

STANDARDS
Australia



AS 2118.4—2012

Automatic fire sprinkler systems

Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height



This is a free 8 page sample. Access the full version online.

Australian
STANDARD

AS 

Accommodation buildings

This Australian Standard® was prepared by Committee FP-004, Automatic Fire Sprinklers. It was approved on behalf of the Council of Standards Australia on 2 April 2012. This Standard was published on 22 May 2012.

The following are represented on Committee FP-004:

- Association of Consulting Engineers Australia
 - Australasian Fire and Emergency Service Authorities Council
 - Australian Building Codes Board
 - Australian Industry Group
 - Australian Institute of Building Surveyors
 - Consumers' Federation of Australia
 - Department of Defence (Australia)
 - Department of Human Services (Victoria)
 - Engineers Australia
 - Fire Protection Association Australia
 - Independent Chairperson
 - Insurance Council of Australia
 - National Fire Industry Association
 - Testing Interests (Australia)
-

This Standard was issued in draft form for comment as DR 07420.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

Automatic fire sprinkler systems

Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height

Originated as AS 2118.4—1995.
Second edition 2012.

COPYRIGHT

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 099 7

PREFACE

This Standard was prepared by the Standards Australia Technical Committee FP-004, Automatic Fire Sprinklers, to supersede AS 2118.4—1995, *Automatic fire sprinkler systems, Part 4: Residential*.

Sprinkler Standards consist of two groups: Systems (AS 2118 series) and Components (AS 4118 series). The complete series comprises the following:

AS

2118	Automatic fire sprinkler systems
2118.1	Part 1: General systems
2118.2	Part 2: Drencher systems
2118.3	Part 3: Deluge systems
2118.4	Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height (this Standard)
2118.5	Part 5: Home fire sprinkler systems
2118.6	Part 6: Combined sprinkler and hydrant
4118	Fire sprinkler systems
4118.1.1	Part 1.1: Components—Sprinklers and sprayers
4118.1.2	Part 1.2: Components—Alarm valves (wet)
4118.1.3	Part 1.3: Components—Water motor alarms
4118.1.4	Part 1.4: Components—Valve monitors
4118.1.5	Part 1.5: Components—Deluge and pre-action valves
4118.1.6	Part 1.6: Components—Stop valves and non-return valves
4118.1.7	Part 1.7: Components—Alarm valves (dry)
4118.1.8	Part 1.8: Components—Pressure-reducing valves
4118.2.1	Part 2.1: Piping—General

Changes to the previous (1995) edition of this Standard include the following:

- The water supply section has been expanded.
- A minimum design flow is specified.
- Design criteria for ancillary areas have been revised.
- Detailed sprinkler spacing and positioning requirements are included particularly related to obstructions, heat sources and sloped ceilings.
- Acceptance testing (commissioning) requirements are detailed.

Wall wetting sprinklers (drenchers) cannot be incorporated in sprinkler systems covered by this Standard. The requirements for such systems are addressed in AS 2118.2.

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.

The use of Notes in this Standard is of an advisory nature only. They provide explanations and guidance on recommended design consideration or technical procedures, as well as an informative cross-reference to other documents or publications.

This Standard incorporates a commentary on some of the clauses. The commentary directly follows the relevant Clause shown in italics font-type and enclosed in a panel. The commentary is for information only and does not need to be followed for compliance with the Standard. Commentaries on clauses explain the purpose of a Clause and give, in some cases, background information.

The designations accompanying Figure captions follow the Clause number to which the Figure relates, that is, they are not sequential.

CONTENTS

	<i>Page</i>
FOREWORD.....	5
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	6
1.2 APPLICATION	6
1.3 NORMATIVE REFERENCES	7
1.4 DEFINITIONS.....	7
SECTION 2 INSTALLATION	
2.1 GENERAL.....	9
2.2 EXTENT OF SPRINKLER PROTECTION	9
2.3 SMOKE ALARMS	10
2.4 SYSTEM TYPES.....	10
2.5 PIPE SIZING AND LAYOUT.....	11
2.6 AREA OF COVERAGE	11
SECTION 3 WATER SUPPLIES	
3.1 GENERAL.....	12
3.2 SOURCES OF SUPPLY	12
3.3 CONNECTION TO TOWN MAIN	15
3.4 SUPPLY, FLOW, PRESSURE AND DURATION.....	16
3.5 PUMPSETS	16
3.6 TANKS.....	19
3.7 CONNECTION TO FIRE HOSE REELS	20
3.8 FIRE BRIGADE BOOSTER CONNECTION	20
SECTION 4 DESIGN AND HYDRAULICS	
4.1 GENERAL.....	21
4.2 DOCUMENTATION.....	21
4.3 DESIGN CRITERIA.....	22
4.4 SPACING OF SPRINKLERS	22
4.5 COMPATIBILITY.....	34
4.6 IDENTIFICATION.....	34
4.7 SITE PLAN	34
4.8 EMERGENCY INSTRUCTIONS.....	35
4.9 HYDRAULIC CALCULATIONS	35
4.10 SYSTEM INTERFACE.....	35
4.11 PRESSURE GAUGE SCHEDULE.....	35
SECTION 5 COMPONENTS	
5.1 GENERAL.....	37
5.2 VALVES AND DRAINS.....	37
5.3 PRESSURE GAUGES.....	38
5.4 PIPE AND PIPE FITTINGS	38
5.5 SPRINKLERS	38
5.6 PROVISION FOR TESTING	38
5.7 ALARMS.....	39
5.8 TRANSMISSION OF ALARM SIGNAL TO FIRE SERVICE	39

SECTION 6 ACCEPTANCE TESTING

6.1 GENERAL..... 40
6.2 HYDROSTATIC PRESSURE TEST 40
6.3 PRE-TEST EQUIPMENT CHECKS 40
6.4 EQUIPMENT TESTS 40
6.5 WATER SUPPLY TESTS 41
6.6 FINAL SYSTEM CHECKS..... 43
6.7 DOCUMENTATION..... 43

APPENDIX A COMPLETION CERTIFICATE..... 44

BIBLIOGRAPHY..... 46

FOREWORD

This Standard provides criteria for automatic fire sprinkler protection in low-rise (four storeys or less) Class 2, Class 3 and Class 9C aged care buildings as defined in the Building Code of Australia (BCA).

The purpose of the Standard is to provide design, installation and acceptance testing (commissioning) criteria for sprinkler systems to aid in the detection and control of fires in accommodation buildings.

A sprinkler system designed and installed in accordance with this Standard is expected to prevent flashover (total involvement) in the room or area of fire origin, and to improve the chance for occupants to escape or be evacuated.

In preparing this Standard, the Committee considered the US National Fire Protection Association (NFPA) publication 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height*, and the assistance gained from this source is acknowledged.

STANDARDS AUSTRALIA

Australian Standard

Automatic fire sprinkler systems

Part 4: Sprinkler protection for accommodation buildings not exceeding four storeys in height

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies minimum criteria for the design, installation and acceptance testing of automatic fire sprinkler systems in accommodation buildings containing not more than four storeys.

C1.1 The installation of smoke alarms or a smoke detection system forms an integral part of a life safety package for accommodation buildings. The BCA should be referred to for the requirements covering smoke alarms and smoke detection systems for these buildings.

1.2 APPLICATION

This Standard is intended to provide a degree of protection for occupants of low-rise accommodation buildings (four storeys or less). The Building Code of Australia (BCA) references this Standard for use in Class 2 buildings, Class 3 buildings or Class 9C, aged care buildings, as applicable, see note to follow.

NOTE: To assist in applying this Standard, the following classification of buildings has been extracted from the BCA. Users are directed to the BCA to ensure this information is up to date.

- (a) Class 2: a building containing 2 or more sole-occupancy units each being a separate dwelling.
- (b) Class 3: a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including—
 - (i) a boarding-house, guest house, hostel, lodging-house or backpackers accommodation;
 - (ii) a residential part of a hotel or motel;
 - (iii) a residential part of a school;
 - (iv) accommodation for the aged, children or people with disabilities;
 - (v) a residential part of a health-care building which accommodates members of staff; or
 - (vi) a residential part of a detention centre.
- (c) Class 9C: a building of a public nature; an aged care building.

This is a free preview. Purchase the entire publication at the link below:

AS 2118.4 : 2012 : EN : COMBINED PDF

-
- ⊙ Looking for additional Standards? Visit SAI Global Infostore
 - ⊙ Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-

Need to speak with a Customer Service Representative - Contact Us