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Standards

Irish Standard  
I.S. EN 13024-1:2011

# Glass in building - Thermally toughened borosilicate safety glass - Part 1: Definition and description

## I.S. EN 13024-1:2011

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## Glass in building - Thermally toughened borosilicate safety glass - Part 1: Definition and description

Verre dans la construction - Verre borosilicate de sécurité  
trempe thermiquement - Partie 1: Définition et description

Glas im Bauwesen - Thermisch vorgespanntes Borosilicat-  
Einscheiben-Sicherheitsglas - Teil 1: Definition und  
Beschreibung

This European Standard was approved by CEN on 25 September 2011.

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## EN 13024-1:2011 (E)

### Foreword

This document (EN 13024-1:2011) 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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

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 supersedes EN 13024-1:2002.

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

EN 13024 is divided into the following parts:

- EN 13024-1, *Glass in building — Thermally toughened borosilicate safety glass — Part 1: Definition and description*;
- EN 13024-2, *Glass in building — Thermally toughened borosilicate safety glass — Part 2: Evaluation of conformity/Product standard*.

This European Standard differs from EN 13024-1:2002 as follows:

- a) some figures have been revised and new figures have been added;
- b) in Clause 3, new terms and definitions have been added;
- c) Subclause 6.2.3 "Tolerances and squareness" has been completely revised; the squareness of rectangular glass panes is now expressed by the difference between its diagonals and the limits of squareness are described by deviation between diagonals;
- d) Clauses 6 and 7 have been completely revised;
- e) normative Annex A "Determination of U value" has been deleted;
- f) 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 organizations of the following countries are bound to implement this European Standard: 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 the United Kingdom.

## **Introduction**

Thermally toughened borosilicate safety glass has a higher thermal shock resistance and a safer breakage behaviour when compared with annealed glass. When it should be used to offer protection under accidental human impact, thermally toughened borosilicate safety glass also should be classified according to EN 12600.

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

## EN 13024-1:2011 (E)

### 1 Scope

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

Information on curved thermally toughened borosilicate safety glass is given in Annex A, but this product does not form part of this standard.

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

This European Standard does not cover glass sandblasted after toughening.

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

EN 1748-1-1, *Glass in building — Special basic products — Borosilicate glasses — Part 1-1: Definitions and general physical and mechanical properties*

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

### 3 Terms and definitions

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

**3.1**  
**curved thermally toughened borosilicate safety glass**  
thermally toughened borosilicate safety glass which has been deliberately given a specific profile during manufacture

NOTE The information is given in Annex A.

**3.2**  
**edge deformation**  
deformation of the edge because of the tong marks

**3.3**  
**edge lift (also referred to as edge dip)**  
distortion produced in horizontal toughened glass, at the leading and trailing edge of the plate

NOTE This is a distortion produced by a reduction in surface flatness.



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