

INTERNATIONAL STANDARD

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**Measurement procedures for materials used in photovoltaic modules –
Part 5-1: Edge seals – Suggested test methods for use with edge seal materials**

**Procédures de mesure des matériaux utilisés dans les modules
photovoltaïques –
Partie 5-1: Joints d'étanchéité périphériques – Méthodes d'essai suggérées
pour l'utilisation des matériaux de joints d'étanchéité périphériques**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MEASUREMENT PROCEDURES FOR MATERIALS
USED IN PHOTOVOLTAIC MODULES –**

**Part 5-1: Edge seals –
Suggested test methods for use with edge seal materials**

FOREWORD

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IEC 62788-5-1 edition 1.1 contains the first edition (2020-03) [documents 82/1658/FDIS and 82/1689/RVD] and its amendment 1 (2022-01) [documents 82/1973/FDIS and 82/1991/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 62788-5-1 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

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

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 the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under webstore.iec.ch in the data related to the specific publication. At this date, the publication will be

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MEASUREMENT PROCEDURES FOR MATERIALS USED IN PHOTOVOLTAIC MODULES –

Part 5-1: Edge seals – Suggested test methods for use with edge seal materials

1 Scope

This part of IEC 62788 provides procedures for standardized test methods for evaluating the properties of materials designed to be used as edge seals. When modules are constructed with impermeable (or extremely low permeability) front- and backsheets designed to protect moisture-sensitive photovoltaic (PV) materials, there is still the possibility for moisture to get in from the sides. This moisture ingress pathway can be restricted by using a low-diffusivity material around the perimeter of a module between the impermeable front- and backsheets. Alternatively, it can be desirable to use a low-diffusivity encapsulant, which may significantly reduce moisture ingress over the lifetime of the module, and to evaluate it in a similar way to an edge seal material.

In addition to restricting moisture ingress, edge seal materials also provide electrical insulation. To perform these functions, edge seal materials are relied upon to adhere well.

The test methods described in this document are intended to be used to standardize the way edge seals are evaluated. The use of tests in this document does not evaluate compatibility with other materials or appropriateness for a given technology. Only some of these tests are applied for IEC 61215 and IEC 61730, and that status depends on the specific design. It is not required that all of these tests be performed, but that if these measurements are made that they be performed as outlined here.

2 Normative references

The following documents are referenced 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 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60243-1:2013, *Electrical strength of insulating materials – Test methods – Part 1: Tests at power frequencies*

IEC 60243-2:2013, *Electrical strength of insulating materials – Test methods – Part 2: Additional requirements for tests using direct voltage*

IEC 60216-5, *Electrical insulating materials – Thermal endurance properties – Part 5: Determination of relative thermal endurance index (RTE) of an insulating material*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*