

AS 3689.1—1989

Australian Standard[®]

**Automatic fire extinguishing
systems using halogenated
hydrocarbons**

**Part 1: Halon 1301 total flooding
systems**

This Australian Standard was prepared by Committee FP/11, Gaseous Fire Extinguishing Systems. It was approved on behalf of the Council of Standards Australia on 2 February 1989 and published on 25 August 1989.

The following interests are represented on Committee FP/11:

Australian Assembly of Fire Authorities
Australian Fire Protection Association
Commonwealth Fire Board
Confederation of Australian Industry
Department of Housing and Construction
Fire Protection Industry Association of Australia
Railways of Australia Committee
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PREFACE

This Standard was prepared by the Standards Australia Committee on Gaseous Fire Extinguishing Systems.

There is currently no Australian Standard for halon 1301 total flooding systems, and the purpose of this Standard is to provide requirements for installation, design testing, and commissioning of automatic halon 1301 (bromotrifluoromethane) systems. This Standard does not cover the design of explosion suppression systems or local application 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 emphasized. A Standard for maintenance requirements for fixed fire extinguishing systems will eventually be published as a part of AS 1851, *Maintenance of fire protection equipment*.

The committee was guided substantially by developments of ISO Technical Committee TC 21 Equipment for Fire Protection and Fire Fighting, Subcommittee SC 5 Fixed Fire Extinguishing Systems, which is preparing an International Standard for halon 1301 total gas flooding systems.

Some requirements selected from the draft ISO TC 21 SC 5 Standard has been supplemented by design criteria. The major deviation from the ISO approach is that all pressures in this Standard are given in pascals to maintain uniformity with the International System of Units (SI). For information on SI units, reference should be made to AS 1000, *The International Systems of Units (SI) and its application*.

In the preparation of this Standard, account has also been taken of NFPA 12A, *Halon 1301 fire extinguishing systems*, and BS 5306, *Code of practice for fire extinguishing installations and equipment on premises, Part 5: Halon systems, Section 5.1: Halon 1301 total flooding systems*. Other references are in Appendix J.

Halon 1301 containers manufactured for use in Australia are required to meet the design parameters as set out in AS 2030.1, *SAA Gas Cylinders Code, Part 1: Cylinders for compressed gases other than acetylene*.

Attention is drawn to AS 2030.1 as it requires containers to be designed for a pressure developed at the nominated maximum service temperature of 65°C. This is some 10°C higher than that nominated in overseas halon 1301 codes such as NFPA 12A, BS 5306: Section 5.1, and the proposed ISO document, which specify a 55°C design and storage temperature. Accordingly this aspect should be kept in mind for any imported halon 1301 containers.

There is a need for dissemination of information on established system design and this Standard has been prepared to meet this need. Its requirements represent the best technical data known to the committee at the time of preparation, but since a wide field is covered it has been impracticable to consider every possible factor or circumstance that might affect implementation.

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 emphasized that the design requirements in this Standard are to be interpreted only by trained and experienced designers.

Due to current environmental concern, this Standard does not have a mandatory requirement for a full discharge test. Alternatives to the full discharge test and alternative testing agents are being investigated. When the results of the investigation are available, this Australian Standard will be reviewed in the light of new data.

This Standard does not include specific requirements for halon 1301 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.

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CONTENTS

	<i>Page</i>
FOREWORD	5
 SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE	6
1.2 APPLICATION	6
1.3 REFERENCED DOCUMENTS	6
1.4 DEFINITIONS	6
1.5 USES FOR AND LIMITATIONS OF HALON 1301 SYSTEMS	6
 SECTION 2. GENERAL REQUIREMENTS	
2.1 SAFETY OF PERSONNEL	8
2.2 ELECTRICAL CLEARANCES	8
2.3 SPECIFICATIONS, PLANS, AND APPROVALS	8
2.4 APPROVAL OF INSTALLATIONS	8
2.5 APPROVAL OF COMPONENTS	8
 SECTION 3. CONCENTRATION REQUIREMENTS	
3.1 GENERAL	9
3.2 APPLICATION RATE	9
3.3 CONCENTRATION, DISTRIBUTION, AND HOLDING	9
3.4 FLAMMABLE LIQUIDS AND GASES	9
3.5 COMBUSTIBLE SOLIDS	10
 SECTION 4. PROTECTED ENCLOSURE REQUIREMENTS	
4.1 UNCLOSABLE OPENINGS	11
4.2 VENTILATION AND SERVICES	11
4.3 PRESSURE RELIEF VENTING	11
 SECTION 5. QUANTITY REQUIREMENTS	
5.1 GENERAL	12
5.2 SPECIAL CONDITIONS	12
5.3 TOTAL FLOODING QUANTITY	12
 SECTION 6. HALON 1301 SUPPLY	
6.1 QUALITY	14
6.2 STORAGE CONTAINERS	14
6.3 VALVES	14
6.4 ISOLATING VALVES OTHER THAN CONTAINER OR DIRECTIONAL VALVES	14
6.5 PROTECTION FOR CONTAINER DISCHARGE VALVES IN TRANSIT	14
6.6 STORAGE CONTAINER ARRANGEMENT	14
 SECTION 7. DISTRIBUTION SYSTEM	
7.1 GENERAL	15
7.2 STEEL PIPE	15
7.3 COPPER PIPE	15
7.4 PIPING JOINTS	15
7.5 INSTALLATION OF PIPEWORK	15
7.6 FOREIGN MATTER	16
7.7 SAFETY DEVICES	16
7.8 PIPE AND NOZZLE SIZING	16
7.9 NOZZLES	16

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