

SINGAPORE STANDARD

CP 52 : 2004

(ICS 13.220.20)

CODE OF PRACTICE FOR

Automatic fire sprinkler system

(Incorporating Erratum No. 1, June 2005)

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Foreword

This Code of Practice was prepared by the Technical Committee on Building Services under the purview of the Building and Construction Standards Committee (BCSC).

This code is intended to provide good guidance on design, installation, commissioning and maintenance of automatic fire sprinkler systems.

Automatic fire sprinkler systems will not be regarded as complying with these recommendations unless the installation is designed and supervised by professional engineers recognised by the relevant authority as being in this class of work.

In this revision, new clauses were added and existing ones reviewed to bring the code in line with the latest in sprinkler systems concept and technology.

The following main topics were introduced:

- a) Disallowing the use of suction lift pumps;
- b) Incorporating the special sprinkler systems, e.g. ESFR, large drop and deluge sprinkler systems;
- c) Vortex inhibitor;
- d) Remote test valve;
- e) System component fault monitoring;
- f) Location of sprinkler control valve;
- g) Protection against exposure hazard; and
- h) Full hydraulic calculations.

The following changes were made:

- a) Including more definitions;
- b) Revising the criteria of defining the limit to a single sprinkler installation to area of protection instead of number of sprinklers;
- c) Updating the list of hazard classification to follow closely to AS standards;
- d) Renaming of hazard classification;
- e) Revising the submission procedures for water services for the sprinkler systems;
- f) Removing re-cycling pre-action sprinkler system;
- g) Revising requirements of pump sets;
- h) Revising requirements for water alarm gong;
- i) Revising exemption list for non provision of sprinkler; and
- (j) Increasing maximum spacing between sprinklers for ordinary hazard group.

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

- a) AS 2118: 1999 Code for automatic fire sprinkler systems
- b) AS 4118: 1996 Code for components of automatic fire sprinkler systems
- c) AS 2941: 1995 Code for fixed fire protection installation – Pumpset systems
- d) NFPA 13: 1999 Installation of sprinkler systems
- e) NFPA 20: 1999 Installation of stationary pumps for fire protection
- f) Fire Precautions for Buildings 2002

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

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

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.*

Code of practice for automatic fire sprinkler system

1 Scope

This code sets out requirements for the installation of automatic sprinkler systems in buildings. It also provides for occupancy classification.

2 Definitions

For the purpose of this code the following definitions shall apply:

2.1 Alarm valve

A non-return valve which allows the water to enter the installation and operate alarms when the installation pressure falls below the water supply pressure

2.2 Approved

Approved by the relevant authority.

2.3 Assumed area of operation

The area, i.e. the maximum number of sprinklers likely to operate, in a sprinklered building which is considered may be involved in a fire. The assumed area of operation is different in each hazard class.

2.4 Maximum area coverage for sprinkler

The area covered by each sprinkler shall be defined by lines drawn midway between adjacent sprinklers at right angles to the line joining the sprinklers and by the boundary of the area covered.

2.5 Building owner

The owner of a building or his authorised representative.

2.6 Built-up air handling plant

An air handling unit which is built in-situ within a room enclosed by insulated walls.

2.7 Combustible

- a) When applied to a material, means combustible when tested in accordance with British Standard (BS) 476: Part 4
- b) When applied to construction or a part of a building, means constructed wholly or in part of materials that are combustible.

2.8 Cut-off sprinkler (or sprinklers)

A sprinkler (or sprinklers) in a non-sprinklered building or the non-sprinklered portion of a sprinklered building immediately over the lintel of a door or window, or similar opening, in either case to provide full protection at the opening.