

Photovoltaics in buildings - Part 1: BIPV modules

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Photovoltaics in buildings - Part 1: BIPV modules

Éléments photovoltaïques dans la construction - Partie 1:
Modules photovoltaïques incorporés au bâti

Photovoltaik im Bauwesen - Teil 1: BIPV-Module

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European foreword

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The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-10-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2018-10-05

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1 Scope

This document applies to photovoltaic modules used as construction products. It focuses on the properties of these photovoltaic modules relevant to essential building requirements as specified in the European Construction Product Regulation CPR 305/2011, and the applicable electro-technical requirements as stated in the Low Voltage Directive 2006/95/EC / or CENELEC standards. This document references international standards, technical reports and guidelines. For some applications in addition national standards (or regulations) for building products may apply in individual countries, which are not explicitly referenced here and for which harmonized European Standards are not yet available.

The document is addressed to manufacturers, planners, system designers, installers, testing institutes and building authorities.

This document does not apply to concentrating or building-attached photovoltaic modules.¹

This document addresses requirements on the PV modules in the specific ways they are intended to be mounted but not the mounting structure itself, which is within the scope of EN 50583-2.

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.

EN 410, *Glass in building — Determination of luminous and solar characteristics of glazing*

EN 673, *Glass in building — Determination of thermal transmittance (U value) — Calculation method*

EN 674, *Glass in building — Determination of thermal transmittance (U value) — Guarded hot plate method*

EN 675, *Glass in building — Determination of thermal transmittance (U value) — Heat flow meter method*

prEN 1279-5, *Glass in building — Insulating glass units — Part 5: Evaluation of conformity*

EN 1990, *Eurocode: Basis of structural design*

EN 1991 (all parts), *Eurocode 1: Actions on structures*

EN 1993 (all parts), *Eurocode 3: Design of steel structures*

EN 1999 (all parts), *Eurocode 9: Design of aluminium structures*

EN 12179, *Curtain walling — Resistance to wind load — Test method*

prEN 12488, *Glass in buildings — Glazing recommendations — Assembly principles for vertical and sloping glazing*

EN 12519, *Windows and pedestrian doors — Terminology*

EN 12600, *Glass in building — Pendulum test — Impact test method and classification for flat glass*

EN 12758, *Glass in building — Glazing and airborne sound insulation — Product descriptions and determination of properties*

¹ For the definition of building-attached photovoltaic modules refer to 3.2

- EN 13022 (all parts), *Glass in building — Structural sealant glazing*
- EN 13116, *Curtain walling — Resistance to wind load — Performance requirements*
- EN 13119, *Curtain walling — Terminology*
- EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*
- EN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*
- EN 13501-5, *Fire classification of construction products and building elements — Part 5: Classification using data from external fire exposure to roofs tests*
- EN 13830, *Curtain walling — Product standard*
- EN 13956, *Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*
- EN 14351-1, *Windows and doors — Product standard, performance characteristics — Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics*
- EN 14449, *Glass in building — Laminated glass and laminated safety glass — Evaluation of conformity/ Product standard*
- EN 14500, *Blinds and shutters — Thermal and visual comfort — Test and calculation methods*
- EN 14782, *Self-supporting metal sheet for roofing, external cladding and internal lining — Product specification and requirements*
- EN 14783, *Fully supported metal sheet and strip for roofing, external cladding and internal lining — Product specification and requirements*
- EN 15804, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*
- CEN/TR 15941, *Sustainability of construction works — Environmental product declarations — Methodology for selection and use of generic data*
- EN 15942, *Sustainability of construction works — Environmental product declarations — Communication format business-to-business*
- EN 15978, *Sustainability of construction works — Assessment of environmental performance of buildings — Calculation method*
- EN 16002, *Flexible sheets for waterproofing — Determination of the resistance to wind load of mechanically fastened flexible sheets for roof waterproofing*
- EN 50380, *Datasheet and nameplate information for photovoltaic modules*
- EN 61082-1, *Preparation of documents used in electrotechnology — Part 1: Rules (IEC 61082-1)*
- EN 61215, *Crystalline silicon terrestrial photovoltaic (PV) modules — Design qualification and type approval (IEC 61215)*
- EN 61646, *Thin-film terrestrial photovoltaic (PV) modules — Design qualification and type approval (IEC 61646)*

EN 61730-1, *Photovoltaic (PV) module safety qualification — Part 1: Requirements for construction (IEC 61730-1)*

EN 61730-2, *Photovoltaic (PV) module safety qualification — Part 2: Requirements for testing (IEC 61730-2)*

CLC/TS 61836, *Solar photovoltaic energy systems — Terms, definitions, symbols (IEC/TS 61836)*

EN 62446, *Grid connected photovoltaic systems — Minimum requirements for system documentation, commissioning tests and inspection (IEC 62446)*

EN 82079-1, *Preparation of instructions for use — Structuring, content and presentation — Part 1: General principles and detailed requirements (IEC 82079-1)*

EN ISO 12543-1, *Glass in building — Laminated glass and laminated safety glass — Part 1: Definitions and description of component parts (ISO 12543-1)*

EN ISO 12543-2, *Glass in building — Laminated glass and laminated safety glass — Part 2: Laminated safety glass (ISO 12543-2)*

EN ISO 12543-3, *Glass in building — Laminated glass and laminated safety glass — Part 3: Laminated glass (ISO 12543-3)*

EN ISO 12543-4, *Glass in building — Laminated glass and laminated safety glass — Part 4: Test methods for durability (ISO 12543-4)*

EN ISO 12543-5, *Glass in building — Laminated glass and laminated safety glass — Part 5: Dimensions and edge finishing (ISO 12543-5)*

EN ISO 12543-6, *Glass in building — Laminated glass and laminated safety glass — Part 6: Appearance (ISO 12543-6)*

EN ISO 12631, *Thermal performance of curtain walling — Calculation of thermal transmittance (ISO 12631)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1990, EN ISO 12543 (Parts 1 to 6), EN 12519, EN 13119, EN 13956, EN 14782, EN 14783, CLC/TS 61836, EN 13022, EN 16002 and the following apply.

Annex-specific definitions are included in the annexes themselves.

NOTE Additional information are provided in the Low Voltage Directive 2006/95/EC, the Construction Product Regulation 305/2011 and the Electromagnetic Compatibility Directive ECD 2004/108/EC.

3.1

Building-Integrated Photovoltaic modules

BIPV modules

photovoltaic modules are considered to be building-integrated, if the PV modules form a construction product providing a function as defined in the European Construction Product Regulation CPR 305/2011. Thus the BIPV module is a prerequisite for the integrity of the building's functionality. If the integrated PV module is dismantled (in the case of structurally bonded modules, dismantling includes the adjacent construction product), the PV module would have to be replaced by an appropriate construction product.

The building's functions in the context of BIPV are one or more of the following:

- mechanical rigidity or structural integrity
- primary weather impact protection: rain, snow, wind, hail