



SLOVENSKI STANDARD

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Steklo v gradbeništvu – Kaljeno zemljoalkalijsko silikatno varnostno steklo – 1. del: Definicije in opis

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

Glas im Bauwesen - Thermisch vorgespanntes Erdalkali-Silicat-
Einscheibensicherheitsglas - Teil 1: Definition und Beschreibung

Verre dans la construction - Verre de silicate alcalino-terreux de sécurité trempé
thermiquement - Partie 1 : Définition et description

Ta slovenski standard je istoveten z: EN 14321-1:2005

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81.040.20 Steklo v gradbeništvu Glass in building

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

Verre dans la construction - Verre de silicate alcalino-terreux de sécurité trempé thermiquement - Partie 1 : Définition et description

Glas im Bauwesen - Thermisch vorgespanntes Erdalkali-Silicat-Einscheibensicherheitsglas - Teil 1: Definition und Beschreibung

This European Standard was approved by CEN on 19 May 2005.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists 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 Central Secretariat has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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EN 14321-1:2005 (E)**Foreword**

This European Standard (EN 14321-1:2005) has been prepared by Technical Committee CEN/TC 129 "Glass in building", the secretariat of which is held by IBN/BIN.

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 December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

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

No existing European Standard is superseded.

This Part of the European Standard does not stand-alone, it is a part of one standard:

- EN 14321-1: Glass in building – Thermally toughened alkaline earth silicate safety glass – Part 1: Definition and description;
- prEN 14321-2: Glass in building – Thermally toughened alkaline earth silicate safety glass – Part 2: Evaluation of conformity.

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

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Introduction

Thermally toughened alkaline earth silicate safety glass has a safer breakage behaviour when compared with annealed glass. When it should be used to offer protection under accidental human impact, thermally toughened alkaline earth silicate safety glass also should be classified according to EN 12600.

NOTE CEN/TC129/WG8 is producing standards for the determination of the design strength of glass and is preparing a design method.

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EN 14321-1:2005 (E)**1 Scope**

This European Standard specifies tolerances, flatness, edgework, fragmentation and physical and mechanical characteristics of monolithic flat thermally toughened alkaline earth silicate safety glass for use in buildings.

Information on curved thermally toughened alkaline earth silicate safety glass is given in Annex A, but this product does not form part of this European Standard.

Other requirements, not specified in this European Standard, can apply to thermally toughened alkaline earth silicate safety glass which is incorporated into assemblies, e.g. laminated glass or insulating units, or undergo an additional treatment, e.g. coating. The additional requirements are specified in the appropriate product standard. Thermally toughened alkaline earth silicate safety glass, in this case, does not lose its mechanical or thermal characteristics.

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

EN 12600, *Glass in building — Pendulum test — Impact test method and classification for flat glass*

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

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3 Terms and definitions

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

3.1**thermally toughened alkaline earth silicate safety glass**

glass within which a permanent surface compressive stress has been induced by a controlled heating and cooling process in order to give it greatly increased resistance to mechanical and thermal stress and prescribed fragmentation characteristics

3.2**flat thermally toughened alkaline earth silicate safety glass**

thermally toughened alkaline earth silicate safety glass that has not been deliberately given a specific profile during manufacture

3.3**enamelled thermally toughened alkaline earth silicate safety glass**

thermally toughened alkaline earth silicate safety glass which has a ceramic frit fired into the surface during the toughening process. After toughening the ceramic frit becomes an integral part of the glass

NOTE In the UK, this glass is also known as opaque thermally toughened alkaline earth silicate safety glass.

3.4**horizontal toughening**

process in which the glass is supported on horizontal rollers

3.5

vertical toughening

process in which the glass is suspended by tongs

4 Glass products

Thermally toughened alkaline earth silicate safety glass shall be made from a monolithic glass generally corresponding to the following standard:

- alkaline earth silicate glass according to EN 14178-1 (float glass);
- this may also be coated in accordance with EN 1096-1.

5 Fracture characteristics

In the event of breakage, thermally toughened alkaline earth silicate safety glass fractures into numerous small pieces, the edges of which are generally blunt.

NOTE Fragmentation in service does not always correspond to that described in Clause 8, due to restraint from fixing or reprocessing (e.g. laminating), or due to the cause of fracture.

6 Dimensions and tolerances

6.1 Nominal thickness and thickness tolerances

The nominal thicknesses and thickness tolerances shall be those given in the relevant product standard (see Clause 4), some of which are reproduced in Table 1.

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Table 1 — Nominal thicknesses and thickness tolerances

Dimensions in millimetres

Nominal	Thickness tolerances for glass type
Thickness d	Alkaline earth silicate - Float
4	$\pm 0,2$
5	$\pm 0,2$
6	$\pm 0,2$
8	$\pm 0,3$
10	$\pm 0,3$
12	$\pm 0,3$
15	$\pm 0,5$

The thickness of a pane shall be determined as for the basic product. The measurement shall be taken at the centres of the 4 sides, and away from the area of any tong marks (see Figure 3), which may be present.

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6.2 Width and length (sizes) standards.iteh.ai/catalog/standards/sist/a8074bab-2973-42ef-99cf-aa843dbaf0eb/sist-en-14321-1-2005

6.2.1 General

When thermally toughened alkaline earth silicate safety glass dimensions 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. It shall be made clear which dimension is the width, B , and which is the length, H , when related to its installed position.

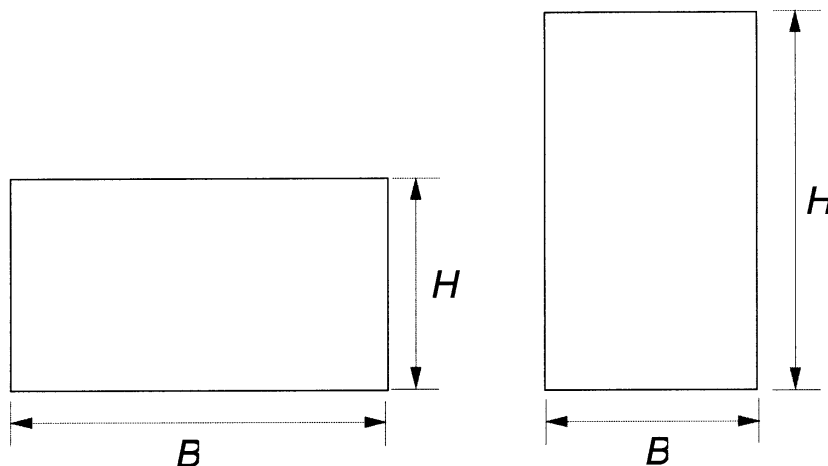


Figure 1 — Examples of width, B , and length, H , relative to the pane shape

6.2.2 Maximum and minimum sizes

For maximum and minimum sizes, the manufacturer shall be consulted.

6.2.3 Tolerances and squareness

The nominal dimensions for width and length being given, the finished pane shall not be larger than a prescribed rectangle resulting from the nominal dimensions increased by the tolerance, t , or smaller than a prescribed rectangle reduced by the tolerance, t . The sides of the prescribed rectangles are parallel to one another and these rectangles shall have a common centre (see Figure 2). The limits of squareness shall be determined by the prescribed rectangles. Tolerances are given in Table 2.

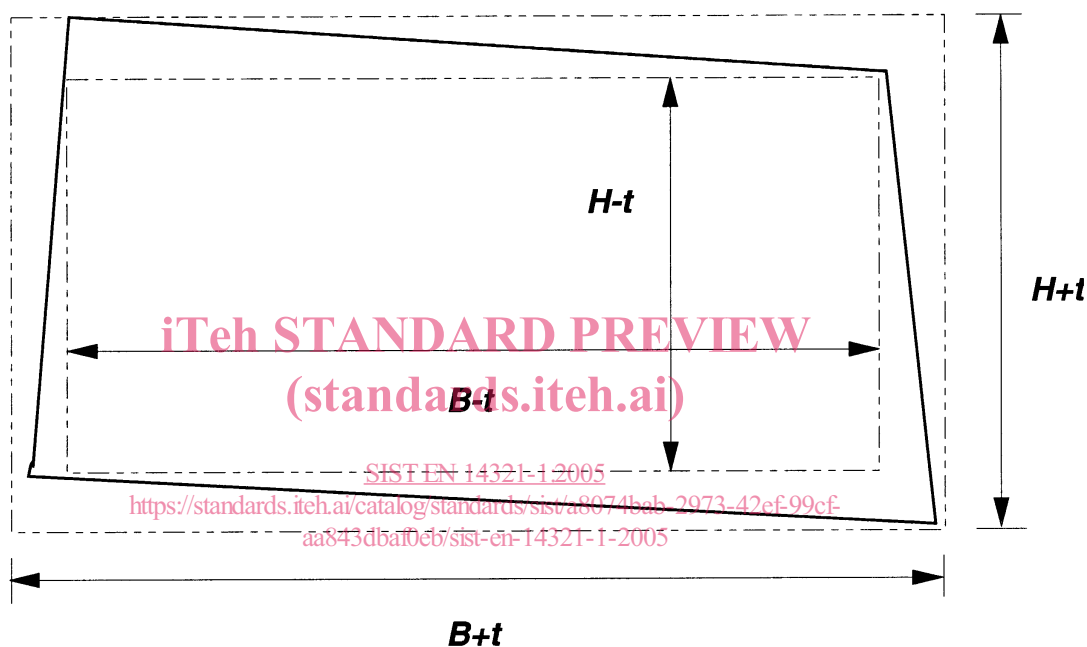


Figure 2 — Tolerance limits for dimensions of rectangular panes