Australian Standard®

Gaseous fire extinguishing systems

Part 5: NAF S-III (HCFC Blend A) Total flooding systems

This Australian Standard was prepared by Committee FP/11, Fire Extinguishing Systems. It was approved on behalf of the Council of Standards Australia on 28 February 1995 and published on 5 June 1995.

The following interests are represented on Committee FP/11:

Australian Chamber of Commerce and Industry

Australian Construction Services—Department of the Arts and Administrative Services

Australian Fire Authorities Council

Australian Fire Protection Association

Commonwealth Fire Board

Department of Defence, Australia

Fire Protection Industry Association of Australia

Fire Trainers Association of Australia

Insurance Council of Australia

NZ Fire Equipment Association

NZ Fire Protection Association

NZ Fire Protection Industry Contractors Association

Railways of Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee FP/11 on Fire Extinguishing Systems.

This Standard is the result of consensus among representatives on the Joint Committee to provide it as an Australian Standard.

In order to maintain a compatible format in each part of AS 4214, *Gaseous fire extinguishing systems*, the section numbers have been maintained throughout the suite whether or not they are applicable to the particular part.

The objective of this Standard is to provide the users of NAF S-III systems with specific requirements for the control of fires of Classes A, B or C and E type. It does not cover the design of explosion suppression systems.

It is essential that fire extinguishing equipment be carefully maintained to ensure instant readiness when required. The importance of maintenance cannot be too highly emphasised. The maintenance requirements for NAF S-III system for fire protection equipment are detailed in another Standard.

NAF S-III containers, manufactured for use in Australia, are required to meet the design parameters as set out in AS 2030.1, *The approval, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases* (known as the SAA Gas Cylinders Code), Part 1: *Cylinders for compressed gases other than acetylene*.

Attention is drawn to AS 2030.1 as it requires cylinders to be designed for the pressure developed at 65°C. This is some 10°C higher than that nominated in overseas codes. Accordingly, this aspect should be kept in mind for any imported NAF S-III containers.

It is a basic assumption in all technical standards work that each Standard be used only by persons competent in the field of application with which it deals. This is of particular importance in fire protection work. Accordingly, it is emphasised that the design requirements in this Standard are to be interpreted only by trained and experienced designers.

This Standard does not include specific requirements for NAF S-III systems for marine or mobile applications. However, the method of calculation in this Standard may be of some assistance in the design of such systems.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

It is important that the fire protection of a building or plant be considered as a whole. NAF S-III total flooding systems form only a part, though an important part, of the available facilities. However, it should not be assumed that their adoption necessarily removes the need to consider supplementary measures, such as the provision of portable fire extinguishers or mobile appliances for first aid or emergency use, or measures to deal with special hazards.

NAF S-III is recognised as effective for extinguishing Class A, Class B and Class C fires where electrical risks are present. Nevertheless, it should not be forgotten in the planning of the comprehensive schemes that there may be hazards for which this technique is not suitable, or that, in certain circumstances or situations, there may be dangers in its use, requiring special precautions.

Advice on these matters can be obtained from organizations involved with the installation of NAF S-III total flooding systems.

STANDARDS AUSTRALIA

Australian Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard complements AS 4214.1 and sets out requirements for total flooding fire extinguishing systems, utilising HCFC Blend A for use in enclosed spaces. It applies to single supply or distributed supply systems.

The HCFC Blend A shall be referred to as NAF S-III in this Standard.

1.2 APPLICATION NAF S-III total flooding fire extinguishing systems, described as NAF S-III systems hereafter, shall comply with AS 4214.1 and the requirements of this Standard. Where requirements differ, this Standard takes precedence.

1.3 REFERENCED DOCUMENTS The following documents are referred to in this Standard.

AS
1650 Hot-dipped galvanized coatings on ferrous articles

1722 Pipe threads of Whitworth form
1722.1 Part 1: Sealing pipe threads

1850 Portable fire extinguishers—Classification, rating and performance testing

2030 The approval, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases (known as the SAA Gas Cylinders Code)
2030.1 Part 1: Cylinders for compressed gases other than acetylene

2129 Flanges for pipes, valves and fittings

2700 Colour standards for general purposes

3672 Wrought steel threaded pipe fittings

4041 Pressure piping

4214 Gaseous fire extinguishing systems
4214.1 Part 1: General requirements

4215.0 Methods of determining fire extinguishing and inerting concentrations for flammable liquids and gases

4215.1 Method 1: Determination of fire extinguishing concentrations
4215.2 Method 2: Determination of fire inerting concentrations

ASTM
A53 Specification for pipe, steel, black and hot-dipped, zinc coated welded and seamless

A106 Specification for seamless carbon steel pipe for high-temperature service