IEC 62788-1-5

Edition 1.0 2016-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Measurement procedures for materials used in photovoltaic modules – Part 1-5: Encapsulants – Measurement of change in linear dimensions of sheet encapsulation material resulting from applied thermal conditions

Procédures de mesure des matériaux utilisés dans les modules photovoltaïques – Partie 1-5: Encapsulants – Mesurage de la variation des dimensions linéaires des matériaux d'encapsulation en couches minces résultant des conditions thermiques appliquées

IEC 62788-1-5:2016-06(en-fr)

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CONTENTS

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MEASUREMENT PROCEDURES FOR MATERIALS USED IN PHOTOVOLTAIC MODULES –

Part 1-5: Encapsulants – Measurement of change in linear dimensions of sheet encapsulation material resulting from applied thermal conditions

FOREWORD

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

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

FDIS	Report on voting
82/1114/FDIS	82/1134/RVD

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

This publication 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 publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,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

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MEASUREMENT PROCEDURES FOR MATERIALS USED IN PHOTOVOLTAIC MODULES –

Part 1-5: Encapsulants – Measurement of change in linear dimensions of sheet encapsulation material resulting from applied thermal conditions

1 Scope

This part of IEC 62788 provides a method for measuring the maximum representative change in linear dimensions of encapsulation sheet material in an unrestricted thermal exposure as might or might not be seen during photovoltaic (PV) module fabrication. The standard does not take into account any resulting stresses which may develop due to restricted dimensional changes or friction during module fabrication.

Data obtained using this method may be used by encapsulation material manufacturers for the purpose of quality control of their encapsulation material as well as for reporting in product datasheets. Data obtained using this method may be used by PV module manufacturers for the purpose of material acceptance, process development, design analysis, or failure analysis.

This method may also be used to examine other materials, such as backsheets and frontsheets as described in IEC 62788-2. Certain details of the test (including specimen size and substrate) are specified for that application in 62788-2.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60216-4-1, *Electrical insulating materials – Thermal endurance properties – Part 4-1: Ageing ovens – Single-chamber ovens*

ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*

ISO 291:2008, *Plastics – Standard atmospheres for conditioning and testing*

ISO 11357-2:2013, *Plastics – Differential scanning calorimetry (DSC) – Part 2: Determination of glass transition temperature and glass transition step height*

ISO 11357-3:2011, *Plastics – Differential scanning calorimetry (DSC) – Part 3: Determination of temperature and enthalpy of melting and crystallization*

ASTM C778–06, *Standard specification for standard sand*

3 Principle

Encapsulation material (in sheet form) may change dimensions when processed during the fabrication of a PV module. The change in dimensions is typically caused by stresses formed