

Glass in building — Heat strengthened soda lime silicate glass —

Part 1: Definition and description

The European Standard EN 1863-1:2000 has the status of a British Standard

ICS 81.040.20

National foreword

This British Standard is the official English language version of EN 1863-1:2000.
The UK participation in its preparation was entrusted by Technical Committee B/520, Glass and glazing in building, to Subcommittee B/520/1, Basic and transformed glass products, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 25 and a back cover.

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Teil 1: Definition und Beschreibung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 129, Glass in building, the Secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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

Introduction

Heat strengthened soda lime silicate glass has a higher resistance to thermal stress and an enhanced mechanical strength when compared to annealed glass.

NOTE 1: CEN/TC129/WG8 is producing standards for the determination of the design strength of glass and is preparing a design method.

NOTE 2: CEN/TC129/WG2 is preparing a standard for production control and evaluation of conformity.

1 Scope

This European Standard specifies tolerances, flatness, edgework, fragmentation and physical and mechanical characteristics of monolithic flat heat strengthened soda lime silicate glass for use in buildings.

Information on curved heat strengthened soda lime silicate glass is given in annex B, but this product does not form part of this standard.

Other requirements, not specified in this standard, can apply to heat strengthened soda lime silicate 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. Heat strengthened soda lime silicate glass, in this case, does not lose its mechanical or thermal characteristics.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to be revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 572-1	Glass in building - Basic soda lime silicate glass products - Part 1: Definitions and general physical and mechanical properties
EN 572-2	Glass in building - Basic soda lime silicate glass products - Part 2: Float 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 673	Glass in building - Determination of thermal transmittance (U value) - Calculation Method

prEN 1096-1 Glass in building - Coated glass - Part 1: Definitions and classification

prEN 1288-3 Glass in building - Determination of the bending strength of glass - Part 3:
Test with specimen supported at two points (four point bending)

3 Definitions

For the purposes of this European Standard the following definitions apply:

3.1 heat strengthened soda lime silicate glass: Glass within which a permanent surface compressive stress has been induced by a controlled heating and cooling process in order to give it increased resistance to mechanical and thermal stress and prescribed fracture characteristics.

3.2 flat heat strengthened soda lime silicate glass: Heat strengthened soda lime silicate glass which has not been deliberately given a specific profile during manufacture.

3.3 enamelled heat strengthened soda lime silicate glass: Heat strengthened soda lime silicate glass which has a ceramic frit fired into the surface during the heat strengthening process. After heat strengthening the ceramic frit becomes an integral part of the glass.

NOTE: In the UK, this glass is also known as opaque heat strengthened soda lime silicate glass.

3.4 horizontal process: Process in which the glass is supported on horizontal rollers.

3.5 vertical process: Process in which the glass is suspended by tongs.

4 Glass products

Heat strengthened soda lime silicate glass is made from a monolithic glass generally corresponding to one of the following standards:

- soda lime silicate glass according to EN 572-1
- float glass according to EN 572-2
- drawn sheet glass according to EN 572-4
- patterned glass according to EN 572-5
- coated glass according to prEN 1096-1.

Other nominal thicknesses of glass than those covered in the above standards are possible.

5 Fracture characteristics

In the event of breakage, heat strengthened soda lime silicate glass fractures in a manner similar to annealed glass (see clause 8).

NOTE: Fragmentation in service does not 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 are those given in the relevant product standard (see clause 4), some of which are reproduced in table 1.

Table 1: Nominal thicknesses and thickness tolerances

Nominal Thickness d	Thickness tolerances for glass type		
	Drawn sheet	Patterned	Float
3	$\pm 0,2$	$\pm 0,5$	$\pm 0,2$
4	$\pm 0,2$	$\pm 0,5$	$\pm 0,2$
5	$\pm 0,3$	$\pm 0,5$	$\pm 0,2$
6	$\pm 0,3$	$\pm 0,5$	$\pm 0,2$
8	$\pm 0,4$	$\pm 0,8$	$\pm 0,3$

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.

6.2 Width and length (sizes)

6.2.1 General

When heat strengthened soda lime silicate 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.

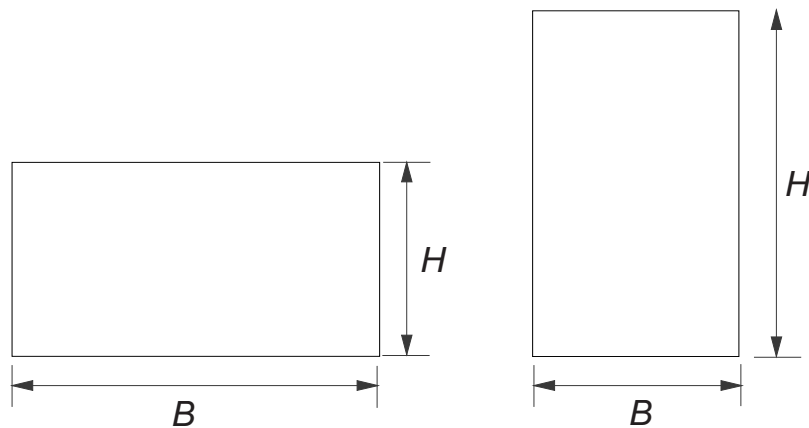


Figure 1: Examples of width, B , and length, H , relative to the pane shape

NOTE: For heat strengthened soda lime silicate glass manufactured from patterned glass, the direction of the pattern should be specified relative to one of the dimensions.

6.2.2 Maximum and minimum sizes

For maximum and minimum sizes, the manufacturer should 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 are also the prescribed rectangles. Tolerances are given in table 2.