

SINGAPORE STANDARD
Specification for aluminium framed sliding
glass doors

Incorporating Amendment No. 1



Published by

Enterprise
Singapore

SS 268 : 2014

(ICS 81.040.20; 91.060.50)

SINGAPORE STANDARD

**Specification for aluminium framed sliding
glass doors**

All rights reserved. Unless otherwise specified, no part of this Singapore Standard may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from Enterprise Singapore. Request for permission can be sent to: standards@enterprisesg.gov.sg.

ISBN 978-981-4557-63-4

This Singapore Standard was approved by the Building and Construction Standards Committee on behalf of the Singapore Standards Council on 4 December 2014.

First published, 1983

First revision, 2014

The Building and Construction Standards Committee, appointed by the Standards Council, consists of the following members:

	Name	Capacity
Chairman	: Mr Chan Kok Way	<i>Member, Standards Council</i>
Deputy Chairmen	: Er. Chew Keat Chuan Mr Larry Ng Lye Hock	<i>Building and Construction Authority Urban Redevelopment Authority</i>
Secretary	: Ms Lee Hiok Hoong	<i>SPRING Singapore</i>
Members	: Mr Bin Chee Kwan Er. Chan Ewe Jin Er. Chee Kheng Chye Mr Chng Chee Beow Mr Dominic Choy Er. Paul Fok Mr Goh Peng Thong Mr Desmond Hill Er. Lee Chuan Seng Mr Benedict Lee Khee Chong Mr Rodney Lee Assoc Prof Leong Eng Choon Mr Darren Lim Dr Lim Lan Yuan Er. Lim Peng Hong Mr Silas Loh Er. Mohd Ismadi Assoc Prof Gary Ong Khim Chye Er. Yvonne Soh Dr Tam Chat Tim Mr Christopher Tan Er. Tang Pei Luen	<i>National Environment Agency Institution of Engineers, Singapore Housing & Development Board Real Estate Developers' Association of Singapore Singapore Contractors Association Limited Land Transport Authority Individual Capacity Individual Capacity Individual Capacity Singapore Institute of Architects Singapore Manufacturing Federation Nanyang Technological University Building and Construction Authority Association of Property and Facility Managers Association of Consulting Engineers Singapore Singapore Institute of Surveyors and Valuers Ministry of Manpower National University of Singapore Singapore Green Building Council Individual Capacity Singapore Civil Defence Force JTC Corporation</i>

The Technical Committee on Architectural Works, appointed by the Building and Construction Standards Committee and responsible for the preparation of this standard, consists of representatives from the following organisations:

	Name	Capacity
Chairman	: Mr Larry Ng Lye Hock	<i>Member, Building and Construction Standards Committee</i>
Deputy Chairman	: Mr Benedict Lee Khee Chong	<i>Member, Building and Construction Standards Committee</i>
Secretary	: Mr Allan Koh	<i>SPRING Singapore</i>
Members	: Mr Cheah Kok Ming	<i>National University of Singapore</i>
	Mr Choy Kin Man	<i>TUV SUD PSB Pte Ltd</i>
	Mr Gan Geok Chua	<i>Singapore Glass Association</i>
	Mr Goh Chun Hee	<i>Individual Capacity</i>
	Ms Vivien Heng Cheng Sim	<i>Singapore Green Building Council</i>
	Mr Koh Bon Pock	<i>Singapore Timber Association</i>
	Mr Lau Kwong Chung	<i>Singapore Institute of Architects</i>
	Maj Lim Lam Kwang	<i>Singapore Civil Defence Force</i>
	Mr Rajendran Ramamoorthy	<i>Building and Construction Authority</i>
	Mr See Sing Kok	<i>Institution of Engineers, Singapore</i>
	Mr See Sing Mun	<i>Singapore Manufacturing Federation</i>
	Ms Tan Hwee Yong	<i>Housing & Development Board</i>
	Mr Wong Chung Wan	<i>Individual Capacity</i>
	Mr Wilson Wong King Chiong	<i>Singapore Contractors Association Ltd</i>
	Ms Catherine Wong Phui Chan	<i>Setsco Services Pte Ltd</i>
	Ms Jesseline Yap	<i>Tiles Association Singapore</i>
Co-opted Members	: Er. Chong Kee Sen	<i>Individual Capacity</i>
	Mr Fang Yea Saen	<i>Individual Capacity</i>

The Working Group, appointed by the Technical Committee to assist in the preparation of this standard, comprises the following experts who contribute in their *individual capacity*:

	Name
Convenor	: Mr Gan Geok Chua
Secretary	: Mr Chan Chee Keong
Members	: Mr Clement Chin
	Mr Lim Kheng Chye
	Mr Tan Boon Kwee
	Mr Jeremy Tan Thay Keat
	Ms Judy Yang Mei Hwa

The organisations in which the experts of the Working Group are involved are:

Architects Studio

Building and Construction Authority

Dorma Far East Pte Ltd

Housing & Development Board

LHL International Pte Ltd

Singapore Safety Glass Pte Ltd

TUV SUD PSB Pte Ltd

Contents

	Page
Foreword _____	6
1 Scope _____	7
2 Normative references _____	7
3 Definitions _____	8
4 Materials and manufacture _____	11
5 Fastening and fixings _____	13
6 Fabrication sizes and tolerances _____	13
7 Glazing _____	14
8 Security _____	14
9 Safety _____	14
10 Performance _____	14

Annexes

A (normative) Structural performance test _____	19
B (normative) Air leakage test _____	22
C (normative) Watertightness test _____	28
D (normative) Proof load test _____	30
E (informative) Recommended periods for calibration _____	32

Figures

1 Air leakage limits for opening lights of doors of air-conditioned buildings _____	17
A.1 Pressure sequence for structural performance and proof load test _____	21
B.1a General arrangement of a typical test chamber (exterior of test specimen facing inward of chamber) _____	25
B.1b General arrangement of a typical test chamber (exterior of test specimen facing outward of chamber) _____	26
B.2 Pressure sequence for air leakage test _____	27
C.1 Pressure sequence for watertightness test _____	29

Foreword

This Singapore Standard was prepared by a Working Group appointed by the Technical Committee on Architectural Works under the direction of the Building and Construction Standards Committee.

This is a revision of SS 268 : 1983. The changes in the revision include the following:

- (a) Incorporated sliding folding door systems to be in line with market trends;
- (b) Included double glazing for the purpose of energy conservation;
- (c) Updated the standards for aluminium alloy complying to BS EN 755;
- (d) Updated glass standards according to BS 952 and glazing of site-glazed door according to BS 6262, safety glass complying with SS 341 and hermetically sealed double glazing units complying with EN 1279 or ASTM E 2190;
- (e) Updated / added relevant standards for operating devices, fastenings and fixings;
- (f) Updated in Clause 10 the performance tests for structural, air/water, load, operation and test sequences.
- (g) Updated the annexes with international practices;
- (h) Updated the referenced documents in the standard.

In preparing this standard, reference was made to SS 212 "Specification for aluminium alloy windows".

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
3. *Compliance with a SS or TR does not exempt users from any legal obligations.*

Specification for aluminium framed sliding glass doors

1 Scope

This Singapore Standard specifies requirements for aluminium framed sliding glass doors for general purposes. It includes aluminium framed sliding folding glass doors. It does not include heavy-duty non-residential sliding doors such as those used in garage, showrooms and movable shop-fronts. It also does not include sliding doors containing panels which exceed 1500 mm in width or 3000 mm in height. Full-height framed sliding and sliding-folding glass panels at the perimeter of a building are not within this standard as they are defined as full-height windows.

The doors shall consist of two or more panels of glass contained in aluminium frames which in turn are contained within an aluminium outer frame designed so that one or more panels are movable by sliding in a horizontal direction. The panels may be all sliding or some sliding and some fixed or folding.

The doors are not designed to withstand imposed structural loads or loads from top hung windows located directly above.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AAMA 2604	Voluntary specifications, performance requirements and test procedures for high performance organic coatings on aluminium extrusions and panels
AAMA 2605	Voluntary specifications, performance requirements and test procedures for superior performing organic coatings on aluminium extrusions and panels
ASTM E 2190	Standard specification for insulating glass unit performance and evaluation
BS 952	Glass for glazing Part 1 Classification Part 2 Terminology for work on glass
BS 1004	Specification for zinc alloys for die casting and zinc alloy die castings
BS 1224	Specification for electroplated coatings of nickel and chromium
BS 1706	Method for specifying electroplated coatings of zinc and cadmium on iron and steel
BS 3987	Specification for anodic oxidation coatings on wrought aluminium for external architectural applications
BS 4842	Specification for liquid organic coatings for application to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with liquid organic coatings
BS 6262	Glazing for buildings

BS 6338	Specification for chromate conversion coatings on electroplated zinc and cadmium coatings
BS 6496	Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with powder organic coatings
BS EN 485	Aluminium and aluminium alloys. Sheet, strip and plate.
BS EN 755	Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles.
BS EN 10088	Stainless steels Part 1 List of stainless steels Part 2 Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes Part 3 Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes
BS EN 22063	Metallic and other inorganic coatings. Thermal spraying. Zinc, aluminium and their alloys
EN 1279	Glass in building – Insulating glass units
JIS H 8602	Combined coatings of anodic oxide and organic coatings on aluminium and aluminium alloys
ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods
SS 341	Safety glazing materials for use in buildings (human impact considerations)