

# Supplementary Standard SB-13

## Glass in Guards

June 12, 2012

**COMMENCEMENT**

Supplementary Standard SB-13 comes into force on the 1st day of July 2012.

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# SB-13 Glass in Guards

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## Introduction

The prescriptive requirements for the design and construction of glass in guards in this Supplementary Standard are intended to reduce the probability of:

- (a) breakage of glass panels; and
- (b) injury to persons in the vicinity of a building as a result of falling broken glass.

Ontario's Building Code is written in an objective-based format to facilitate and encourage the use of alternative solutions to the prescriptive solutions contained in Division B of the Building Code and the standards referenced by the Code. Therefore, it is expected that the prescriptive-based solutions in this Supplementary Standard will form the benchmark for evaluating alternative solutions, including matrix-based risk assessment solutions. This approach will continue to allow for some flexibility and design choice for architects, engineers, developers, and the construction industry.

This Supplementary Standard is referenced by Sentence 3.1.20.1.(1) of Division B of the Building Code.

## Section 1.1. General

### 1.1.1. Application of Supplementary Standard SB-13

#### 1.1.1.1. Application

(1) Except as provided in Sentence (2), this Supplementary Standard applies to glass used in interior and exterior *guards* in *buildings* described in Sentence 1.1.2.2.(1) of Division A of the *Building Code*.

(2) This Supplementary Standard does not apply to glass used in *guards* at locations referred to in Sentence 3.3.4.7.(1) of Division B of the *Building Code*.

## Section 1.2. Terms and Abbreviations

### 1.2.1. Definitions of Words and Phrases

#### 1.2.1.1. Non-defined Terms

(1) Definitions of words and phrases used in this Supplementary Standard that are not included in the list of definitions in Articles 1.4.1.2. and 1.4.1.3. of Division A of the *Building Code* and are not defined in another provision of the Code shall have the meanings that are commonly assigned to them in the context in which they are used, taking into account the specialized use of terms by the various trades and professions to which the terminology applies.

#### 1.2.1.2. Defined Terms

(1) Each of the words and terms in italics in this Supplementary Standard has the same meaning as in Subsection 1(1) of the *Building Code Act, 1992* or Clause 1.4.1.2.(1)(b) of Division A of the *Building Code*.

### 1.2.2. Symbols and Other Abbreviations

#### 1.2.2.1. Symbols and Other Abbreviations

(1) Where used in this Supplementary Standard, a symbol or abbreviation listed in Column 1 of Table 1.4.2.1. of Division A of the *Building Code* shall have the meaning listed opposite it in Column 2.

## Section 1.3. Referenced Documents and Organizations

### 1.3.1. Referenced Documents

#### 1.3.1.1. Effective Date

(1) Unless otherwise specified in this Supplementary Standard, the documents referenced in this Supplementary Standard shall include all amendments, revisions and supplements effective to April 30, 2012.

### 1.3.1.2. Applicable Editions

(1) Where documents are referenced in this Supplementary Standard, they shall be the editions designated in Column 2 of Table 1.3.1.2.

Table 1.3.1.2.  
Referenced Documents  
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Supplementary Standard Reference
DIN	DIN EN 14179-1 September 2005	Heat Soaked Thermally Toughened Soda Lime Silicate Safety Glass	2.1.1.3.(1)
Column 1	2	3	4

**Notes to Table 1.3.1.2.:**

(1) DIN refers to the "Deutsches Institut für Normung e. V. ". In English, DIN means the German Institute for Standardization. (See Appendix A.)

## Section 2.1. Glass

### 2.1.1. Selection of Glass in a Guard

#### 2.1.1.1. Safety Glass

- (1) Glass other than safety glass shall not be used in a *guard*.
- (2) Glass in a *guard* shall conform to Table 2.1.1.1.

Table 2.1.1.1.  
Selection of Glass in a Guard  
Forming Part of Sentence 2.1.1.1.(2)

Location of Glass in a <i>Guard</i>	Type of Glass Required
Glass located beyond the edge of a floor or within 50 mm of the edge of a floor	Heat strengthened laminated glass
Glass located more than 50 mm inward from the edge of a floor	Heat strengthened laminated glass
	Heat soaked tempered glass
Glass located more than 150 mm inward from the edge of a floor	Heat strengthened laminated glass
	Heat soaked tempered glass
	Tempered glass not more than 6 mm thick
Column 1	2

#### 2.1.1.2. Laminated Glass

(1) Laminated glass shall be designed, fabricated, and installed so that, in the event of failure of the glass, the glass does not dislodge from the support framing.

#### 2.1.1.3. Heat Soaked Tempered Glass

(1) Heat soaked tempered glass shall conform to DIN EN 14179-1, “Heat Soaked Thermally Toughened Soda Lime Silicate Safety Glass”. (See Appendix A.)

## Section 3.1. Structural Design

### 3.1.1. Design Requirements

#### 3.1.1.1. Structural Design

(1) Glass in a *guard* shall conform to the requirements of Part 4 of Division B of the *Building Code*. (See Appendix A.)

(2) Glass in a *guard* shall not be in direct contact with any metal or similar hard elements forming part of the *guard* or supporting structure.

(3) Sufficient allowances shall be incorporated for glass in a *guard* to permit,

- (a) deflection and movement under loads, and
- (b) expansion and contraction due to temperature changes.

## Appendix A

### Explanatory Material for SB-13

Appendix A to this Supplementary Standard is included for explanatory purposes only and does not form part of the requirements. The bold-faced reference numbers that introduce each item apply to the requirements in this Supplementary Standard.

A-Table 1.3.1.2. DIN - Deutsches Institut für Normung e. V. (German Institute for Standardization).

Name	Address	Contact
DIN	DIN Deutsches Institut für Normung e. V. Am DIN-Platz Burggrafenstraße 6 10787 Berlin Germany	Phone: +49 30 2601-0 Fax: +49 30 2601-1231 web site: <a href="http://www.din.de">http://www.din.de</a>
Column 1	2	3

#### A-2.1.1.3.(1) Heat Soaked Tempered Glass.

Heat soaked tempered glass is 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. DIN EN 14179-1 is a European standard that 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.

#### A-3.1.1.1.(1) Structural Design.

Part 4 of Division B of the Building Code applies to buildings described in Sentence 1.1.2.2.(1) of Division A of the Building Code. When considering the load combinations on exterior balcony guards, Part 4 requires that the live load should be considered in combination with the wind load. Refer to Table 4.1.3.2. of Division B of the Building Code for the relevant load combinations. Case 2, with the full live load coupled with a reduced wind load (via the 0.4 factor) is a plausible scenario. It is also plausible that some fraction of the live load may be present during the design wind event as per the load combination in case 4. Therefore, the live load needs to be considered in combination with the wind load via the load combinations in cases 2 and 4. The wind load, when combined with the live load, should be the outward wind load (i.e.: acting as a suction load on the guard) that is applied in combination with the outward guard load, and, as a separate case, the inward wind load (i.e.: acting as a pressure load on the guard) that is applied in combination with the inward guard load.