



SLOVENSKI STANDARD
kSIST FprEN 572-1:2012
01-januar-2012

**Steklo v gradbeništvu - Osnovni izdelki iz natrij-kalcijevega silikatnega stekla - 1.
del: Definicije in splošne fizikalne in mehanske lastnosti**

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

Glas im Bauwesen - Basiserzeugnisse aus Kalk-Natronsilicatglas - Teil 1: Definitionen und allgemeine physikalische und mechanische Eigenschaften

Verre dans la construction - Produits de base: Verre de silicate sodo-calcique - Partie 1: Définitions et propriétés physiques et mécaniques générales

Ta slovenski standard je istoveten z: FprEN 572-1

ICS:

| | | |
|-----------|---|--|
| 01.040.81 | Steklarska in keramična industrija (Slovarji) | Glass and ceramics industries (Vocabularies) |
| 81.040.20 | Steklo v gradbeništvu | Glass in building |

kSIST FprEN 572-1:2012

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

FINAL DRAFT
FprEN 572-1

November 2011

ICS 81.040.20; 01.040.81

Will supersede EN 572-1:2004

English Version

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

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

Glas im Bauwesen - Basiserzeugnisse aus Kalk-Natronsilicatglas - Teil 1: Definitionen und allgemeine physikalische und mechanische Eigenschaften

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 129.

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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

| | |
|---|----|
| Foreword..... | 3 |
| 1 Scope | 4 |
| 2 Normative references | 4 |
| 3 Terms and definitions | 5 |
| 4 General principles..... | 5 |
| 5 Chemical composition | 5 |
| 5.1 General..... | 5 |
| 5.2 Tint | 6 |
| 6 Physical and mechanical characteristics..... | 6 |
| 6.1 General characteristics | 6 |
| 6.2 Characteristic bending strength ($f_{g,kk}$) | 7 |
| 6.3 Designation of clear glass | 7 |
| 6.3.1 General..... | 7 |
| 6.3.2 Clear transparent glass | 7 |
| 6.3.3 Clear translucent glass | 8 |
| 6.4 Stability of physical and chemical characteristics..... | 9 |
| 6.5 General quality criteria and their evaluation..... | 9 |
| 6.5.1 Optical..... | 9 |
| 6.5.2 Appearance | 9 |
| Bibliography..... | 10 |

Foreword

This document (FprEN 572-1:2011) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

This document will supersede EN 572-1:2004.

This document is currently submitted to the Unique Acceptance Procedure.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This European Standard “*Glass in building — Basic soda lime silicate glass products*” consists of the following parts:

- Part 1: Definitions and general physical and mechanical properties;
- Part 2: Float glass;
- Part 3: Polished wired glass;
- Part 4: Drawn sheet glass;
- Part 5: Patterned glass;
- Part 6: Wired patterned glass;
- Part 7: Wired or unwired channel shaped glass;
- Part 8: Supplied and final cut sizes;
- Part 9: Evaluation of conformity/Product standard.

FprEN 572-1:2011 (E)**1 Scope**

This Part of this European Standard specifies and classifies basic glass products, indicates their chemical composition, their main physical and mechanical characteristics and defines their general quality criteria.

Specific dimensions and dimensional tolerances, description of faults, quality limits and designation for each basic product type are not included in this Part, but are given in other Parts of this European Standard specific to each product type:

EN 572-2 Float glass

EN 572-3 Polished wired glass

EN 572-4 Drawn sheet glass

EN 572-5 Patterned glass

EN 572-6 Wired patterned glass

EN 572-7 Wired or unwired channel shaped glass

EN 572-8 Supplied and final cut sizes

EN 572-9 Evaluation of conformity/Product standard

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

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

EN 572-3, *Glass in building — Basic soda lime silicate glass products — Part 3: Polished wired glass*

EN 572-4, *Glass in building — Basic soda lime silicate glass products — Part 4: Drawn sheet glass*

EN 572-5, *Glass in building — Basic soda lime silicate glass products — Part 5: Patterned glass*

EN 572-6, *Glass in building — Basic soda lime silicate glass products — Part 6: Wired patterned glass*

EN 572-7, *Glass in building — Basic soda lime silicate glass products — Part 7: Wired or unwired channel shaped glass*

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

EN 572-9, *Glass in building — Basic soda lime silicate glass products — Part 9: Evaluation of conformity/Product standard*

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

float

flat, transparent, clear or tinted soda-lime silicate glass having parallel and polished faces obtained by continuous casting and floatation on a metal bath

NOTE In French called 'glace' and in German 'Floatglas'.

3.2

drawn sheet glass

flat, transparent, clear or tinted soda-lime silicate glass obtained by continuous drawing, initially vertically, of a regular thickness and with the two surfaces fire polished

NOTE Drawn sheet glass covers three products; new antique drawn sheet glass, drawn sheet glass for renovation and drawn sheet glass with minimum visual faults.

3.3

patterned glass

flat, translucent, clear or tinted soda-lime silicate glass obtained by continuous casting and rolling

3.4

wired patterned glass

flat, translucent, clear or tinted soda-lime silicate glass obtained by continuous casting and rolling which has a steel mesh welded at all intersections incorporated in the glass during its manufacturing process

NOTE 1 The surfaces can be either patterned or plain.

NOTE 2 In German wired patterned glass with plain surfaces is called 'Drahtglas'.

3.5

polished wired glass

flat, transparent, clear soda-lime silicate glass having parallel and polished faces obtained by grinding and polishing the faces of wired patterned glass

3.6

wired or unwired channel-shaped glass

translucent, clear or tinted soda-lime silicate glass, wired or unwired, obtained by continuous casting and rolling, which is formed into a U shape during the manufacturing process

4 General principles

EN 572-1 shall be read in conjunction with Parts 2 to 9 of this European Standard.

5 Chemical composition

5.1 General

The basic glass products covered by this European Standard are all manufactured from soda-lime silicate glass.

FprEN 572-1:2011 (E)

The magnitude of the proportions by mass of the principal constituents of soda-lime silicate glass covered by this European Standard is as follows:

| | |
|---|--------------|
| Silicon dioxide (SiO ₂) | 69 % to 74 % |
| Calcium oxide (CaO) | 5 % to 14 % |
| Sodium oxide (Na ₂ O) | 10 % to 16 % |
| Magnesium oxide (MgO) | 0 % to 6 % |
| Aluminium oxide (Al ₂ O ₃) | 0 % to 3 % |
| Others | 0 % to 5 % |

In addition to the above general composition, these glasses may also contain small quantities of other substances.

5.2 Tint

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

6 Physical and mechanical characteristics**6.1 General characteristics**

Conventional numerical values for the physical and mechanical characteristics of basic soda lime silicate glass products excluding 'Characteristic bending strength' ($f_{g,kk}$) are given in Table 1. 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.

Table 1 — General characteristic values of basic soda lime silicate glass

| Characteristic | Symbol | Value and unit |
|---|----------------------|-----------------------------------|
| Density (at 18 °C) | ρ | 2 500 kg/m ³ |
| Hardness (Knoop) | HK _{0,1/20} | 6 GPa ^a |
| Young's modulus (modulus of elasticity) | E | 7 × 10 ¹⁰ Pa |
| Poisson's ratio | μ | 0,2 |
| Specific heat capacity | c_p | 0,72 × 10 ³ J/(kg · K) |
| Nominal value of average coefficient of linear expansion between 20 C and 300 C | α | 9 × 10 ⁻⁶ /K |
| Resistance against temperature differential and sudden temperature change | | 40 K ^b |
| Thermal conductivity | λ | 1 W/(m · K) |
| Mean refractive index to visible radiation (at 589,3 nm) | n | 1,5 |
| Emissivity (corrected) | ε | 0,837 |
| ^a Knoop Hardness in accordance with ISO 9385. ^b Generally accepted value that is influenced by edge quality and glass type | | |