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Australian Standard 2419—1980

INSTALLATION OF FIRE HYDRANTS

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STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Water and Sewerage Authorities

Board of Fire Commissioners of New South Wales

Building Owners and Managers Association of Australia Ltd.

Commonwealth Fire Board

Confederation of Australian Industry

Department of Defence

Department of Housing and Construction

Insurance Council of Australia

Metropolitan Fire Brigade Board, Victoria

Metropolitan Water Sewerage and Drainage Board, N.S.W.

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AUSTRALIAN STANDARD

INSTALLATION OF FIRE HYDRANTS

AS 2419—1980

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PREFACE

This standard was prepared by the Association's Committee on Fire Hydrant Installations.

The standard provides rules for the installation of fire hydrants within properties. It does not include hydrants which are installed by water supply authorities on street mains.

Hydrants on properties may be installed and equipped for use by the occupier in the early stages of a fire. However, particularly in the case of larger low-rise installations and high-rise installations, the hydrant installation will be used by fire brigade personnel.

The variation in duration of water supply required for low-rise installations and high-rise installations is based on a number of considerations as follows:

(a) Industrial processes in a low-rise building can result in a higher fire load than would be reasonably expected in a high-rise building.

(b) Water storage in a high-rise building can be an expensive item.

(c) In a high-rise building, the structure will possibly withstand the effects of fire. The intent is to provide sufficient water to control the fire while people are being evacuated.

(d) In a low-rise building, water storage is simplified, escape is relatively easy and the building and contents are being protected.

The requirements for maintenance of fire hydrant installations are set out in AS 1851, Part 4.

This standard requires reference to the following Australian standards:

AS 1349 Bourdon Tube Pressure and Vacuum Gauges
AS 1940 SAA Flammable and Combustible Liquids Code
AS 2118 SAA Code for Automatic Fire Sprinkler Systems
AS 2200 Design Charts for Water Supply and Sewerage
AS K185 Colours for Specific Purposes

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
INSTALLATION OF FIRE HYDRANTS

1.1 SCOPE. This standard sets out requirements for the installation of fire hydrant systems within properties. An appendix is included on fire hose nozzle discharge and pressure loss in fire hose.

1.2 DEFINITIONS.

1.2.1 Authority having jurisdiction—a Statutory Authority administering Acts of Parliament or Regulations under such Acts.

1.2.2 Approved and approval—approved by, or the approval of, the authority having jurisdiction.

1.2.3 Fire brigade booster connection—a connecting device enabling the fire brigade to pressurize or pump water into a fire hydrant system.

1.2.4 High-rise installation—a fire hydrant installation in a multi-storey building with a height of 12 m or more from ground level to the level of the top floor.

1.2.5 Low-rise installation—a fire hydrant installation in which the pipework does not exceed a height of 12 m from ground level.

1.2.6 Fire hydrant—a fitting installed in a water pipeline which provides a valved outlet to permit a controlled supply of water to be taken from the pipeline for firefighting.

1.2.7 Hydrant valve—a valve controlling the flow of water from the fire hydrant outlet with provision for the attachment of a fire hose.

1.3 TYPE OF SYSTEM. The hydrant system shall be a wet-pipe system having the supply valve open and water pressure maintained at all times, or so arranged that the water supply is boosted by the operation of approved devices.

The authority having jurisdiction may permit a combination of these types in a single installation.

NOTE: In areas subject to freezing conditions, a dry-pipe hydrant system may be approved by the authority having jurisdiction, provided that fire hose reels are not connected to the system and that provision is made for the rapid release of air from all parts of the pipework.

1.4 PLANS AND SPECIFICATIONS. Where a fire hydrant installation is required by the authority having jurisdiction, plans showing the location, sizes and connections of the fixed portion of the hydrant system shall be furnished to the authority having jurisdiction for approval. The plans shall—

(a) be drawn to scale;

(b) clearly indicate all hydrant system equipment and its arrangement; and

(c) show partitions, doorways, proposed storage arrangements, racks, equipment, plant and machinery which may restrict normal hose coverage through the building and plant.

The plans shall be accompanied by material specifications and calculation schedules detailing water supply and system demand characteristics.

NOTE: Unusual conditions in a specific application may create the necessity for some of the detailed requirements of this standard to be waived by the authority having jurisdiction.

1.5 EXPERIENCED WORKMEN. The installation of hydrant systems shall be undertaken, or supervised, by qualified personnel recognized for this class of work by the authority having jurisdiction.

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SECTION 2. SOURCES OF WATER SUPPLIES

2.1 ACCEPTABLE SOURCES OF SUPPLY. The following sources of supply to a fire hydrant installation shall be acceptable:

(a) Town mains.

(b) Ground level private reservoir.

(c) Elevated private reservoir.

(d) Rivers or lakes.

NOTE: Subject to approval, an internal water reticulation system within an establishment, capable of supplying peak flows at the required duration for domestic fire services and sprinkler installations, and designed as a ring system with adequate valving, may be considered as a town main.

2.2 CAPACITY OF ACCEPTABLE SOURCE OF SUPPLY. An acceptable source of supply shall be capable of supplying to a fire hydrant installation the minimum flow rates given in Clause 3.7.2 for a period not less than 4 h.

If a private water storage is provided within an establishment as the acceptable source of supply against this requirement, its capacity may be reduced by the amount of any reliable make-up water that is available, but the reduced capacity shall not be less than 3 hours' supply at the minimum flow rates given in Clause 3.7.2.

2.3 FIRE BRIGADE BOOSTER CONNECTION.

2.3.1 General. Fire brigade booster connections shall be fitted to fire hydrant systems.

NOTE: The authority having jurisdiction may waive this requirement. An example could be where the water supply, excluding boosted supply, is considered sufficient for an installation with a small number of hydrants.

2.3.2 Location. Fire brigade booster connections shall be located so that—

(a) they are readily accessible to fire brigade personnel;

(b) they are at or near grade level; and

(c) fire brigade appliances can approach to within 15 m.

2.3.3 Fittings. Each connection shall be fitted with—

(a) a full-way non-return valve;

(b) an approved hose connection equipped with a standard cap;

(c) a bleed valve to relieve pressure on the pipe between the non-return valve and the hose connection, which shall drain to a suitable visible place; and

(d) any other fittings required by the water supply authority.

2.3.4 Enclosure. The enclosure in which the fire brigade booster connection is housed shall be marked with the words 'HYDRANT BOOSTER CONNECTION' in letters not less than 50 mm high and of contrasting colour.

Adjacent to the connection shall be clearly marked the maximum working pressure of the hydrant system. If the connection does not serve the complete hydrant system, it shall be clearly marked to indicate that part of the system which it serves and the maximum working pressure for that part of the system.

Provision shall be made for drainage of the enclosure.

NOTE: The authority having jurisdiction may require a schematic diagram of the hydrant system to be located in the enclosure.

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