AS 2419.1:2021

Australian STANDARD®

STANDARDS Australia

Fire hydrant installations

Part 1: System design, installation and commissioning

AS 2419.1:2021

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Association of Accredited Certification Bodies
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Australian Building Codes Board
Australian Fire Safety Practitioner's Accreditation Board
Australian Industry Group
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Australian Stainless Steel Development Association
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Hydraulic Consultants Association Australasia
Insurance Council of Australia
International Copper Association Australia
Master Plumbers Australia and New Zealand
National Fire Industry Association
Plastics Industry Pipe Association of Australia
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Preface

This Standard was prepared by the Standards Australia Committee FP-009, Fire Hydrant Installations, to supersede AS 2419.1:2017.

A list of all parts in the AS 2419 series can be found in the Standards Australia online catalogue.

The objective of this Standard is to specify the minimum requirements for the design, installation, and commissioning of fire hydrant systems which —

(a) will facilitate the efficient extinguishment of fire within the boundaries of the site;

(b) can be used to minimize fire spread within or between one building or site and another;

(c) can be used by trained firefighting personnel; and

(d) have inlet and outlet connections that are used with the local fire brigade's firefighting equipment.

The major changes in this edition are as follows:

(i) Restructure of the document and content to improve its use and readability.

(ii) Limit the scope to buildings having an effective height not more than 135 m to Class 7b or 8 buildings having a total volume not more than 108 000 m³, and to buildings that do not include automatic racked storage systems.

(iii) Include informative appendices to clarify the intent of sections and clauses.

(iv) Include new technologies and industry best practices to enable competitive and cost-effective design and water conservation.

(v) Divide the previous Section 8 (Pipework and valves) into two sections.

(vi) Acknowledge the benefits of installed sprinkler systems to control the development and spread of fire.

(vii) Introduce a range of requirements for high-rise buildings based on internationally applied Standards.

Notes or footnotes to tables or figures that are expressed in mandatory terms are deemed to be requirements of this document.

Notes to clauses in this document are informative only and do not include requirements.

The terms "normative" and "informative" are used in Standards to define the application of the appendices to which they apply. A "normative" appendix is an integral part of a Standard, whereas an "informative" appendix is only for information and guidance.

Contents

Introduction

The availability of fire hydrants is essential to fire protection. Fire hydrants are used to control the spread of fire, protect neighbouring properties, extinguish an outbreak of fire, or extinguish a fire controlled by an automatic fire protection system, such as a sprinkler, gaseous or foam system.

Fire hydrants are installed within buildings or sites for use by the fire brigade and other trained firefighting personnel. Fire hydrant systems are only used for firefighting purposes.

The provision of firefighting services across Australia varies greatly between rural and metropolitan areas. Should a fire occur in a large metropolitan area, a vast array of resources and large numbers of personnel can be mobilized if needed. This resource capability is not available, however, in rural and country areas, with many such areas having access to a single pumping appliance and a limited number of personnel. In developing a fire hydrant design, the resources available to the attending fire brigade should be taken into account so that the design developed meets their needs.

In designing a fire hydrant system, external hydrants are provided wherever possible so that the attending fire brigade can enter the building under the protection of a charged hose line. Where internal fire hydrants are required to be installed, consistent and repeating hydrant patterns should be applied across floors so that firefighters can move confidently throughout the building in the knowledge that a fire hydrant can be found where expected. The application of this design approach will enable firefighters to enter buildings under the protection of a charged line of hose and to readily access fire hydrants as firefighters move throughout the building.

The water supply is a fundamental consideration in the design of a fire hydrant installation and may comprise water from more than one source.

NOTES

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Part 1: System design, installation and commissioning

Section 1 Scope and general

1.1 Scope

This document specifies the requirements for the design, installation, commissioning and testing of fire hydrant installations.

This document applies to on-site fire hydrant installations for —

(a) class 7b or 8 buildings having a total volume not more than 108 000 m^3;

NOTE 1 See Appendix C for guidance on Class 7b or 8 buildings having a total volume more than 108 000 m^3.

(b) buildings that do not include automatic racked storage systems;

NOTE 2 See Appendix C for guidance on buildings that include automatic racked storage systems.

(c) buildings having an effective height not more than 135 m; and

NOTE 3 See Appendix D for guidance on buildings having an effective height more than 135 m.

(d) buildings and associated areas that do not include special hazards.

NOTE 4 See Appendix E for buildings and associated areas that include special hazards.

This document may apply, either in part or in full, to any —

(i) buildings outside the scope of this document; or

(ii) sites, including any storage yard, marina, wharf, plant, or infrastructure.

This document does not apply to the design or performance of reticulated water supplies and street hydrants controlled by the network utility operator. However, this document does permit the use of street fire hydrants in lieu of on-site feed fire hydrants, provided they conform to the requirements for feed fire hydrants in relation to location, available pressure, and flow.

The flow requirements in this document, which are based on the floor area of a building, provide sufficient water to enable firefighting operations to commence at a single location within a building or site. Where a risk assessment of a building or site determines that multiple ignitions or rapid-fire growth and spread is probable, then additional provisions are considered.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1074, *Steel tubes and tubulars for ordinary service*

AS 1275, *Metric screw threads for fasteners*

AS 1281, *Cement mortar lining of steel pipes and fittings*

AS 1345, *Identification of the contents of pipes, conduits and ducts*