

**Valgustläbilaskvast profiilplastist plaadid katuse-, seina- ja laematerjalina. Nõuded ja katsemeetodid.**

**Light transmitting single skin profiled plastics sheets for internal and external roofs, walls and ceilings - Requirements and test methods**

## EESTI STANDARDI EESSÕNA

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Supersedes EN 1013-1:1997, EN 1013-2:1998, EN 1013-3:1997, EN 1013-4:2000, EN 1013-5:2000

English Version

## Light transmitting single skin profiled plastics sheets for internal and external roofs, walls and ceilings - Requirements and test methods

Plaques d'éclairage profilées, simple paroi, en matière plastique, pour toitures, bardages et plafonds intérieurs et extérieurs - Exigences et méthodes d'essai

Lichtdurchlässige, einschalige profilierte Platten aus Kunststoff für Innen- und Außenanwendungen an Dächern, Wänden und Decken - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 20 October 2012.

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## Foreword

This document (EN 1013:2012) 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 NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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

This document supersedes EN 1013-1:1997, EN 1013-2:1998, EN 1013-3:1997, EN 1013-4:2000 and EN 1013-5:2000.

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).

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

This revision is a merger of EN 1013-1:1997, EN 1013-2:1998, EN 1013-3:1997, EN 1013-4:2000 and EN 1013-5:2000. The main changes are as follows:

- a complete technical review of requirements and test methods, based on the essential characteristics given in Mandates M/121 and M/122;
- a technical review of the artificial ageing procedure based on the current test methods, with the possibility to use either the exposition to arc-xenon lamps or to fluorescence UV lamps;
- a technical review of the impact resistance of the sheets: in addition to the existing small hard body impact resistance, test methods for assessing the large soft body impact resistance have been added;
- introduction of new subclauses for the reaction to fire and external fire performance;
- a review of the flexural/tensile strength and the resistance to deflection;
- deletion of the hail resistance;
- introduction of a new clause dealing with evaluation of conformity;
- introduction of an informative Annex ZA giving the clauses of this European Standard addressing the provisions of the EU Construction Products Directives.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

This document describes the requirements and test methods for light transmitting single skin profiled plastics sheets.

The physical properties of light transmitting single skin profiled plastics sheets differ from bituminous, metal and fibre reinforced cement sheets, as defined in EN 534 [1], EN 506 [2], EN 508-1 [3], EN 508-2 [4], EN 508-3 [5] and EN 494 [6]. They do not necessarily have the same span capabilities and alternative fixing specifications are generally required.

Reference should be made to national regulations and the manufacturer's literature for requirements concerning design, storage and installation, including all safety aspects, according to the material.

## 1 Scope

This European Standard specifies the requirements for light transmitting single skin profiled plastics sheets for internal and external walls, roofs and ceilings. It is applicable to single skin sheets which are used as a single layer or when assembled to form a multiple layer construction.

It also specifies the test methods and provides for the evaluation of conformity and marking of the sheets.

## 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 59, *Glass reinforced plastics — Measurement of hardness by means of a Barcol impressor*

CEN/TS 1187:2012, *Test methods for external fire exposure to roofs*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13501-5, *Fire classification of construction products and building elements — Part 5: Classification using data from external fire exposure to roofs tests*

EN 13823:2010, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 178, *Plastics — Determination of flexural properties (ISO 178)*

EN ISO 472:2001, *Plastics — Vocabulary (ISO 472:1999)*

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

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

EN ISO 527-4, *Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites (ISO 527-4)*

EN ISO 1043-1:2011, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1:2011)*

EN ISO 1043-2:2011, *Plastics — Symbols and abbreviated terms — Part 2: Fillers and reinforcing materials (ISO 1043-2:2011)*

EN ISO 1172:1998, *Textile-glass-reinforced plastics — Prepregs, moulding compounds and laminates — Determination of the textile-glass and mineral-filler content — Calcination methods (ISO 1172:1996)*

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 4892-3:2006, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3:2006)*

EN ISO 6603-1, *Plastics — Determination of puncture impact behaviour of rigid plastics — Part 1: Non-instrumented impact testing (ISO 6603-1)*



EN ISO 9001:2008, *Quality management systems — Requirements (ISO 9001:2008)*

EN ISO 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers (ISO 11664-1)*

EN ISO 11664-2:2011, *Colorimetry — Part 2: CIE standard illuminants (ISO 11664-2:2007)*

EN ISO 11925-2:2010, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2010)*

EN ISO 12572, *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties (ISO 12572)*

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

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

EN ISO 14125, *Fibre-reinforced plastic composites — Determination of flexural properties (ISO 14125)*

ISO 11359-2, *Plastics — Thermomechanical analysis (TMA) — Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ETAG 010, *Self supporting translucent roof kits*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 472:2001, EN ISO 1043-1:2011, EN ISO 1043-2:2011 and Annex A and the following apply.

#### 3.1

##### **indirect test (IT)**

test performed by the manufacturer, different from that specified for that particular characteristic, having verified its correlation with the specified test

#### 3.2

##### **yellowness**

deviation in chroma from whiteness or water-whiteness in the dominant wavelength range from 570 nm to 580 nm

#### 3.3

##### **yellowness index**

magnitude in yellowness relative to CIE standard illuminant D 65

#### 3.4

##### **radiant exposure**

##### **H**

time integral of irradiance, measured in joules per square metre ( $J \cdot m^{-2}$ )

[SOURCE: ISO 9370:1997] [7]

### 4 Symbols and abbreviations

#### 4.1 Symbols

$A_n$  class for the exposure to artificial accelerated weathering using xenon-arc lamps