

SINGAPORE STANDARD

**Specification for safety glazing materials for
use in buildings (human impact considerations)**

Confirmed 2012

Incorporating Corrigendum No. 1

Published by



Enterprise
Singapore

SS 341:2001(2012)+C1:2018
(ICS 91.100)

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ISBN 9971-67-866-7

SS 341:2001(2012)+C1:2018

This Singapore Standard was approved by Building Material Product Standards Committee on behalf of the Standards Council of Singapore on 15 September 2001.

First published, 1989

First revision, 2001

The Building Materials Product Standards Committee appointed by the Standards Council consists of the following members:

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Contents

	Page
Foreword _____	7

SPECIFICATION

1	Scope _____	8
2	Application _____	8
3	Definitions _____	8
4	Requirements common to all safety glazing materials _____	10
5	Test requirements _____	14

ANNEXES

A	Impact test _____	18
B	Fragmentation test _____	25
C	Boil test _____	27
D	Weathering test _____	29
E	Ageing test _____	32
F	Determination of thickness _____	34
G	Notes on safe performance criteria and human dynamics data _____	36
H	Measurement of surface compression reading (non-destructive test) _____	38

TABLES

1.1	Thickness limits for standard nominal thickness of glass _____	12
1.2	Thickness limits for standard nominal imperial thickness of glass _____	13
2	Size tolerance for all safety glass _____	14
3	Flatness limits for glass of standard nominal thickness _____	14
4.1	Testing for safety glazing materials _____	15
4.2	Classification of glazing material according to behaviour when subjected to impact test _____	16
4.3	Fragmentation test – Minimum particle count _____	16
4.4	Surface compressive stress reading _____	17

FIGURES		Page
1	Test frame _____	21
2	Shot bag _____	22
3	Section A-A of test frame _____	23
4	Pointed protrusions _____	24
5	Areas to be excluded in particle count determination _____	26
6	Human dynamics data chart _____	37
7	Apparatus for measuring surface stress _____	39
8	Fringes observed in the plane of the compensator _____	40
9	Orientation of the instrument for measuring surface stress _____	41

Foreword

This Singapore Standard was prepared by the Technical Committee on Doors, Windows and Cladding (including Glazing) under the direction of the Building Materials Product Standards Committee. It is a revision of SS 341 : 1989 and is largely based on Australian Standards AS/NZS 2208 : 1996 – Safety glazing materials in buildings.

This standard covers tests to be carried out for the different types of safety glazing material such as toughened (also known as ‘fully tempered’ or ‘heat treated’), laminated, heat-strengthened, heat-strengthened laminated, liquid laminated, safety wired, organic-coated, plastic and wired glass.

This edition incorporates the following major changes from the previous edition:

- (a) Introduction of the non-destructive test to measure the surface stress in heat-strengthened and toughened glass (also known as ‘fully tempered glass’ or ‘heat treated glass’).
- (b) Additional impact levels have been added to the impact test.

In preparing this standard, references were made to the following publications :

- 1. ASTM C 1036-1997 Standard specification for flat glass
- 2. ASTM C 1048-1997 Standard specification for heat-treated flat glass – Kind HS, Kind FT coated and uncoated glass

Acknowledgement is made for the use of these publications.

Portions of this standard have been reprinted, with permission, from ASTM C 1279-94 : ‘Standard test method for non-destructive photoelastic measurement of edge and surface stresses in annealed, heat-strengthened, and fully tempered flat glass’ copyright American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PAQ 19428. A copy of ASTM C 1279-94 may be purchased from ASTM, phone 610-832-9585 fax: 610-832-9555, e-mail: service@astm.org, website: www.astm.org

Parts or extracts of other overseas standards incorporated into this Singapore Standard are indicated below :

Table 1.1, Table 2, Table 3, Table 4.2, Table 4.3, Annex A, Annex B, Annex C, Annex D, Annex E, Annex F, Figure 1, Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6 of SS 341 : 2001 are similar to Table 2.1, Table 2.2, Table 2.3, Table 3.2, Table 3.3, Figure B1, Figure D1, Figure D2, Figure D3, Figure E1, Appendix D, Appendix E, Appendix F, Appendix G, Appendix H, Appendix C and Appendix B respectively of AS/NZS 2208 : 1996 and are reproduced with the permission of Standards Australia and Standards New Zealand.

NOTE

- 1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.*
- 2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

Specification for safety glazing materials for use in buildings (human impact considerations)

1 Scope

This specification sets out performance requirements and test methods for safety glazing materials for use in buildings in areas where human impact is likely. The materials specified are glazing panels designed to promote safety and to reduce or minimize the likelihood of cutting and piercing injuries from human impact.

Clear, tinted and patterned safety glazing materials, and opaque glazing materials used as spandrel panels in locations subject to human impact are included in this specification.

Glazing materials such as sealants and beads and added precautions that may be necessary to combat fire hazards are not covered within the scope of this standard.

NOTE – Notes on safe performance criteria and human dynamics data are given in Annex G.