



## Advisory Notice Building 02/25

# Fire systems that rely on street fire hydrants

This Advisory Notice provides guidance about the design, assessment and maintenance of fire systems that rely on street fire hydrants under the *Planning, Development and Infrastructure Act 2016*.

## Background

Fire hydrant systems for Class 2 to 9 buildings must be designed and installed in accordance with the National Construction Code (NCC). The design solution must confirm the water supply is sufficiently reliable for firefighting purposes and complies with NCC requirements.

The responsibility for maintaining the operational performance of a fire hydrant system rests with the building owner. Owners of buildings relying on fire hydrants located in a street or public place for their fire safety compliance must implement appropriate maintenance and testing procedures to promptly address any changes in performance or compliance.

## Discussion

### NCC requirements

Performance Requirement E1P3(a) requires fire hydrant systems to be provided for Class 2 to 9 buildings to facilitate the needs of the fire brigade. The systems must be appropriate to firefighting operations, the floor area of the building, and the fire hazard.

The fire hydrant system must be installed in accordance with Australian Standard AS 2419.1 *Fire hydrant installations: System design, installation and commissioning*, which permits the use of a pillar hydrant (above ground) or fire plug (below ground) located in a street or public place in some circumstances.

The NCC allows reliance on a street fire hydrant (pillar hydrant or fire plug) when the requirements of AS 2419.1 Clause 3.5.2 can be met. The required minimum flow and pressure must be achieved at the outlets of pillar hydrants or standpipes connected to fire plugs. Where this minimum supply performance cannot be met, an onsite fire hydrant system will be required.

## Design considerations

When selecting an appropriate fire hydrant solution for a building, designers and building owners must consider the reliability and performance of the water supply for firefighting purposes.

The reticulated water supply is usually sufficiently reliable for firefighting purposes, but there are limitations that can impact its ongoing reliability and performance:

- Water is supplied for many purposes, with fire safety not being the primary function.
- Changes in consumer demand mean water pressure and flow rates often vary over time.
- Some supply authorities are reducing pressure as a water efficiency measure.
- No Australian Standard applies to water supply authorities.
- Water supply authorities are not required to maintain certain pressures or flow rates.

### *Onsite fire hydrant system*

A system incorporating onsite storage and pumping facilities provides an assured water supply for firefighting purposes and is the only available option in some cases.

Where it is proposed that the onsite system utilise the reticulated water supply, a dedicated fire service connection must be approved by SA Water. A flow test and network analysis to confirm the water flow and pressure are required as part of the application process.

### *Fire system relying on a street fire hydrant*

A fire system may rely on a street fire hydrant when the reticulated water supply is determined to be sufficiently reliable and SA Water flow testing confirms the minimum flow and pressure requirements can be met.

However, changes in the available water supply can mean that a system deemed compliant today does not remain compliant in the future, particularly if the initial supply performance only just achieves the minimum requirements. Additionally, flow testing may no longer be viable when a water main services a high volume of customers or is classified as critical infrastructure. The designer and building owner must carefully consider the risk of failing to achieve the required supply performance or maintenance requirements in the future.

Retrospective installation of an onsite fire hydrant system, particularly where tanks and pumps are required, often presents challenges that can result in significant costs to the building owner.

## Building rules assessment

A referral to the relevant fire authority for comment on the proposed use of street fire hydrants in lieu of an onsite hydrant system may be required under regulation 45 of the *Planning, Development and Infrastructure (General) Regulations 2017* to ensure the proposed system is compatible with their requirements.

Evidence of SA Water flow testing must be provided as part of the application for building rules consent. The relevant authority for assessment must confirm the performance (pressure and flow rate) of a reticulated water supply achieves the required minimum supply performance before granting building consent.

Street fire hydrants must be included in the *Schedule of Essential Safety Provisions* (ESP Form 1) for maintenance and testing in accordance with Ministerial Building Standard MBS 002 *Maintaining the performance of essential safety provisions*.

Options for completing the Schedule for street fire hydrants are provided in MBS 002. Sufficient information to identify the relevant street fire hydrant should be included to easily facilitate maintenance, testing and rectification works by SA Water. It is recommended that the SA Water ID number of the street fire hydrant be recorded for this purpose.

### **General maintenance**

Street fire hydrants are provided by SA Water for general firefighting coverage as part of the water reticulation network. They are provided and maintained under the relevant SA Water legislation and can be removed at SA Water's discretion. The distribution and location of street fire hydrants are usually compatible with firefighting operations but do not service individual properties.

Maintenance of the water reticulation network is the responsibility of SA Water and their works on the network can result in temporary water supply restrictions. Building owners should report issues with street fire hydrants – like reduced pressure/flow, leaks, missing identification, impeded access, obstructions or removal – to SA Water promptly.

### **Maintenance of Essential Safety Provisions (ESPs)**

Building owners must ensure that all ESPs are tested and maintained in accordance with the Schedule of Essential Safety Provisions (ESP Form 1). The council may ask the building owner to provide annual proof (ESP Form 3) that the required maintenance and testing has been completed. Where available, the relevant ESP forms can be provided by the council.

Consequently, the building owner must arrange (at their cost) the required SA Water testing to ensure the street fire hydrant serving their building continues to achieve the required performance for firefighting purposes. Where several buildings rely on a particular street fire hydrant, building owners can combine their testing requirements to minimise the cost. In some instances, SA Water may opt not to flow test due to potential network impacts and will work with the building owner to identify an alternative solution.

This responsibility to arrange the required testing, as well as promptly report maintenance issues to SA Water, is considered reasonable as the building owner is replacing the capital cost of an onsite water supply (reliable and controllable) with a low-cost water supply for firefighting purposes (reduced reliability control). It also ensures the building owner is informed of any performance changes that must be addressed to maintain the required fire safety to the building.

If the maintenance flow test fails, the fire hydrant system does not comply with ESP and must be rectified. The building owner should first contact SA Water to check for possible causes of the reduced water supply, such as work on the reticulation network, closed valves, or hydrant valves requiring maintenance or replacement. It may be possible to identify a nearby street fire hydrant for use until the issue can be addressed.

If the water supply issue cannot be resolved or testing requirements cannot be met, further options to achieve compliance with the ESP must be investigated. Installation of an onsite fire hydrant system, storage tanks or pumping facilities may be required.

## Additional information

- Information about South Australian fire authority (MFS/CFS) requirements for hydrant systems, water supplies for firefighting purposes and fire pumps can be found on the respective fire brigade websites or by contacting the relevant agency.
- Apply for flow tests at [www.sawater.com.au/building,-developing-and-plumbing/connecting-to-sa-water-services/application-forms](http://www.sawater.com.au/building,-developing-and-plumbing/connecting-to-sa-water-services/application-forms)
- Information about fire service connections is available at [www.sawater.com.au/help-and-support/what-is-a-fire-service-connection-and-how-do-you-apply](http://www.sawater.com.au/help-and-support/what-is-a-fire-service-connection-and-how-do-you-apply)
- Report issues with street fire hydrants to SA Water at [www.sawater.com.au/works-and-faults](http://www.sawater.com.au/works-and-faults) or phone 1300 729 283.

### For more information:

Metropolitan Fire Service (MFS)  
Built Environment Section  
Community Safety & Resilience  
Department

**T** (08) 8204 3611  
**E** [mys.communisafes@eso.sa.gov.au](mailto:mys.communisafes@eso.sa.gov.au)  
**W** [www.mfs.sa.gov.au/community-safes/building-and-commercial-fire-safes](http://www.mfs.sa.gov.au/community-safes/building-and-commercial-fire-safes)

Country Fire Service (CFS)  
Development Assessment Service

**T** (08) 8115 3372  
**E** [cfs.dascommercialteam@eso.sa.gov.au](mailto:cfs.dascommercialteam@eso.sa.gov.au)  
**W** [www.cfs.sa.gov.au/plan-prepare/planning-building/](http://www.cfs.sa.gov.au/plan-prepare/planning-building/)

SA Water  
Connections Team

**T** 1300 650 951  
**E** [customer-care@sawater.com.au](mailto:customer-care@sawater.com.au)

Building Policy and Programs  
Planning and Building  
Department for Housing and Urban  
Development

**T** 1800 752 664  
**E** [plansa@sa.gov.au](mailto:plansa@sa.gov.au)  
**W** [plan.sa.gov.au/resources/building](http://plan.sa.gov.au/resources/building)

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