

**SLOVENSKI  
PREDSTANDARD**

**OSIST prEN 14963:2004**

julij 2004

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Roof coverings - Continuous rooflights of plastics with upstands - Classification, requirements and test methods

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ICS

English version

**Roof coverings - Continuous rooflights of plastics with upstands  
- Classification, requirements and test methods**

Eléments de couverture - Lanterneaux continus en matière  
plastique - Classification, spécifications et méthodes  
d'essais

Dachdeckungen - Dachlichtbänder aus Kunststoff zur  
Verwendung mit Aufsetzkränzen - Klassifizierung,  
Anforderungen und Prüfverfahren

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If this draft becomes a European Standard, CEN 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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (prEN 14963:2004) has been prepared by Technical Committee CEN/TC 128 “Roof covering products for discontinuous laying and products for wall cladding”, the secretariat of which is held by IBN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) 89/106.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

In this European Standard, annexes A, C and ZA are informative. Annex B is normative.

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## 1 Scope

This European Standard specifies requirements for continuous rooflights made of plastic materials (e. g. GF-UP, PC, PMMA, PVC) with or without bearing profiles to be used with upstands made of e. g. GF-UP, PVC, steel, aluminium, wood, concrete, for laying in roofs which serve the purpose of lighting by means of daylight and of ventilating interior spaces by means of opening devices.

This standard applies to continuous rooflights without upstand and to continuous rooflights, where a single manufacturer provides all components of the rooflight with upstand, which are bought in a single purchase. It applies to continuous rooflights when mounted with an inclination in longitudinal direction not more than 10° to the horizontal and not more than 10° in transversal direction (see Figure 1),

### a) with bearing profiles

- symmetrical, angled, curved (see Figure 2) or flat (see Figure 3);
- constructed with bearing profiles parallel to the span and with a rectangular ground plan;

### b) without bearing profiles

- symmetrical, angled or curved with an angle not more than 45° (measured to the horizontal at the line of fixation, see Figure 4);
- constructed with a span (width) lower than or equal 2,5 m and with a rectangular ground plan.

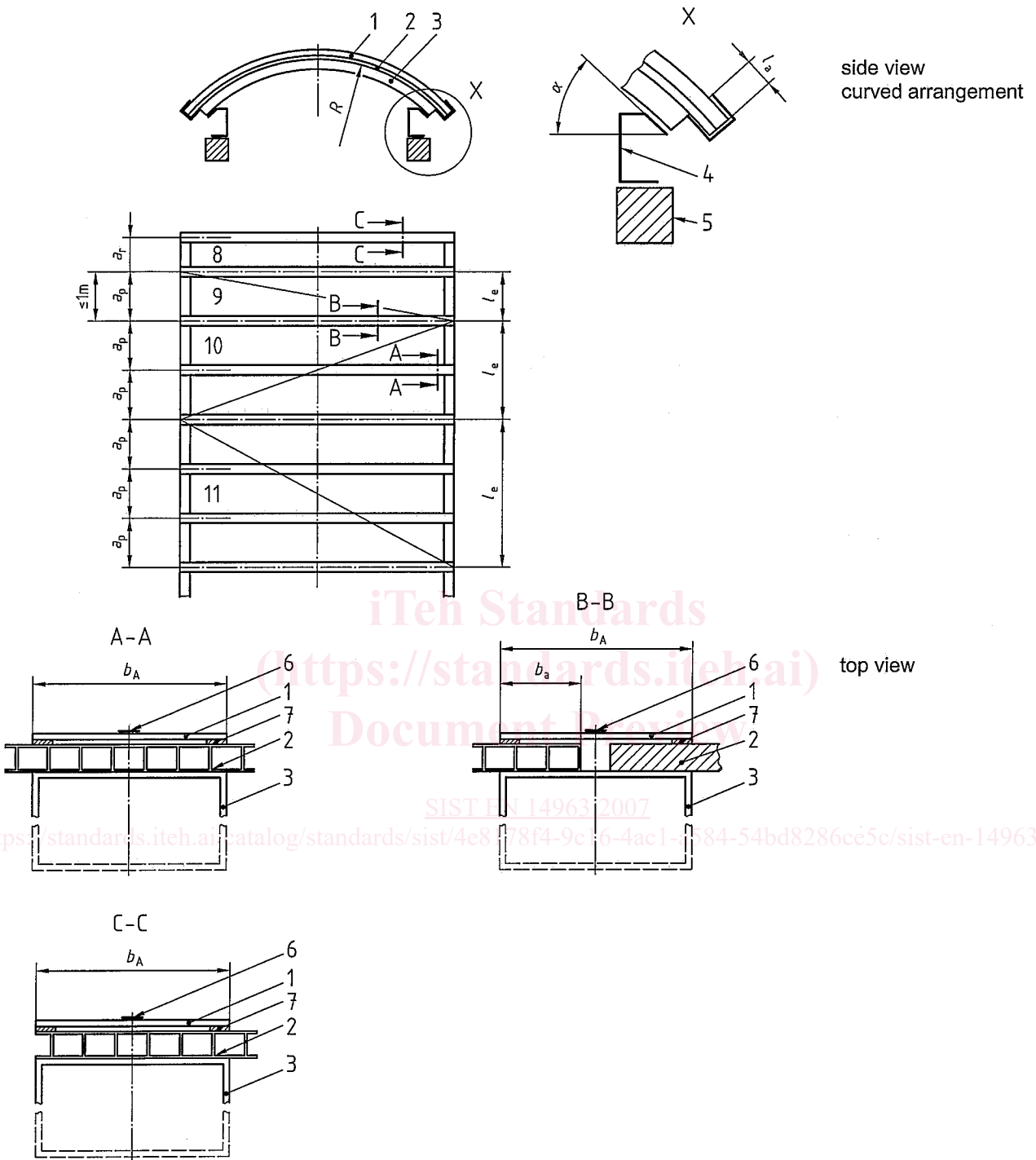
The design of the upstand is not part of this standard. Upstands can be prefabricated or site fabricated. Prefabricated upstands are to be considered as part of the rooflight. Site fabricated upstands are not covered by this standard.

This standard does not include calculation with regard to works, design requirements and installation techniques.

The possible additional functions of smoke and heat ventilation in case of fire, and/or roof access are outside the scope of this European Standard.

Rooflights outside of the scope of this standard are covered by EOTA ETA-Guideline 010 "Self supporting translucent roof kits".

**NOTE** Guidelines for safety, application, use and maintenance of continuous rooflights are presented in Annex A.



side view  
curved arrangement

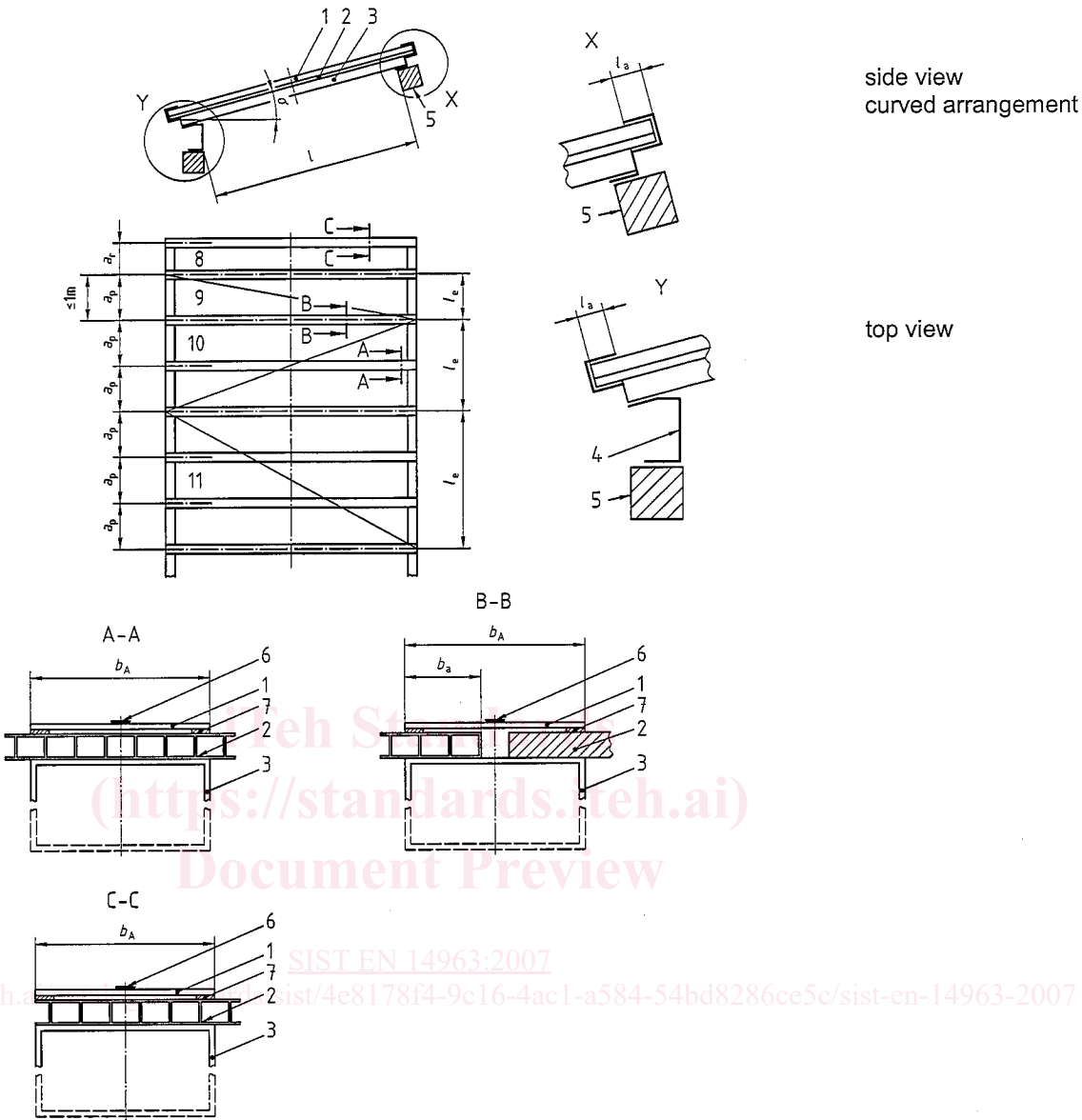
top view

**Key**

- 1 joint
- $b_e$  built-in width

Figure 1 — Range of inclination of rooflights without bearing profiles



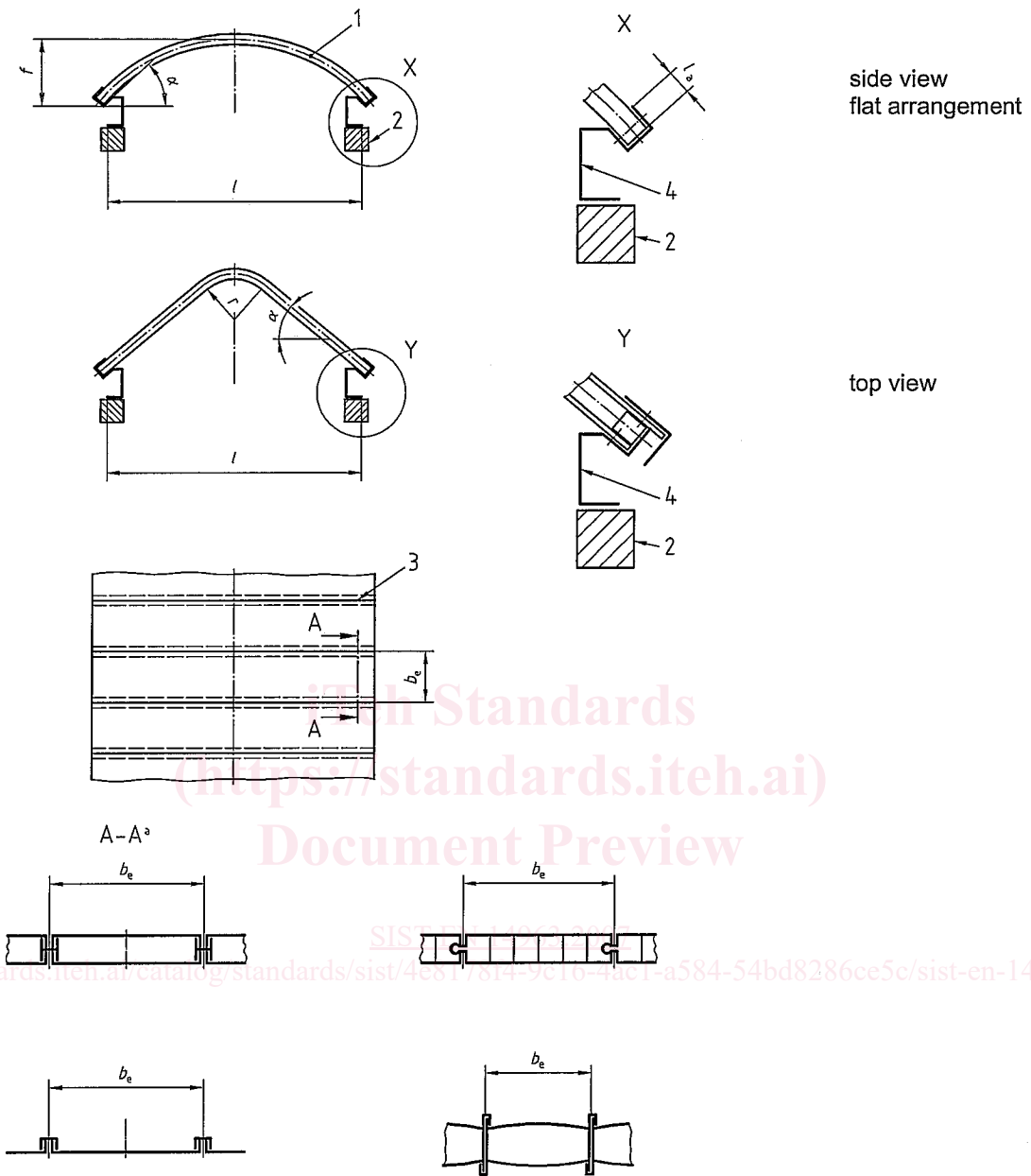


**Key**

- |    |                           |       |   |
|----|---------------------------|-------|---|
| 1  | covering profile          | $l_e$ | sheet width   |
| 2  | solid or multi-wall sheet | $l_a$ | supported length of the sheet                       |
| 3  | bearing profile           | $a_p$ | spacing of the bearing profiles (max 1 m)           |
| 4  | upstand                   | $a_r$ | spacing of the bearing profiles for marginal sheets |
| 5  | support                   | $b_A$ | width of the bearing profiles                       |
| 6  | screw                     | $b_a$ | supported width of the sheet                        |
| 7  | sealing profile           |       |   |
| 8  | marginal sheet            |       |   |
| 9  | single span sheet         |       |   |
| 10 | double span sheet         |       |   |
| 11 | triple span sheet         |       |   |

NOTE If drilled profiles should be avoided, e.g. in PMMA-sheets, the covering profiles in curved systems can be alternatively fixed at their end (similar to a tie member).

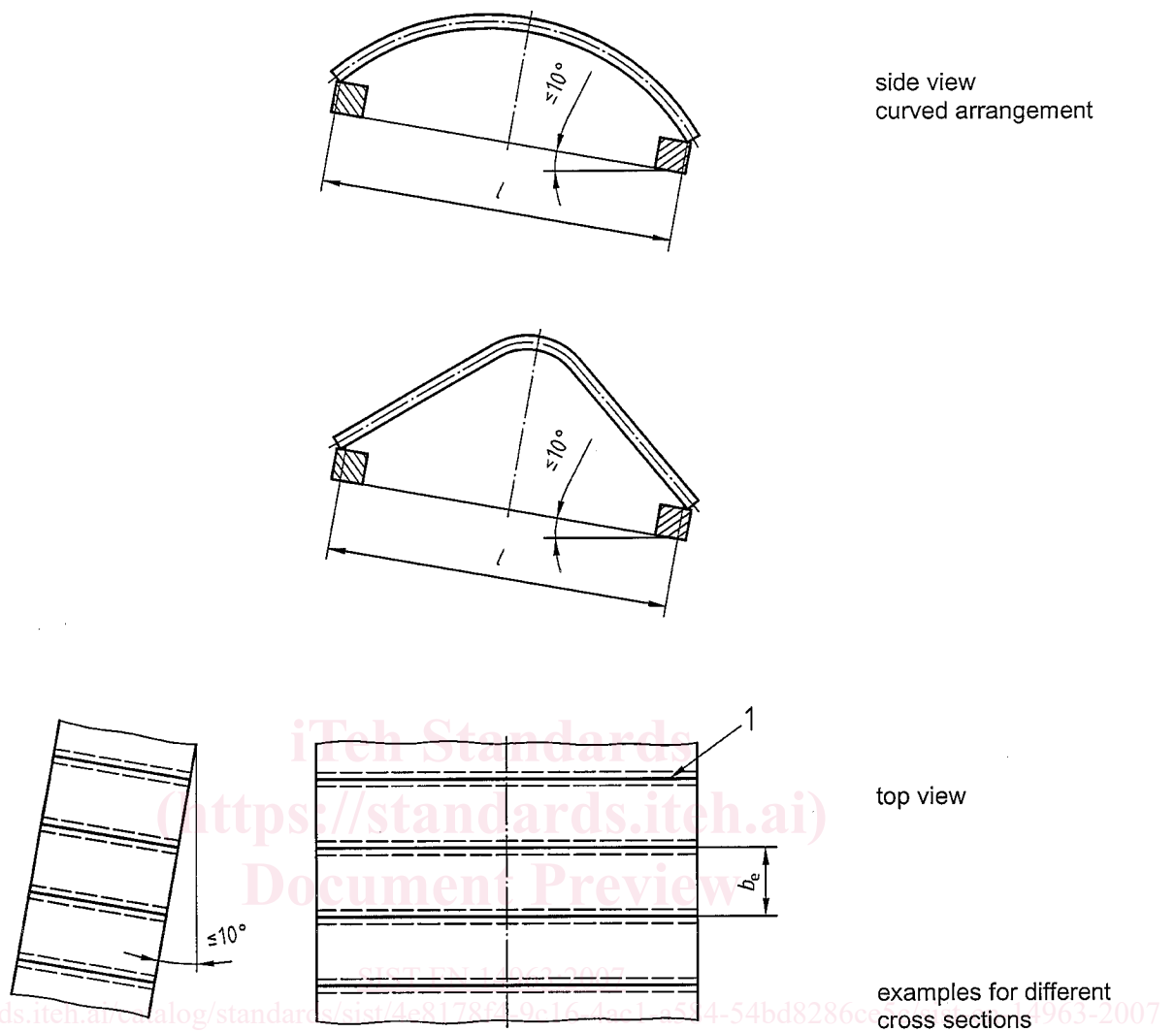
Figure 2 — Example for curved rooflights with bearing profiles single, double and triple span systems



**Key**

- |                             |   |
|-----------------------------|---|
| 1 covering profile          | $l_e$ sheet width   |
| 2 solid or multi-wall sheet | $l_a$ supported length of the sheet                       |
| 3 bearing profile           | $a_p$ spacing of the bearing profiles (max 1 m)           |
| 4 upstand                   | $a_r$ spacing of the bearing profiles for marginal sheets |
| 5 support                   | $b_A$ width of the bearing profiles                       |
| 6 screw                     | $b_a$ supported width of the sheet                        |
| 7 sealing profile           |   |
| 8 marginal sheet            |   |
| 9 single span sheet         |   |
| 10 double span sheet        |   |
| 11 triple span sheet        |   |

Figure 3 — Example for flat rooflights with bearing profiles, single, double and triple span systems



### Key

- |   |  |       |                               |
|---|--|-------|-------------------------------|
| 1 | single- or multi-layer sheets with joints parallel to the span | $b_e$ | built-in width                |
| 2 | support  | $l_a$ | supported length of the sheet |
| 3 | joint  |       |                               |
| 4 | upstand  |       |                               |
| 5 | support  |       |                               |

Figure 4 — Examples for curved rooflights without bearing profiles

## 2 Normative references

The following referenced documents are indispensable for the application 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.

EN 596, *Timber structures - Test methods - Soft body impact test of timber framed walls.*

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

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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*

EN 1013-1, *Light transmitting profiled plastic sheeting for single skin roofing - Part 1: General requirements and test methods.*

EN 1013-2, *Light transmitting profiled plastic sheeting for single skin roofing - Part 2: Specific requirements and test methods for sheets of glass fibre reinforced polyester resin (GRP).*

EN 1013-3, *Light transmitting profiled plastic sheeting for single skin roofing - Part 3: Specific requirements and test methods for sheets of polyvinyl chloride (PVC)*

EN 1013-4, *Light transmitting profiled plastic sheeting for single skin roofing - Part 4: Specific requirements, test methods and performance of polycarbonate (PC) sheets.*

EN 1013-5, *Light transmitting profiled plastic sheeting for single skin roofing - Part 5: Specific requirements, test methods and performance of polymethylmethacrylate (PMMA) sheets.*

ENV 1187:2001, *Test methods for external fire exposure to roofs*

prEN 1994-1-1, *Design of composite steel and concrete structures - Part 1-1: General rules and rules for buildings*

EN ISO 6946, *Building components and building elements - Thermal resistance and thermal transmittance - Calculation method*

EN ISO 10211-1, *Thermal bridges in building construction - Heat flows and surface temperatures - General calculation methods*

EN ISO 10211-2, *Thermal bridges in building construction - Heat flows and surface temperatures - Linear thermal bridges*

EN ISO 10456, *Building materials and products - Procedures for determining declared and design thermal values*

EN 12153, *Curtain walling - Air permeability - Test method.*

prEN ISO 12567-2, *Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 2: Roof windows and other projecting windows*

EN 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using test 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 products for use in ventilation systems)*

prEN 13501-5, *Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roof test*

EN ISO 140-3, *Acoustics - Measurement of sound insulation in buildings and of building elements - Part 3: Laboratory measurements of airborne sound insulation of building elements*

EN ISO 178, *Plastics - Determination of flexural properties (ISO 178:1993).*

EN ISO 527-1, *Plastics - Determination of tensile properties - Part 1: General principles*

EN ISO 527-2, *Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics*

EN ISO 4892-1, *Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance*

EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon- arc sources*

EOTA ETA-Guideline 010 "Self supporting translucent roof kits"

EN ISO 12017, *Plastics – Poly(methylmethacrylate) double- and triple- skin sheets - Test methods*

EN ISO 13468-1, *Plastics - Determination of the total luminous transmittance of transparent materials - Part 1: Single-beam instrument*

ISO 13468-2, *Plastics - Determination of the total luminous transmittance of transparent materials - Part 2: Double-beam instrument*

EN ISO 14125, *Fibre-reinforced plastic composites – Determination of flexural properties*

prEN ISO 14653, *Thermal bridges in building construction - Heat flows and surface temperatures –General calculation method*

EN ISO 9001, *Quality management systems - Requirements*

### 3 Definitions

For the purposes of this European Standard, the following terms and definitions apply.

#### 3.1

##### **continuous plastic rooflight element**

glazing element which is manufactured to be self-supporting or non-self-supporting. It consists of one or several, translucent or transparent, flat or profiled skins made of solid or structured sheets, cold bended or not. It may require junction profiles for watertightness.

#### 3.2

##### **self-supporting glazing element**

element in accordance with 3.1 which does not require any bearing profile. It transmits the applied loads to the upstand

#### 3.3

##### **non- self-supporting glazing element**

element in accordance with 3.1 which requires two or more bearing profiles

#### 3.4

##### **bearing profile**

element which consists of single or several profiles on which the glazing elements are fitted and which transmits the applied loads to the upstand

#### 3.5

##### **gable end**

vertical or pitched termination of a continuous rooflight

#### 3.6

##### **upstand**

element which is single- or multi-walled or composite with vertical and/or pitched walls; with or without thermal insulation, providing an area for the fixture of plastic rooflights and/or bearing profiles and for connection to the

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substructure, the roof covering or the roof sealing. The upstand transmits into the substructure the loads acting upon the continuous rooflight elements. Upstands may include ventilation devices

### 3.7

#### material type

chemical constituency of the product, geometry, weight per unit area and manufacturers name

### 3.8

#### ventilation panel

unit integrated into a continuous rooflight which enables its opening for ventilation purposes

### 3.9

#### accessories

Connections, opening and locking devices and seals for the assembly of the elements according to 3.1 to 3.8

### 3.10

#### batch

a quantity of material made in a single operation, or in the case of continuous production for a defined quantity which shall be demonstrated by the producer to have a uniform composition

## 4 Symbols and abbreviations

$C_c$	Change in light transmission expressed in %
$\Delta Y_I$	Change in the yellowness index
$H_c$	Energy applied during ageing procedure
$L_s$	Light transmission of a test piece
$L_{sn}$	Light transmission of the $n$ th test piece
$\tau_{D65}$	Total luminous transmittance for the CIE-standard illuminant $D_{65}$ expressed in %
$M_s$	Average of $R_1$ and $R_3$
$M_v$	Light transmission of the sample
$R$	Thermal resistance in $m^2.K/W$
$R_1$ and $R_3$	Reading of galvanometer without any test piece
$R_2$	Reading of galvanometer with the test piece
$R_w$	Airborne sound index in dB
$U$	Heat transmittance $W/m^2.K$
$Y_I$	Value of the yellowness index of aged test piece
$Y_{I_0}$	Value of the yellowness index of unaged test piece
$\Delta E$	Variation of E-modulus expressed in %
$\Delta \sigma$	Variation of strength expressed in %
$X_{CIE}, Y_{CIE}, Z_{CIE}$	Colourimetric coordinates