

**Glass in building - Heat soaked thermally toughened
alkaline earth silicate safety glass - Part 1: Definition
and description**

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ICS 81.040.20

English Version

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

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

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

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Foreword

This document (EN 15682-1:2013) 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

EN 15682 is composed of the following parts:

- EN 15682-1, *Glass in building — Heat soaked thermally toughened alkaline earth silicate safety glass — Part 1: Definition and description*
- EN 15682-2, *Glass in building — Heat soaked thermally toughened alkaline earth silicate safety glass — Part 2: Evaluation of conformity/Product standard*

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.

Introduction

Heat soaked thermally toughened alkaline earth 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 thermally toughened alkaline earth silicate glass.

NOTE 1 In this case it is about a statistical mean out of a big quantity of glass. It is impossible to determine separated subjects from it for a building where definitely no "break" produced by NiS occurs. The breaking of glass caused by other influences is not included herewith.

When used to offer protection under accidental human impact, heat soaked thermally toughened alkaline earth 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.

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 alkaline earth silicate safety glass for use in buildings. Information on curved heat soak thermally toughened alkaline earth silicate safety glass is given in Annex B, but this product does not form part of this document.

Other requirements, not specified in this document, can apply to heat soaked 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 EN 15682-2. In this case, heat soaked thermally toughened alkaline earth silicate glass does not lose its mechanical or thermal characteristics.

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

3 Terms and definitions

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

3.1 heat soaked thermally toughened alkaline earth silicate safety glass
glass within which a permanent surface compressive stress has been induced 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 do not depend on the size of the pane.

3.2 residual risk
statistical risk of spontaneous breakage of heat soaked thermally toughened alkaline earth silicate safety glass due to the presence of critical nickel sulphide inclusions

3.3 flat heat soaked thermally toughened alkaline earth silicate safety glass
heat soaked thermally toughened alkaline earth silicate safety glass that has not been given a previously determined profile during manufacture

3.4 heat soaked enamelled thermally toughened alkaline earth silicate safety glass
heat soaked thermally toughened alkaline earth silicate safety glass which has a ceramic frit fired into the surface during the toughening process becoming an integral part of the glass after toughening

3.5 horizontal toughening
process in which the glass is supported on horizontal rollers