SLOVENSKI STANDARD
kSIST FprEN 15681-1:2015

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Steklo v gradbeništvu - Osnovni proizvodi iz aluminij-silikatnega stekla - 1. del: Definicije in splošne fizikalne in mehanske lastnosti

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

Glas im Bauwesen - Basiserzeugnisse aus Alumo-Silicatglas - Teil 1: Definitionen und allgemeine physikalische und mechanische Eigenschaften

Verre dans la construction - Produits de base : verre aluminosilicate - Partie 1 : Définitions et propriétés physiques et mécaniques générales

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81.040.20	Steklo v gradbeništvu	Glass in building

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

Verre dans la construction - Produits de base: Verres alumino silicaté - Partie 1: Définitions et propriétés physiques et mécaniques générales

Glas im Bauwesen - Basiserzeugnisse aus Alumo-Silicatglas - Teil 1: Definitionen und allgemeine physikalische und mechanische Eigenschaften

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (FprEN 15681-1:2015) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

This document is currently submitted to the Unique Acceptance Procedure.

This European Standard consists of the following parts:

— EN 15681-1 Glass in Building — Basic alumino silicate glass products — Part 1: Definitions and general physical and mechanical properties;

— EN 15681-2 Glass in Building — Basic alumino silicate glass products — Part 2: Evaluation of conformity / Product standard.

1 Scope

This Part of this European Standard specifies and classifies basic alumino silicate glass products, indicates their chemical composition, their main physical and mechanical characteristics, their dimensional and their minimum quality requirements (in respect of optical and visual faults).

This European Standard applies to basic alumino silicate glasses supplied in stock sizes, supplied sizes or in cut sizes for final end use.

This European Standard does not apply to final cut sizes having a dimension less than 100 mm or a surface area less than 0,05 m^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*

ISO 9385, *Glass and glass-ceramics — Knoop hardness test*

3 Terms and definitions

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

3.1
alumino silicate glass
silicate glass containing between 5,8 % to 16,2 % aluminium and with a chemical composition according to 4.1 of this standard

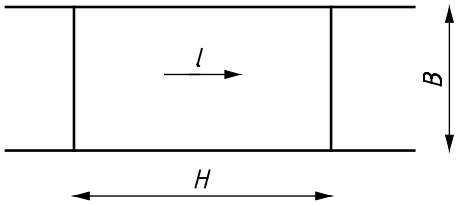
3.2
alumino silicate float glass
flat, transparent, clear or tinted alumino silicate glass having parallel and polished faces obtained by continuous casting and floatation on a metal bath

Note 1 to entry: In French called 'glace' and in German 'Floatglas'.

3.3
alumino silicate drawn sheet glass
flat, transparent or translucent, clear or tinted basic alumino silicate glass obtained by continuous drawing of a regular thickness and with the two surfaces fire polished

3.4
alumino silicate rolled glass
flat, transparent or translucent, clear or tinted basic alumino silicate glass obtained by rolling

3.5
length, H and width, B
defined with reference to the direction of draw of the glass ribbon as shown in Figure 1



Key

1 direction of draw

H length

B width

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

3.6
stock sizes
glass delivered in manufacturers standard stock sizes

3.7
supplied size
pane of glass that has been supplied either as raw material for further processing and/or cutting down to a size for installation

Note 1 to entry: This is a size that is outside the stock size.

3.8
final cut size
pane of glass that has been cut down to the dimensions being required either for installation or processing into a final product

Note 1 to entry: Examples of processed final products are insulating glass units and thermally toughened safety glass of those dimensions.

3.9
optical fault
fault which leads to distortions in the appearance of objects observed through the glass

3.10
visual fault
fault which alters the visual quality of the glass

Note 1 to entry: Visual faults include spot faults and linear / extended faults.

3.11
spot fault
spherical or quasi spherical fault which is produced by differing mechanisms, e.g. gaseous inclusion, solid inclusion, mark or deposit of small size

3.12
linear / extended faults
fault which can be on or in the glass, in the form of deposits, reams, marks or scratches that occupy an extended length or area

3.13
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

3.14
concentration
sum of the lengths of gaseous inclusions greater than 1,0 mm in any circle of 400 mm diameter

4 Chemical composition

4.1 General

The basic glass products covered by this European Standard are all manufactured from alumino silicate glass.

The magnitude of the proportions by mass of the constituents of alumino silicate glass covered by this standard is given in Table 1, see also Annex A

Table 1 — Magnitude of the proportions by mass of the constituents of alumino silicate glass

Constituents	Proportion by mass of element
Silicon (Si)	25,3 % to 35,1 %
Aluminium (Al)	5,8 % to 16,2 %
Σ Si + Al	32,1 % to 51,3 %
Lithium (Li)	0 % to 3,7 %
Sodium (Na)	0 % to 10,5 %
Calcium (Ca)	0 % to 2,1 %
Magnesium (Mg)	0 % to 5 %
Zinc (Zn)	0 % to 2,4 %
Potassium (K)	0 % to 7 %
Zirconium (Zr)	0 % to 3,0 %
Strontium (Sr)	0 % to 2,5 %
Barium (Ba)	0 % to 3,6 %
Other components[a]	0 % to 5 %
[a] Properties other than photometric characteristics shall not be significantly altered by these other components	

4.2 Tint

Body tinted glass is obtained by the addition of suitable materials.

5 Physical and mechanical characteristics

5.1 General characteristics

Conventional numerical values for the physical and mechanical characteristics of basic alumino silicate glass products excluding ‘Characteristic bending strength’ ($f_{g,kk}$) are given in Table 2. These values, for normal annealed glass without any further toughening, are not precise requirements with which the glass shall strictly comply, but are the generally accepted figures for use in calculations where a high degree of accuracy is not required.