

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

iTeh STANDARD

Terrestrial photovoltaic (PV) modules – Design qualification and type approval –
Part 1-3: Special requirements for testing of thin-film amorphous silicon based
photovoltaic (PV) modules

Modules photovoltaïques (PV) pour applications terrestres – qualification de la
conception et homologation –

Partie 1-3: Exigences particulières d'essai des modules photovoltaïques (PV) au
silicium amorphe à couches minces





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INTERNATIONAL
ELECTROTECHNICAL
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ICS 27.160

ISBN 978-2-8322-1089-3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**TERRESTRIAL PHOTOVOLTAIC (PV) MODULES –
DESIGN QUALIFICATION AND TYPE APPROVAL –**

**Part 1-3: Special requirements for testing of thin-film
amorphous silicon based photovoltaic (PV) modules**

AMENDMENT 1

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Amendment 1 to IEC 61215-1-3:2021 has been prepared by of IEC technical committee 82: Solar photovoltaic energy systems.

The text of this Amendment is based on the following documents:

Draft	Report on voting
82/1997/FDIS	82/2021/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications/.

A list of all parts in the IEC 61215 series, published under the general title *Terrestrial photovoltaic (PV) modules – Design qualification and type approval*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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3 Terms and definitions

Replace:

This clause of IEC 61215-1:2021 is applicable without modifications.

by: <https://standards.iteh.ai/catalog/standards/sist/d9ef1b1c-5210-4de0-8866-0db341f7c996/iec-61215-1-3-2021-amd1-2022>

This clause of IEC 61215-1:2021 is applicable with the following modifications.

Add the following new terms:

3.13

reduced mechanical load module

module where the test load in MQT 16 is less than 2 400 Pa

Note 1 to entry: 2 400 Pa was required in earlier versions of the IEC 61215 series for all technologies (e.g. IEC 61215-2:2021).

3.14

restricted access area

area accessible only to electrically skilled persons and electrically instructed persons with the proper authorization

EXAMPLE Utility-scale PV installations which are protected against public access by fences, location, etc., and where only persons skilled, trained or instructed in electrical safety have access.

[SOURCE: IEC 60050-195:1998, 195-04-04, modified – The example has been added]

5 Marking and documentation

Replace:

This clause of IEC 61215-1:2021 is applicable without modifications.

by:

This clause of IEC 61215-1:2021 is applicable with the following modifications.

5.1 Name plate

Each module shall include the following clear and indelible markings:

Add the following new items:

- l) For modules with reduced mechanical load: the range of positive and negative design loads [Pa] the module manufacturer's recommended mounting configurations will allow, preceded by the phrase, "reduced mechanical design load" and followed by the phrases "Not for roof mount. For ground mounted installations with restricted access only. May only be used in systems designed by a licensed professional engineer."

EXAMPLE:

Reduced mechanical design load: ± 800 Pa.

Not for roof mount. For ground mounted installations with restricted access only. May only be used in systems designed by a licensed professional engineer.

- m) For modules with reduced mechanical load: Type or model number designation shall contain a unique identification that is used for reduced mechanical load.

EXAMPLE:

Regular mechanical load module type designation: M300W.

Reduced mechanical load module type designation: M300W-X.

Where -X can be e.g. a combination of letters or numbers.

5.2 Documentation

5.2.2 Information to be given in the documentation

Add the following new item:

- r) For modules with reduced mechanical load, the documentation shall contain the following: "When PV modules are intended to be installed in an engineered scenario by qualified personnel such as in a ground mounted utility scale application with restricted access, they may be designed for lower loads. The test load may be lower than 2 400 Pa but greater than 1 200 Pa (or any load in between) with a safety factor of 1,5; corresponding to design loads of 1 600 Pa and 800 Pa (or any load in between), respectively, for the down (positive) pressures and uplift (negative) pressures. These modules may be used in array locations where the module mounting and structure in combination are designed to meet a specific design load by the installer. Alternatively, modules having a higher minimum test load compatible to the required site-specific loads may be used. The reduced load modules cannot be used on a rooftop."

NOTE Many large PV installations of today are designed, engineered, and installed by qualified experts in the electrical, mechanical and structural fields per the prevailing local codes. Designers utilize allowances in building codes to target certain locations in the array to handle higher loading than other areas. The manufacturer mounting configurations, stated design loads and test safety factors are utilized in the overall system design approach.

11 Test flow and procedures

Replace:

The test flow from IEC 61215-1:2021 is applicable.

by:

The test flow from IEC 61215-1:2021 is applicable with the following modifications.

Table 3 – Summary of test levels

Replace:

Test	Section in IEC 61215-2 Ed.2	Title	Test conditions
MQT 16	4.16	Static mechanical load test	Three cycles of uniform load specified by the manufacturer, applied for 1 h to front and back surfaces in turn. Minimum test load: 2 400 Pa

by:

Test	Subclause in IEC 61215-2 Ed.2	Title	Test conditions
MQT 16	4.16	Static mechanical load test	Three cycles of uniform load specified by the manufacturer, applied for 1 h to front and back surfaces in turn. Minimum test load: $\geq 1\,200$ Pa as defined by the manufacturer (for modules with "reduced design load" marking); 2 400 Pa (for modules without additional marking)

11.16 Static mechanical load test (MQT 16)

Replace:

This test of IEC 61215-2:2021 is applicable without modifications.

by:

This test of IEC 61215-2:2021 is applicable with the following modifications to Clause 4.

4 Test procedures

4.16 Static mechanical load test (MQT 16)

4.16.1 Purpose

Replace:

The minimum required design load per this standard is 1 600 Pa, resulting in a minimum test load of 2 400 Pa.

by:

The minimum required design load per this document depends on the nameplate marking. For modules without special notification on the nameplate, the minimum design load is 1 600 Pa, resulting in a minimum test load of 2 400 Pa. For modules with the “reduced design load” notification on the nameplate and in the documentation, the minimum design load is 800 Pa, which results in a minimum test load of 1 200 Pa.

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**MODULES PHOTOVOLTAÏQUES (PV)
POUR APPLICATIONS TERRESTRES –
QUALIFICATION DE LA CONCEPTION ET HOMOLOGATION –****Partie 1-3: Exigences particulières d'essai des
Modules photovoltaïques (PV) au silicium amorphe à couches minces****AMENDEMENT 1****AVANT-PROPOS**

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L'amendement 1 de l'IEC 61215-1-3:2021 a été établi par le comité d'études 82 de l'IEC: Systèmes de conversion photovoltaïque de l'énergie solaire.