

TECHNICAL SPECIFICATION



Measurement procedures for materials used in photovoltaic modules – Part 2: Polymeric materials – Frontsheets and backsheets



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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**MEASUREMENT PROCEDURES FOR MATERIALS
USED IN PHOTOVOLTAIC MODULES –****Part 2: Polymeric materials – Frontsheets and backsheets**

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IEC TS 62788-2 has been prepared by IEC Technical Committee 82: Solar photovoltaic energy systems. It is a Technical Specification.

This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) With revision of IEC 61730-1 the requirements for the polymeric front- and backsheet have been moved from IEC 61730-1 into IEC 62788-2-1. This is reflected accordingly.
- b) The tensile testing method has been refined based on findings of round robin tests, including updated drawings.
- c) A thermal pre-exposure method has been introduced to be equivalent to the thermal effects of a "lamination" cycle. This pre-exposure defines the "fresh" state of the front- or backsheet in final application for evaluation of changes in ageing tests. For practical reasons, an oven exposure has been defined as an equivalent test.

- d) The multiple functions of the lamination protrusion test (previously DTI test) have been clarified, to identify and measure RUI layer thickness as well as to identify layers for which the comparative tracking index (CTI) needs to be determined. Also the content of IEC 62788-2-1 has been updated, by which the lamination protrusion test and MST 04 are additionally set in perspective to each other via engineering judgement.
- e) The DC breakdown voltage test method has been updated and the option to perform a withstand voltage test has been added (to reduce the required measurement voltage). The correction of DC breakdown voltage (V_{BD}) measurements, needed in the presence of non-RUI layers and after the lamination protrusion test, has been defined more precisely.
- f) Details for thickness measurement have been added (engineered surface roughness due to embossing).
- g) The adhesion test methods have been reviewed and updated. The single cantilevered beam test has been added. Figures have been updated to align with IEC 62788-1-1.
- h) The thermal failsafe test has been added as a test method based on discussion in the parallel project for IEC 62788-2-1. The test method offers a single temperature-point evaluation to include elongation at break to the thermal endurance evaluation.
- i) A sequential UV/TC test ("solder bump test") has been added.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
82/2109/DTS	82/2169/RVDTS

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 Technical Specification 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/publications.

A list of all parts in the IEC 62788 series, published under the general title *Measurement procedures for materials used in photovoltaic modules*, 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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