



Specification for unplasticized PVC pipes and fittings for soil, waste and vent applications



Published by



SS 213: 1998

(ICS 83.140.30; 91.140.80)

SINGAPORE STANDARD

Specification for unplasticized PVC pipes and fittings for soil, waste and vent applications

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.

This Singapore Standard having been approved by the Building Materials Product Standards Committee was endorsed by the Standards Council on 15 March 1998.

First published, 1979 First revision, 1998

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

		Name	Organisation
Chairman	:	Mr Kenneth Chen Koon Lap	Standards Council
Deputy Chairman	:	Ms Tan Chiew Wan	Singapore Productivity and Standards Board
Secretary	:	Mr Han Kin Sew	
Members	:	Mr Boo Geok Kwang	Singapore Civil Defence Force
		Mr Anthony Chia	Urban Redevelopment Authority
		Dr Chiew Sing Ping	Nanyang Technological University
		Mrs Goh-Sim Mui Hiang	Public Works Department
		Mr Goh Soo Meng	Institution of Engineers Singapore
		Mr John Kong Wai Meng	Singapore Confederation of Industries
		Mr Lee Seng Kee	Singapore Mass Rapid Transit
		Mr Arthur Loh	Singapore Institute of Architects
		Mr Larry Ng Lye Hock	Housing and Development Board
		Mr Ong Geok Soo	Jurong Town Corporation
		Dr Tan Kiang Hwee	National University of Singapore
		Mr Tan Tian Chong	Construction Industry Development Board
		Mr Teo Tit Ngee	Singapore Contractors Association Limited
Co-opted Member	•	Dr Tam Chat Tim	Individual Capacity

The Technical Committee on Building Services appointed by the Building Materials Product Standards Committee and responsible for the preparation of this standard consists of representatives from the following organisations:

		Name	Organisation
Chairman	:	Mr Lee Seng Kee	Building Materials Products Standards Committee
Deputy Chairman	:	Mr Tham Kok Yong	Singapore Mass Rapid Transit
Secretary	:	Ms Lee Hiok Hoong	Singapore Productivity and Standards Board
Members	;	Assoc Prof A Appan Mr Henri Chan Chi Hang Mr Goh Teck Tham Mr Kuang Kim Yaw Mr Lim Eng Chuan	Nanyang Technological University Singapore Confederation of Industries Singapore Civil Defence Force Public Utilities Board Ministry of the Environment

Members: Mr Loke Yee Weng Institution of Engineers Singapore

Mr Stephen Low Chye Huat Housing and Development Board
Mr Michael Nalpon Singapore Institute of Building Limited

Mr Phua Boon Leng Public Works Department

Assoc Prof M B Ullah National University of Singapore

Co-opted

Member : Mr Siew Yee Cheong Individual Capacity

The Working Group appointed by the Technical Committee to assist in the preparation of this standard comprises the following members:

Name Organisation

Convenor: Mr Lim Eng Chuan Ministry of the Environment

Members : Mr Chan Chiu Seng Singapore Productivity and Standards Board

Mr Lim Phuay Chua Ministry of the Environment

Mr Patrick Loh Iplex Asia Pte Ltd
Mr Patrick Ong Singa Plastics Limited

Contents

		Page
Fore	word	7
SPE	CIFICATION	
1	Scane	Addressing
2	Scope	
3	Definitions Materials	
4	Freedom from defects	
5	Colour	
6	Dimensions for pipes	
7	Dimensions for fittings	
8	Jointing	
9	Properties	
10	Sampling	
11	Marking	
ANN	EXES	
Α	Determination of dimensions of pipe	28
В	Softening point test	
С	Method for determining PVC and titanium dioxide content of UPVC pipes and fittings	
D	Tensile test	
E	Heat reversion test for pipe	
F	Impact test for pipe	
G	Hydrostatic pressure test	
Н	Test for opacity	
l	Stress relief test	
J	Load test at 100 kgf	
TAB	LES	
1	Dimensions of soil, waste and vent pipes	9
2.1	Dimensions of moulded UPVC socket fittings for UPVC SWV pipe	11
2.2	Minimum socket dimension A (for 3 m length and 50°C temperature range)	12
2.3	Inspection openings minimum clear diameter	13

		Pag
2.4	Test openings minimum clear diameter	1
3.1	Test requirements and frequency of sampling for pipes	
3.2	Test requirements and frequency of sampling for fittings	2
4	Total mass for impact test at 20°CTest openings minimum clear diameter	3
FIGUI	RES	
1.1	Sketch of a moulded UPVC socket fitting	1
1.2	Typical UPVC rubber ring expansion joint with groove in socket	
2.1	Single junction	
2.2	Single sweep junction	
2.3	Double sweep junction	
2.4	4-way junction (unswept)	
2.5	M and F bend	
2.6	Bend	***************************************
2.7	Vented bend	
2.8	Straight coupling	
2.9	Slip coupling (for repair)	
2.10	Expansion coupling with rubber seal ring	
2.11	Socket reducer	
2.12	Test opening	
2.13	Boss connector	anno cantaman anno anno anno anno anno anno anno
2.14	Pan collar	***************************************
2.15	Off-set pan collar	
2.16	Level invert taper	
2.17	Vent cowl	·
2.18	Weathering apron	
2.19	S-trap	
2.20	P-trap	
2.21	Grating for floor trap	
2.22	Grating for floor waste	
3	Schematic arrangement of vicat softening point apparatus	
4	Cutting edges of punch	
5	Impact testing machine	
6	End connections for pressure test	

SS 213: 1998

Foreword

This Singapore Standard was prepared by the Technical Committee on Building Services under the direction of the Building Materials Product Standards Committee.

In preparing this specification, references were made to the following:

1. AS 1415 : - Unplasticized PVC (UPVC) pipes and fittings for soil, waste and vent

(SWV) applications

Part 1: 1984 Pipes

Part 2: 1984 Moulded fittings

Part 3: 1984 Fabricated fittings

Part 4: 1984 Rubber ring expansion joints.

2. AS 1462.18: 1988 Method for determination of PVC and titanium dioxide content

3. BS 4514: 1983 Unplasticized PVC soil and ventilating pipes, fittings and accessories

4. SS 270 : 1995 Specification for elastomeric joint rings

5. SS 272: 1983 (1996) Specification for unplasticized PVC pipes below ground for drainlines

and sewers.

Acknowledgement is made for the use of information from the above references.

NOTE

- 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 unplasticized PVC pipes and fittings for soil, waste and vent applications

1 Scope

This Singapore Standard specifies requirements for unplasticized polyvinyl chloride (UPVC) pipes, fittings and accessories for soil, waste and vent applications above ground.

NOTE - The titles of the publications referred to in this standard are listed at the end of the standard.