Measurement procedures for materials used in photovoltaic modules - Part 6-2: General tests - Moisture permeation testing of polymeric materials

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62788-6-2:2020 sisaldab Euroopa standardi EN IEC 62788-6-2:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62788-6-2:2020 consists of the English text of the European standard EN IEC 62788-6-2:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.05.2020.	Date of Availability of the European standard is 08.05.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 27.160

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62788-6-2

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English Version

Measurement procedures for materials used in photovoltaic modules - Part 6-2: General tests - Moisture permeation testing of polymeric materials (IEC 62788-6-2:2020)

Procédures de mesure des matériaux utilisés dans les modules photovoltaïques - Partie 6-2: Essais génériques - Essais de perméation à l'humidité des matériaux polymères (IEC 62788-6-2:2020)

Messverfahren für Werkstoffe, die in Photovoltaik-Modulen verwendet werden - Teil 6-2: Allgemeine Prüfungen - Permeationsprüfung mit polymeren Materialien (IEC 62788-6-2:2020)

This European Standard was approved by CENELEC on 2020-04-23. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 82/1659/FDIS, future edition 1 of IEC 62788-6-2, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62788-6-2:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-01-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-04-23

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62788-6-2:2020 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61730-1	NOTE	Harmonized as EN IEC 61730-1

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
ISO 2528	-	Sheet materials - Determination of water vapour transmission rate - Gravimetric (dish) method	-	-
ISO 9932	-	Paper and board - Determination of water vapour transmission rate of sheet materials - Dynamic sweep and static gas methods	-	-
ISO 15106-1	-	Plastics - Film and sheeting - Determination of water vapour transmission Rate - Part 1: Humidity detection sensor method	EN ISO 15106-1	-
ISO 15106-2	-	Plastics - Film and sheeting - Determination of water vapour transmission Rate - Part 2: Infrared detection sensor method	EN ISO 15106-2	-
ISO 15106-3	-	Plastics - Film and sheeting - Determination of water vapour transmission Rate - Part 3: Electrolytic detection sensor method	EN ISO 15106-3	-
ISO 15106-4	-	Plastics - Film and sheeting - Determination of water vapour transmission Rate - Part 4: Gas-chromatographic detection sensor method	-	-
IEC/TS 61836	-	Solar photovoltaic energy systems - Terms, definitions and symbols	-	-
ASTM F1249-06	-	Standard test method for water vapour transmission rate through plastic film and sheeting using a modulated infrared sensor	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MEASUREMENT PROCEDURES FOR MATERIALS USED IN PHOTOVOLTAIC MODULES –

Part 6-2: General tests – Moisture permeation testing of polymeric materials

FOREWORD

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International Standard IEC 62788-6-2 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

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

FDIS	Report on voting
82/1659/FDIS	82/1690/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.

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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This part of IEC 62788 describes methods to measure the permeation properties of polymeric materials. The degradation of PV modules is known to go through many different corrosion processes. These degradation processes may depend upon moisture ingress into the encapsulant, edge seal, frontsheet, or backsheet materials. Typical polymeric materials used include (amongst other polymers) ethylene-vinyl acetate (EVA) and polyolefins for encapsulants, polyisobutylene (PIB) for edge seals, and polyethylene terephthalate (PET), polyvinyl fluoride (PVF), or polyvinylidine fluoride (PVDF) for backsheets. Therefore, knowing the moisture permeation characteristics of polymeric materials is relevant for module design. These properties can be determined as a function of temperature and relative humidity. With these parameters, simple scaling rules for time and distance can be used to extrapolate to the use environments.