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SINGAPORE STANDARD

Code of practice for fire hydrant, rising mains and hose reel systems

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Co-opted Members	:	Mr K Ramanathan	*Individual Capacity*
		Er. Yeow Mei Leng	*Individual Capacity*

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

		Name
Convenor	:	Er. Yeow Mei Leng
Members	:	Er. Matthew Kwek Yoong Yoong
		Cpt Lim Boon Hsing
		Er. Ng Han Siong
		Er. Siew Yee Cheong
		Er. Wong Tak Ming Denis

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

Association of Consulting Engineers Singapore
Housing & Development Board
Institution of Engineers, Singapore
Singapore Civil Defence Force
The Institution of Fire Engineers (Singapore Branch)

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Foreword

This Singapore Standard was prepared by a Working Group appointed by the Technical Committee on Building Maintenance and Management which is under the purview of the Building and Construction Standards Committee.

This Code is intended to provide good guidance on fire hydrants, rising mains and hose reel systems in the area of fire protection. The information therein serves to promote the understanding of such systems by architects, engineers, contractors and owners.

The revision is to bring the standard up-to-date with the Fire Code and the relevant overseas standards and practices, in the following areas:

1. Terms and definitions
2. Design considerations for hydrants and rising mains
3. Water supplies and storage
4. Fire water pumpsets
5. Omission of Annex A which will be covered under the Fire Code.

In preparing this standard, reference was made to the following publications:

1.	AS 2419.1 : 2005	Fire hydrant installations – Part 1: System designs, installation and commissioning
2.	AS 2941 : 2008	Fixed fire protection installations – Pumpset systems
3.	BS 5306-0 : 2011	Code of practice for fire extinguishing installations and equipment on premises – Part 0: Guide for selection of installed systems and other fire equipment
4.	BS 5306-1: 2006	Code of practice for Fire extinguishing installations and equipment on premises – Part 1: Hydrant systems, hose reels and foam inlets
5.	NFPA 14 : 2007	Installation of standpipe and hose systems
6.	SS CP 48 : 2005	Code of practice for water services
7.	SS CP 52 : 2004	Code of practice for automatic fire sprinkler systems
8.	SS 532 : 2007	Code of practice for the storage of flammable liquids
9.	Code of practice for fire precautions in buildings (Singapore Civil Defence Force)	

Table 4.1, Figure 4.2 and Subclause 4.14 are reproduced from AS 2419.1 : 2005 with permission of SAI Global under licence 1202-c039. Australian Standards can be purchased at http://www.saiglobal.com.

Acknowledgement is made for the use of information from these publications.

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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.*
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Code of practice for fire hydrant, rising mains and hose reel systems

Section One – General

1.1 Scope

This Code shall apply to the planning, installation, testing and upkeep of fire hydrant, wet and dry rising mains and hose reel systems on building premises. It does not apply to street fire hydrants used in lieu of on-site fire hydrants or to supplement the coverage afforded by street fire hydrants.

1.2 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.

BS 143 and 1256	Threaded pipe fittings in malleable cast iron and cast copper alloy
BS 1212-1	Float operated valves – Specification for piston type float operated valves (copper alloy body) (excluding floats)
BS 1212-2	Float operated valves – Specification for diaphragm type float operated valves (copper alloy body) (excluding floats)
BS 1212-3	Float operated valves – Specification for diaphragm type float operated valves (plastics bodied) for cold water services only (excluding floats)
BS 2869	Fuel oils for agricultural, domestic and industrial engines and boilers
BS 5041-1	Fire hydrant system equipment – Part 1: Landing valves for wet risers
BS 5041-2	Fire hydrant systems equipment – Part 2: Landing valves for dry risers
BS 5041-3	Fire hydrant systems equipment – Part 3: Inlet breechings for dry riser inlets
BS 5041-4	Fire hydrant systems equipment – Part 4: Boxes for landing valves for dry risers
BS 5041-5	Fire hydrant systems equipment – Part 5: Boxes for foam inlets and dry riser inlets
BS 5163 series	Valves for waterworks purposes
BS EN 694	Fire-fighting hoses – Semi-rigid hoses for fixed systems
BS EN 671-1	Fixed fire fighting systems – Hose systems – Part 1: Hose reels with semi-rigid hose
BS EN 837-1	Pressure gauges – Bourdon tube pressure gauges – Dimensions, metrology, requirements and testing
BS EN 1092 series	Flanges and their joints

BS EN 1947	Fire-fighting hoses – Semi-rigid delivery hoses and hose assemblies for pumps and vehicles
BS EN 1982	Copper and copper alloys – Ingots and castings
BS EN 10226-1	Pipe threads where pressure tight joints are made on the threads – Taper external threads and parallel internal threads – Dimensions, tolerances and designation
BS EN 10241	Steel threaded pipe fittings
BS EN 10255	Non-alloy steel tubes suitable for welding and threading – Technical delivery conditions
BS EN 13709	Industrial valves – Steel globe and globe stop and check valves
BS EN 50342-1	Lead-acid starter batteries – General requirements and methods of test
BS EN 50342-2	Lead-acid starter batteries – Dimensions of batteries and marking of terminals
BS EN 60034 series	Rotating electrical machines
BS EN 60623	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells
BS EN 60947 series	Low-voltage switchgear and controlgear
SS CP 5	Code of practice for electrical installations
SS CP 48	Code of practice for water services
SS CP 52	Code of practice for automatic fire sprinkler system
SS 299-1	Fire resistant cables – Performance requirements for cables required to maintain circuit integrity under fire conditions
SS 508-3	Graphical symbols – Safety colours and safety signs – Safety signs used in workplaces and public areas
SS 532	Code of practice for the storage of flammable liquids
SS 555 series	Code of practice for protection against lightning

Code of practice for fire precautions in buildings