STANDARDS Australia

AS 2118.5—2008

Automatic fire sprinkler systems

Part 5: Home fire sprinkler systems

Australian STANDARD

AS

This Australian Standard® was prepared by Committee FP-004, Automatic Fire Sprinkler Systems. It was approved on behalf of the Council of Standards Australia on 11 February 2008.
This Standard was published on 23 May 2008.

The following are represented on Committee FP-004:

- Association of Consulting Engineers Australia
- Australasian Fire Authorities Council
- Australian Building Codes Board
- Australia Industry Group
- CSIRO
- Consumers Federation of Australia
- Department of Defence (Australia)
- Department of Human Services (Victoria)
- Engineers Australia
- Fire Protection Association Australia
- Insurance Council of Australia
- National Fire Industry Association
- Property Council of Australia

This Standard was issued in draft form for comment as DR 06464.

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Standards may also be withdrawn.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 5: Home fire sprinkler systems

First published as AS 2118.5—1995. (DOMESTIC SPRINKLERS)
Second edition 2008.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 8640 5

PREFACE

This Australian Standard was prepared by Standards Australia Committee FP-004, Automatic Sprinkler Systems, to supersede AS 2118.5—1995, *Automatic fire sprinkler systems*, Part 5: *Domestic sprinkler systems*.

This Standard was developed taking into consideration local and international Standards including NZS 4517—2003, *Fire sprinkler systems for domestic occupancies*, NFPA 13D, *Standard for Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes* and BS 9251:2005, *Sprinkler systems for residential and domestic occupancies. Code of Practice*.

The sprinkler Standards have been restructured into two groups: Systems (AS 2118 series) and Component (AS 4118 series) The complete series comprises the following:

AS		
2118	Automatic fire sprinkler systems	
2118.1	Part 1:	General requirements
2118.2	Part 2:	Wall wettings sprinklers (Drenchers)
2118.3	Part 3:	Deluge
2118.4	Part 4:	Residential
2118.5	Part 5:	Home fire sprinkler systems (this Standard)
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

This Standard incorporates a Commentary on some of the clauses. The Commentary directly follows the relevant clause shown in italic 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 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.

Notes in this Standard are advisory only.

CONTENTS

Page

Page

FOREWORD

This Standard represents an innovation in sprinkler design in Australia. It provides economical and cost-effective automatic fire sprinkler protection for homes and has been especially written for use by authorized plumbers or sprinkler fitters who would, with appropriate training and education, carry out the majority of installations. The prime objective of a home sprinkler system is to allow the occupants to escape in the event of fire. A sprinkler system installed in accordance with this Standard is expected to prevent flashover (total involvement) in the room of fire origin.

Sprinkler systems have become the most widely used and most reliable automatic means of fire protection. Sprinkler systems automatically detect a fire and act to control or extinguish it. They are located in places where people cannot always be present and operate only as needed in the immediate vicinity of the fire. They have important life safety benefits, and can prevent fires from reaching destructive proportions, which may mean the difference between a minor inconvenience and a major tragedy.

A typical home sprinkler system consists of a piping network, connected to a permanent water supply feeding automatic sprinklers located in cooking, living and sleeping areas throughout the home. Convected heat from a fire causes operation of one or more thermally sensitive sprinklers, thereby permitting water to be discharged directly over the fire-affected area.

This edition of the Standard introduces the concept of ‘combined’ systems serving both domestic water fixtures and appliances and fire sprinklers whilst retaining provisions for ‘independent’ systems serving separate sprinkler and domestic water fixture and appliance piping. It is envisaged that new homes would utilize the combined system option and independent system option would generally be considered more practical for existing homes.

Selection, location and spacing of sprinklers is adequately covered in the Standard, but combined sprinklers will require the evaluation of the available water supply and flow calculations to determine pipe sizes. Although pipe sizing tables are provided in the Standard, the use of a computer-based hydraulic flow program may assist in determining the most efficient pipe sizing.

Appendix G sets out a test for the protection of sprinkler pipe against fire. However, Clause 5.2.2 does not mandate a test method. Appendix G provides for a test for assessing protection against fire of listed plastics pipe and fittings installed above ceiling arrangements. Although the test is optional, the appendix is written in normative terms.

This Standard does not address bushfire protection. It is not intended to deal with exterior protection of homes exposed to fire, or multiple interior fires that may occur as a result of exposure to severe fire fronts such as those associated with bushfires.

STANDARDS AUSTRALIA

Australian Standard
Automatic fire sprinkler systems

Part 5: Home fire sprinkler systems

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies minimum requirements for the components, design, installation, commissioning and maintenance of automatic home fire sprinkler systems for one- and two-family homes. It provides two options, namely an independent piping system serving fire sprinklers only or a combined piping system serving both the fire sprinklers and the domestic plumbing fixtures.

This Standard is intended to provide a degree of life safety and property protection for the occupants of one- and two-family homes as follows:

(a) Single dwellings, detached houses.

(b) Terrace houses, townhouses, villa units (multiple adjoining dwellings which are separated by fire rated walls).

(c) Moveable or relocatable dwellings.

(d) Cabins.

(e) 'Granny' flats.

This Standard does not apply to residential occupancies covered by AS 2118.1 (general systems) and AS 2118.4 (residential systems).

NOTES:

1 This Standard provides minimum requirements; however, in certain circumstances, such as concealed spaces used for storage purposes, extended protection may be considered. Guidance on optional additional protection is given in Appendix A.

2 The installation of smoke alarms forms an integral part of the requirements of this Standard.

3 The design criteria in this Standard are aimed at maintaining survival conditions for a period of at least 10 min during which it is assumed that evacuation will be accomplished.

4 Consumer information is provided in Appendix B.

5 Guide to function and benefits of home sprinklers is provided in Appendix C.

6 Information on maintenance is given in Appendix D.

1.2 OBJECTIVE

The objective of this Standard is to provide a sprinkler system that, together with smoke alarms, will detect and control fires in a home, thus providing a level of protection against injury or loss of life, together with reduction of property damage. A sprinkler system designed and installed in accordance with this standard is expected to delay and possibly prevent flashover (total room involvement) in the room of fire origin and to improve the likelihood of occupants escaping or evacuating.

