

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Photovoltaic (PV) modules – Non-uniform snow load testing

Modules photovoltaïques (PV) – Essais de charges de neige non uniformes





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PHOTOVOLTAIC (PV) MODULES – NON-UNIFORM SNOW LOAD TESTING

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International Standard IEC 62938 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

The text of the International Standard is based on the following documents:

FDIS	Report on voting
82/1670/FDIS	82/1705/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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PHOTOVOLTAIC (PV) MODULES – NON-UNIFORM SNOW LOAD TESTING

1 Scope

This document provides a method for determining how well a framed PV module performs mechanically under the influence of inclined non-uniform snow loads. This document is applicable for framed modules with frames protruding beyond the front glass surface on the lower edge after intended installation and as such creates an additional barrier to snow sliding down from modules. For modules with other frame constructions, such as backrails formed in frames, on the side edges, on the top edge and on the lower edge not creating an additional snow slide barrier, this document is not applicable.

The test method determines the mechanical non-uniform-load limit of a framed PV module.

The loads specified in this document apply exclusively to natural snow load distributions. Any expected artificial accumulations (e.g. from snow removal or redistribution) are considered separately.

Methods to eliminate or counteract the occurrence of inhomogeneous snow accumulation, such as a steep installation angle (more than 60°), are not included in this document. This document assumes a relationship between ground snow-cover and module snow-cover which may not be applicable in locations where the snow does not completely melt between snow falls. This document does not consider the effect of snow cover on power generation.

While the test method includes a wait time between load steps, the document does not provide a complete assessment of the fatigue behaviour of the materials of the module, such as front glass.

Because typical field failures of PV modules caused by snow load show glass breakage and frame bending, the test method aims at reproducing the load under which such failures occur.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC TS 6090-13:2018, *Photovoltaic devices – Part 13: Electroluminescence of photovoltaic modules*

IEC 61215-1:2016, *Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 1: Test requirements*

IEC 61215-2:2016, *Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 2: Test procedures*

IEC TS 61836, *Solar photovoltaic energy systems – Terms, definitions and symbols*

IEC TS 62915, *Photovoltaic (PV) modules – Type approval, design and safety qualification – Retesting*