

### SINGAPORE STANDARD

## Code of practice for fire safety for open plant processing facilities in oil, chemical and process industries



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The Working Group on Fire Safety for Open Plant Structures, appointed by the Technical Committee to assist in the preparation of this standard, comprises the following experts who contribute in their *individual capacity*:

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

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#### Foreword

This Singapore Standard was prepared by the Working Group appointed by the Technical Committee on Petroleum Processes and Products under the direction of the Chemical Standards Committee.

The purpose of this standard is to provide a conceptual and experience-based fire safety requirements and design for building open plant processing facilities in the oil, chemical and process industries. Reasonable provisions for the protection of properties, personnel and surroundings from damages resulting from fires are included.

In preparing this standard, reference was made to "Fire Safety Guidelines for Open Plant Structures in Oil, Chemical and Process Industries" published by the Singapore Chemical Industry Council. Acknowledgement is made for the use of information from this publication.

This standard is expected to be used by oil, chemical and process industries that have open plant facilities (inclusive of energy and utilities facilities) and relevant government agencies.

Attention is drawn to the possibility that some of the elements of this Singapore 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.
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- 3. Compliance with a SS or TR does not exempt users from any legal obligations

# Code of practice for fire safety for open plant processing facilities in oil, chemical and process industries

#### 1 Scope

This standard covers the layout and spacing of open plant processing facilities, drainage of spillages and firefighting water, isolation of the plant, provision of means of escape, passive and active fire protection systems, and access for emergency responders and appliances.

Recommendations set forth in this Standard are applicable to open plant processing facilities in the oil, chemical and process industries, including energy and utilities facilities.

This standard does not apply to the following:

- Atmospheric storage tanks, which is usually sited away from process units
- Pressurised storage tanks
- Cryogenic storage tanks

Note: Fire safety requirements for storage tanks are outside the scope of this Standard. The requirements for atmospheric storage tanks are detailed in SS 532 "The storage of flammable liquids". For LPG pressurised storage vessels, the requirements are detailed in NFPA 58, LPG code.

#### 2 Normative references

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

API 521	Guide for pressure-relieving and depressuring systems
API 752	Management of hazards associated with location of process plant permanent buildings
API 753	Management of hazards associated with location of process plant portable buildings
API 756	Management of hazards associated with location of process plant tents
IEC 60079	Classification of areas
NFPA 11	Low expansion foam and combined agent systems
NFPA 12	Carbon dioxide extinguishing systems
NFPA 15	Water spray fixed systems
NFPA 16	Standard for the installation of foam-water sprinkler and foam-water spray systems
NFPA 58	Liquefied petroleum gas code
NFPA 750	Standard on water mist fire protection systems
NFPA 2001	Standard on clean agent fire extinguishing systems

CP 10	Code of practice for the installation and servicing of electrical fire alarm systems
CP 52	Code of practice for automatic fire sprinkler system
SS 532	Code of practice for the storage of flammable liquids
SS 563	Code of practice for the installation and maintenance of emergency evacuation lighting and power supply systems in buildings
SS 575	Code of practice for fire hydrant, rising mains and hose reel systems
SS 578	Code of practice for use and maintenance of portable fire extinguishers
SS 593	Code of practice for pollution control
UL 1709	Standard for rapid rise fire tests of protection materials for structural steel

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