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**BS EN 14179-1:2016**



**BSI Standards Publication**

# **Glass in building — Heat soaked thermally toughened soda lime silicate safety glass**

## Part 1: Definition and description

**bsi.**

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This British Standard is the UK implementation of EN 14179-1:2016. It supersedes BS EN 14179-1:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/520/1, Basic and transformed glass products.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016. Published by BSI Standards Limited 2016

ISBN 978 0 580 87502 1

ICS 81.040.20

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2016.

#### **Amendments issued since publication**

Date	Text affected
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## EUROPÄISCHE NORM

July 2016

ICS 81.040.20

Supersedes EN 14179-1:2005

English Version

## Glass in building - Heat soaked thermally toughened soda lime silicate safety glass - Part 1: Definition and description

Verre dans la construction - Verre de silicate sodocalcique de sécurité trempé et traité Heat Soak - Partie 1: Définition et description

Glas im Bauwesen - Heißgelagertes thermisch vorgespanntes Kalknatron-Einscheibensicherheitsglas - Teil 1: Definition und Beschreibung

This European Standard was approved by CEN on 12 May 2016.

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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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## European foreword

This document (EN 14179-1:2016) 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of an identical text or by endorsement, at the latest by January 2017, and conflicting national standards shall be withdrawn at the latest by January 2017.

This document supersedes EN 14179-1:2005.

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

EN 14179, *Glass in building — Heat soaked thermally toughened soda lime silicate safety glass*, is composed of the following parts:

- *Part 1: Definition and description;*
- *Part 2: Evaluation of conformity / Product standard.*

This European Standard differs from EN 14179-1:2005 as follows:

- a) some figures have been revised and some new figures have been added;
- b) new terms and definitions have been included in Clause 3, e.g. air cushion process (3.7), edge lift (3.10) and roller wave distortion (3.14) further nominal thicknesses have been included in Table 1;
- c) the glass temperature during the holding time of the heat soak process cycle has been reduced,
- d) subclause 8.2.3 "Tolerances and squareness" has been completely revised; the squareness of rectangular glass panes is now expressed by the difference between its diagonals;
- e) Clauses 8 and 9 have been completely revised (including the air cushion manufacturing process);
- f) the informative Annex "Curved heat soaked thermally toughened soda lime silicate safety glass" has been deleted;
- g) a new informative Annex dealing with an alternative method for the measurement of roller wave distortion has been added.

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

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## Introduction

Heat soaked thermally toughened soda lime silicate safety glass has a safer breakage behaviour when compared with annealed glass. It also has a known level of residual risk of spontaneous breakage arising from the possible presence of critical nickel sulphide (NiS) inclusions in the heat soaked thermally toughened soda lime silicate glass.

NOTE 1 This case deals with extremely large quantities of glass. These quantities are dealt with on a statistical basis. Therefore, it is impossible to select a quantity of heat soaked thermally toughened soda lime silicate safety glass, for a building, and claim that 'no break' by NiS inclusion can occur. The breakage of heat soaked thermally toughened soda lime silicate safety glass caused by other influences is not considered in this European Standard.

When used to offer protection under accidental human impact, heat soaked thermally toughened soda lime silicate safety glass also should be classified according to EN 12600.

NOTE 2 CEN/TC 129/WG 8 is producing standards for the determination of the design strength of glass and is preparing a design method.

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning heat soak tests.

CEN takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has ensured CEN that he / she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with CEN. Information may be obtained from:

SAINT-GOBAIN GLASS FRANCE;

Les Miroirs – 92096 La Défense Cedex,

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. CEN shall not be held responsible for identifying any or all such patent rights.

CEN and CENELEC maintain online lists of patents relevant to their standards. Users are encouraged to consult the lists for the most up to date information concerning patents (<ftp://ftp.cencenelec.eu/EN/IPR/Patents/IPRdeclaration.pdf>).

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## 1 Scope

This European Standard specifies the heat soak process system together with tolerances, flatness, edgework, fragmentation and physical and mechanical characteristics of monolithic flat heat soaked thermally toughened soda lime silicate safety glass for use in buildings.

Curved heat soaked thermally toughened soda lime silicate safety glass is not part of this European Standard.

Other requirements, not specified in this European Standard, can apply to heat soaked thermally toughened soda lime 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. Heat soaked thermally toughened soda lime silicate safety glass, in this case, does not lose its bending strength characteristics and its resistance to temperature differentials.

Surface finished glasses (e.g. sandblasted, acid etched) after toughening are not covered by this European Standard.

## 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 572-1, *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 572-8, *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 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 Terms and definitions

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

### 3.1

#### **heat soaked thermally toughened soda lime silicate safety glass**

glass within which a permanent surface compressive stress, additionally to the basic mechanical strength, 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 and which has a known level of residual risk of spontaneous breakage due to the presence of critical nickel sulphide (NiS) inclusions

Note 1 to entry: The mechanical properties, i.e. thermal durability and mechanical strength, and safety properties, i.e. fragmentation characteristics, are generated by the level of surface compression. These properties are not size dependent.