SLOVENSKI STANDARD
SIST EN 16477-1:2017

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Steklo v gradbeništvu - Barvano steklo za notranjo uporabo - 1. del: Zahteve

Glass in building - Painted glass for internal use - Part 1: Requirements

Glas im Bauwesen - Farbiges Glas für den Innenbereich - Teil 1: Anforderungen

Verre dans la construction - Verre peint pour usage intérieur - Partie 1 : Exigences

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EUROPEAN STANDARD

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Glass in building - Painted glass for internal use - Part 1: Requirements

Verre dans la construction - Verre laqué destiné à un usage à l'intérieur - Partie 1 : Exigences

Glas im Bauwesen - Farbiges Glas für den Innenbereich - Teil 1: Anforderungen

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 16477-1:2016) has been prepared by Technical Committee CEN/TC 129 “Glass in Building”, 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of an identical text or by endorsement, at the latest by June 2017, and conflicting national standards shall be withdrawn at the latest by June 2017.

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1 Scope

This European Standard specifies minimum quality requirements (in respect of optical, visual and edge faults) and durability tests for painted glass for internal use in building.

This standard applies to testing of paints that can be used to produce painted glass. The test of durability are undertaken on soda lime silicate glass as being a representative substrate.

Painted glass that conforms to this standard, may have substrate as follows: basic glass, special basic glass, chemically strengthened basic glass, thermally treated basic and special basic glass, laminated glass or laminated safety glass.

The painted glass may be translucent, transparent or opaque and supplied in stock/standard sizes and as-cut finished sizes.

NOTE 1 Artistic products are excluded from the scope of this standard.

For painted glass used in aggressive and/or constantly high humidity atmospheres, e.g. horse riding halls, swimming pools, medical baths, saunas, etc. this standard is not applicable.

NOTE 2 Bathrooms and kitchens are not considered as constantly high humidity atmospheres.

This standard does not give requirements for framing, fixing or other support systems.

NOTE 3 Useful advice on these items is contained in the informative Annex C.

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 572-2, *Glass in building - Basic soda lime silicate glass products - Part 2: Float glass*

EN 572-8:2012+A1:2016, *Glass in building - Basic soda-lime silicate glass products - Part 8: Supplied and final cut sizes*

EN 1096-1, *Glass in building - Coated glass - Part 1: Definitions and classification*

EN 1748-1-1, *Glass in building - Special basic products -Borosilicate glasses - Part 1-1: Definition and general physical and mechanical properties*

EN 1748-2-1, *Glass in building - Special basic products - Glass ceramics - Part 2-1 Definitions and general physical and mechanical properties*

EN 1863-1, *Glass in building - Heat strengthened soda lime silicate glass - Part 1: Definition and description*

EN 12150-1, *Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: Definition and description*

EN 12337-1, *Glass in building - Chemically strengthened soda lime silicate glass - Part 1: Definition and description*

EN 13024-1, *Glass in building - Thermally toughened borosilicate safety glass - Part 1: Definition and description*

EN 14178-1, *Glass in building - Basic alkaline earth silicate glass products - Part 1: Float glass*

EN 14321-1, *Glass in building - Thermally toughened alkaline earth silicate safety glass - Part 1: Definition and description*

prEN 15681-1, *Glass in building - Basic alumino silicate glass products - Part 1: Definitions and general physical and mechanical properties*

EN 15682-1, *Glass in building - Heat soaked thermally toughened alkaline earth silicate safety glass - Part 1: Definition and description*

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 16474-2:2013, *Paints and varnishes - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 16474-2)*

EN ISO 11664-4, *Colorimetry - Part 4: CIE 1976 L*a*b* Colour space (ISO 11664-4)*

EN ISO 2409, *Paints and varnishes — Cross-cut test*

3 Terms and definitions

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

3.1
painted glass
flat glass whose rear surface has been coated with a paint

3.2
paint
organic coating covering glass

3.3
uniform paint
paint which are uniform in colour and reflection in an area of minimum one square centimetre and where colour and reflection are not angle dependant from 0° to 45° from vertical

3.4
non-uniform paint
paint which are not uniform

Note 1 to entry: examples of non-uniform paint are paint containing metallic particles, phosphorescent paint, thermochromic paint, etc.

3.5
glass substrate
basic glass, special basic glass, chemically strengthened basic glass, thermally treated basic and special basic glass, laminated glass or laminated safety glass

3.6
jumbo sizes
glass delivered in the following sizes:

– nominal length *H*: 4 500 mm, 5 100 mm or 6 000 mm;

– nominal width *B*: 3 210 mm

[SOURCE: EN 572-2:2012, 3.2]

Note 1 to entry: The usual width is 3 210 mm. Exceptional production requirements can cause this to be reduced but the nominal width is never below 3 150 mm.

3.7
stock/standard sizes
panes of painted glass supplied with as-cut edges which are intended for further processing

3.8
finished sizes
finished panes of painted float glass cut from stock/standard sizes which may be used as-cut or subject to further processing, e.g. edges working, drilling, face decoration etc

3.9
paint coating(s) faults
faults which are directly related to the paint coating, for example scratches, spot faults, and variation of colour or lack of adhesion of the paint coating

3.10
spot faults
punctual disturbance that can be observed from the glass side

Note 1 to entry: spot faults may come from a glass defect e.g. nuclei (solid or gaseous inclusions), deposits, crush marks or from a paint coating defect e.g. dust, pinhole, de-wetting

3.11
lack of adhesion point
spot fault where the paint is no longer adhered to the glass, detected in reflection as a more brilliant point

3.12
linear faults
scratches, extended spot faults etc. on the glass surface or on the paint, seen from the glass surface side

3.13
glass brush marks
very fine circular scratches that are barely visible and are associated with glass cleaning techniques

3.14
variation of colour
change of colour that may occur after an ageing test e.g. fading

3.15
edge defect
defect which can occur on the edge of a cut size piece in the form of entrant and emergent fault and/or bevel

[SOURCE: EN 572-8:2012+A1:2016, 3.13]

3.16
cluster
group of not less than 3 spot faults, separated by not more than 50 mm

[SOURCE: EN 1036-1:2007, 3.19]

3.17
halo
distortion zone around a spot fault

[SOURCE: EN 1036-1:2007, 3.20]

4 Materials

4.1 Glass products

4.1.1 General

The glass substrates used for the production of painted glass:

— shall be covered by Harmonized European Specifications (as defined in regulation EU 305/2011) as listed below or

— if not covered by Harmonized European Specifications demonstration shall be made that those glasses have a chemical composition and a mechanical stability over time equivalent to the requirements of the relevant standard listed.

4.1.2 Glass substrates

Painted glass when covered by Harmonized European Specifications, shall conform to:

— Soda lime silicate float glass conforming to EN 572-2;

— Special basic glass conforming to EN 1748-1-1, EN 1748-2-1, EN 14178-1, prEN 15681-1;

— Thermally treated glass conforming to EN 12150-1, EN 1863-1, EN 13024-1, EN 14321-1, EN 15682-1;

— Chemically strengthened basic glass conforming to EN 12337-1;

— Laminated glass or laminated safety glass conforming to EN ISO 12543-1;

— Coated glass conforming to EN 1096-1;

The glass substrate may also be acid-etched and sand blasted glass.

4.2 Paint coating(s)

The glass described in 4.1 shall be covered partially or completely by one or more paint layers.

5 Dimensional requirements

5.1 Thickness

The actual thickness shall be the average of four measurements, taken to the nearest 0,01 mm, one taken at the centre of each side. Measurement shall be performed by an appropriate instrument e.g. a calliper micrometre.

The nominal thickness of the painted product declared by the manufacturer is the nominal thickness of the substrate. The actual thickness, rounded to the nearest 0,1 mm shall not vary from the declared thickness by more than the tolerances of the substrate.

5.2 Length, width and squareness

5.2.1 Width B and length H

When painted glass sizes are quoted for rectangular panes, the first dimension shall be the width B and the second dimension the length H as shown in Figure 1.

Dimensions in millimetres

Key

H Length of rectangular pane

B Width of rectangular pane

l Direction of draw

Figure 1 — Relationship between length, width and direction of flaw

Each dimension shall be within the limit deviations specified.

5.2.2 Methods of measuring dimensions and squareness

The nominal dimensions for width B and length H being given, the pane shall not be larger than the nominal dimensions increased by the tolerance or smaller than the nominal dimensions reduced by the tolerance (see Figure 2).

The squareness of rectangular glass panes is expressed by the difference between its diagonals (see Figure 3). The difference between the two diagonals shall not be larger than the deviation mentioned in product standard corresponding to the glass substrate.