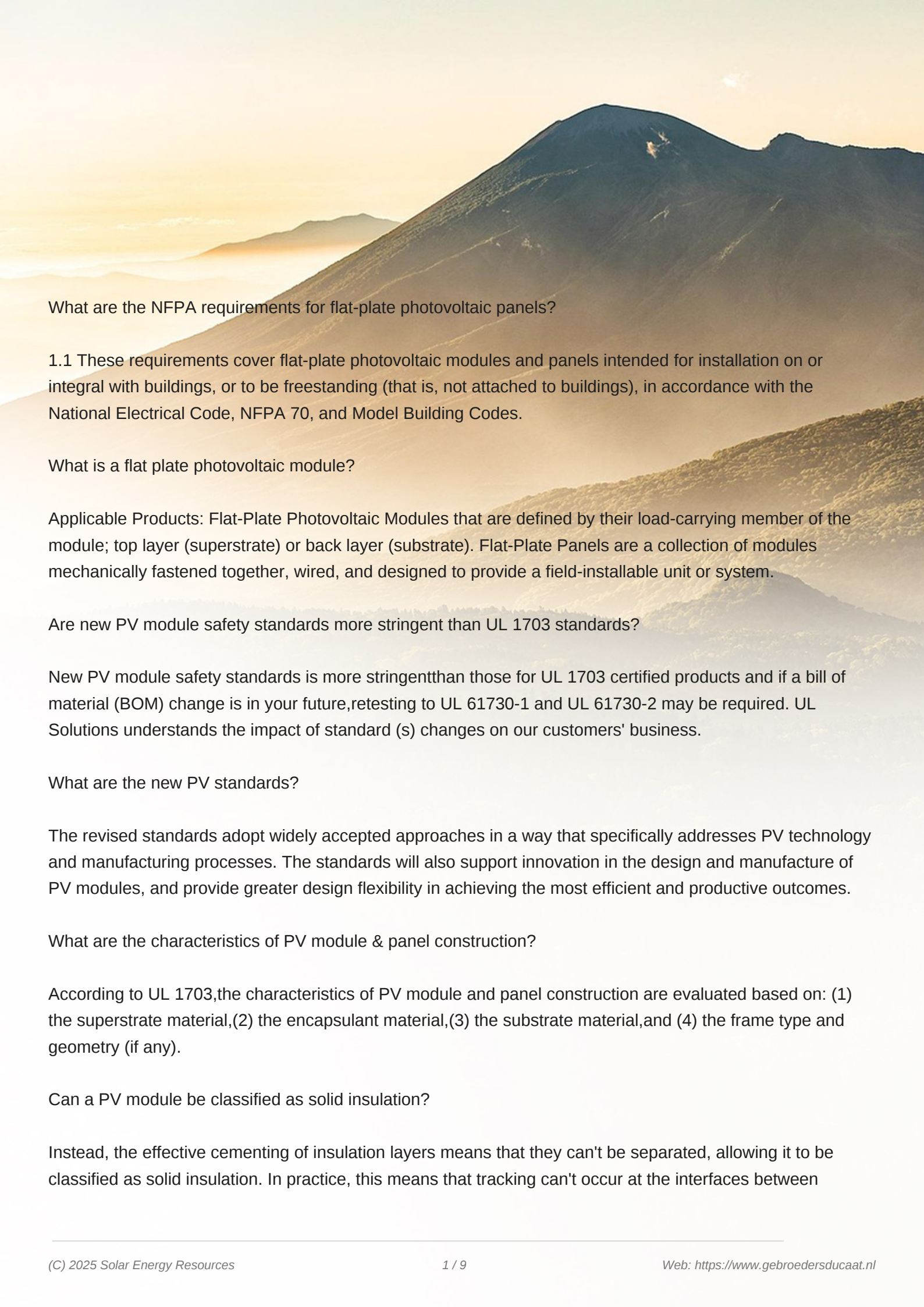




What are the NFPA requirements for flat-plate photovoltaic panels?

1.1 These requirements cover flat-plate photovoltaic modules and panels intended for installation on or integral with buildings, or to be freestanding (that is, not attached to buildings), in accordance with the National Electrical Code, NFPA 70, and Model Building Codes.

What is a flat plate photovoltaic module?

Applicable Products: Flat-Plate Photovoltaic Modules that are defined by their load-carrying member of the module; top layer (superstrate) or back layer (substrate). Flat-Plate Panels are a collection of modules mechanically fastened together, wired, and designed to provide a field-installable unit or system.

Are new PV module safety standards more stringent than UL 1703 standards?

New PV module safety standards is more stringent than those for UL 1703 certified products and if a bill of material (BOM) change is in your future, retesting to UL 61730-1 and UL 61730-2 may be required. UL Solutions understands the impact of standard (s) changes on our customers' business.

What are the new PV standards?

The revised standards adopt widely accepted approaches in a way that specifically addresses PV technology and manufacturing processes. The standards will also support innovation in the design and manufacture of PV modules, and provide greater design flexibility in achieving the most efficient and productive outcomes.

What are the characteristics of PV module & panel construction?

According to UL 1703, the characteristics of PV module and panel construction are evaluated based on: (1) the superstrate material, (2) the encapsulant material, (3) the substrate material, and (4) the frame type and geometry (if any).

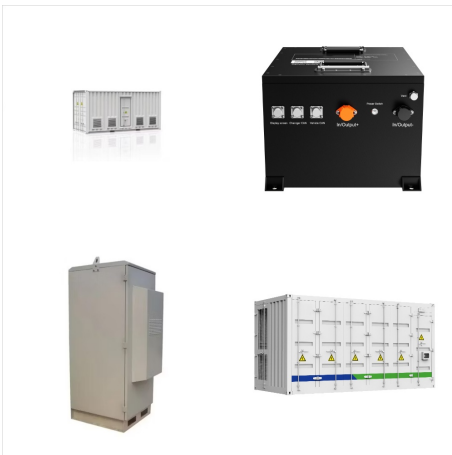
Can a PV module be classified as solid insulation?

Instead, the effective cementing of insulation layers means that they can't be separated, allowing it to be classified as solid insulation. In practice, this means that tracking can't occur at the interfaces between

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



internal layers. Figure 5: Side view of a PV module. The different live parts (e.g. cells, internal wiring) are shown.



standard UL 1703 "Flat Plate Photovoltaic Modules and Panels." Following translation ??? UL 1703.3:2003 Flat plate photovoltaic modules and panels Table 2. Important standards for PV modules.



platform is to be painted flat black on the side facing the test sample. The platform is to extend at least 2 ft (0.6 m) beyond the module or panel on all sides. 19.9 A module or panel intended for stand-off or rack mounting on a roof, wall, or the ground is to be mounted on a frame constructed from 2 in by 4 in (trade size) lumber.

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



Except as indicated in 4.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components generally used in the products covered by this standard.

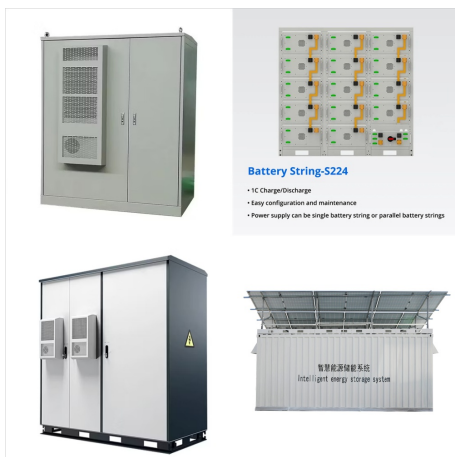


scope: 1.1 These requirements cover rack mounting systems, mounting grounding/bonding devices, and clamping/retention devices for specific (manufacturer/model designation) flat-plate photovoltaic modules and panels that comply with the Standard for Flat-Plate Photovoltaic Modules and Panels, UL 1703, or the Standard for Photovoltaic (PV) ???



UL Standard for Safety for Flat-Plate Photovoltaic Modules and Panels, UL 1703 Third Edition, Dated March 15, 2002 Revisions: This Standard contains revisions through and including June 30, 2004. SUMMARY OF TOPICS The following revision is being issued to incorporate requirements in accordance with Subject 1703 bulletin dated October 15, 2003.

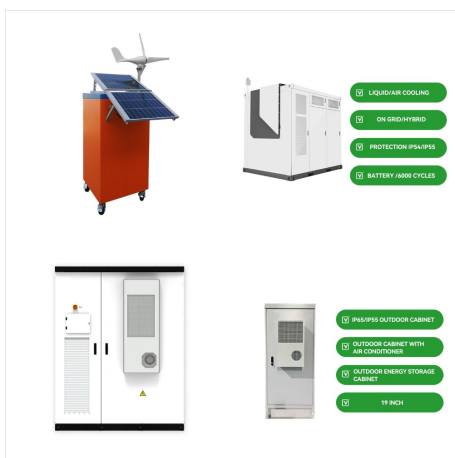
STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



The use of solar energy and photovoltaic (PV) modules and panels installed on or integral to roofs and in various product applications as a main source of power increases the likelihood for misapplication and misuse of the modules and panels or the breakdown of integral components associated with them resulting in the risk of fire, hazard, or electric shock. An ANSI approved ???



Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL Red Line Edition 1 Published Date: December 16, 2019 Last Revision: July 11, 2024



PV Module Standards and Codes. PV modules installed in the United States must conform with Underwriters Laboratories (UL) 1703 Safety Standard for Flat-Plate Photovoltaic Modules and Panels. This standard applies to roof-mounted, ground-mounted, pole-mounted, or integrated-mounted modules used in a PV system with a voltage of 1000 volts or less.

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



| UL Standards & Engagement | ULC ORD | Edition 2 | FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS | Published Date: May 01, 2018 | ANSI Approved: --Help; FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS. ULC ORD ULC-ORD-C1703-18 Edition 2 Published Date: May 01, 2018. Abstract

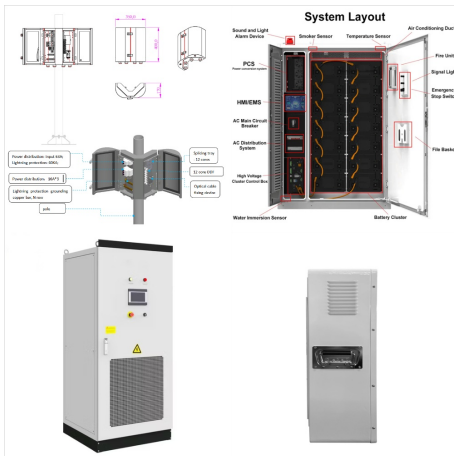


Standards Update Notice MY/JP/LT SUN Template 042214 Page 1 of 5 Standard Number: UL 1703 Standard Name: Flat-Plate Photovoltaic Modules and Panels Standard Edition and Issue Date: 3rd Edition Dated March 15, 2002 Date of Revision: ???



Standard covering overs mounting systems, including mounting devices, clamping devices and ground lugs for use with photovoltaic modules and panels and contains requirements for ground-mounted and roof systems as part of a nonstructural building component.

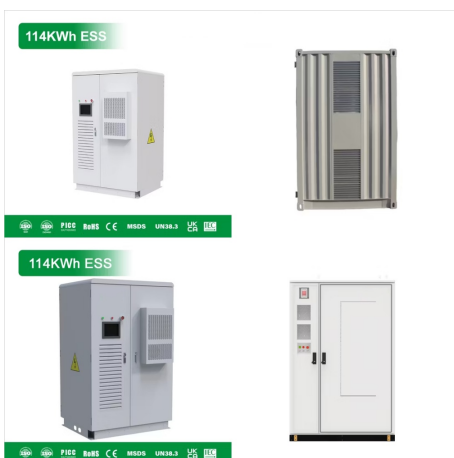
STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



The following topics were discussed at the meeting of the Standards Technical Panel for Flat-Plate Photovoltaic Modules and Panels. Note that the topics have been renumbered and reordered since the agenda was issued on November 9, 2010: 1. The Roles and Responsibilities of a Standards Technical Panel. 2.



UL 1703, for Flat-Plate Photovoltaic Modules and Panels; UL 1741 ??? Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources; UL 2703 ??? Rack Mounting Systems and Clamping Devices for Flat-Plate Photovoltaic Modules and Panels; UL 3703 ??? Trackers. Draft standard will be available soon



Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL Revision Edition 1 Published Date: March 24, 2021 Last Revision: July 11, 2024 ANSI Approved: March 23, 2021

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



STANDARDS UPDATE NOTICE (SUN) ISSUED:
December 18, 2020 SFT-ETL-OP-29c (January 22, 2018) Standards Update Notice KR/LT Page 1 of 5
Standard Number: UL 1703 Standard Name:
Flat-Plate Photovoltaic Modules and Panels
Standard Edition and Issue Date: 3rd Edition dated
March 15, 2002 Date of Revision:



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 Revisions:
this revised standard will be exclusively used for
evaluation of new products unless the Applicant
requests



Inc. (ANSI/UL) 1703, Standard for Safety for
Flat-Plate Photovoltaic Modules and Panels. Prior to
2013, a PV module manufacturer could receive a
fire classification rating based on tests of the
module or panel alone. After the 2013 changes to
ANSI/UL 1703, the fire classification rating approach
takes into account

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



Flat-Plate Photovoltaic Modules and Panels (UL 2703, 2015): This standard primarily addresses wind uplift and other issues associated with PV panel mounting systems. It is referenced in the 2015 and 2018 editions of the IBC. FM Global . Approval Standard for Roof-Mounted Rigid Photovoltaic Module Systems (FM 4478, 2016): This document

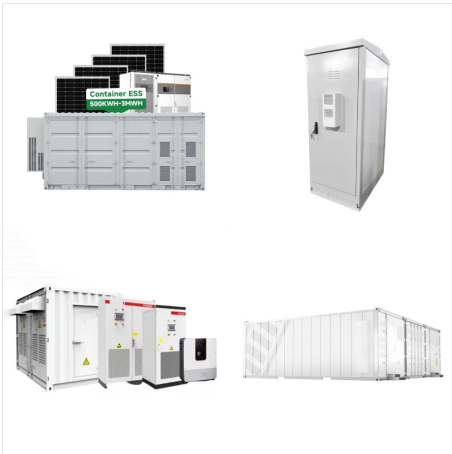


UL 1703: Standard for flat-plate PV modules and panels. UL 1703 is an industry-standard attesting to the safety and performance of solar panel modules. Similarly to IEC 61215 or 61703 tests, panels with this certification ???



Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels: 3730: 1: Photovoltaic Junction Boxes: 6703: 1: Connectors for Use in Photovoltaic Systems: 9703: 3: Outline of Investigation for Distributed Generation Wiring Harnesses: 9741: 1: Electric Vehicle Power Export

STANDARD FOR FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS



UL 1703, "The Standard for Flat-Plate Photovoltaic Modules and Panels," was largely based on the JPL's block-buy module development and test experience. UL 1703 then led to the development of the first edition of the IEC 61730 to supplement the type approval standards IEC 61215, "Terrestrial photovoltaic (PV) modules ???



ul1703ed2002-Standard for Flat-Plate Photovoltaic Modules and Panels- HOME; PRODUCTS. Publisher Collections; Standards Connect; Standards Packages; Selected Standards; Best Selling Standards and Packages; however some ISO and IEC standards are available from Amazon in hard copy format.



C1703-01 for PV Modules and UL61730. These Standards cover flat-plate PV modules and panels intended for installation on buildings or those intended to be freestanding. To satisfy the Listing for this product the modules must be mounted with a rack or standoff structure. The Listing does not include integration into a