



## **Policy and guidance for water supplies for domestic and residential fire sprinkler systems**

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This guidance is intended for housing developers or sprinkler installers who wish to install domestic/residential sprinkler systems in new or existing properties.

For properties where domestic/residential fire sprinkler systems are installed, Affinity Water cannot guarantee pressures and flows above the minimum guaranteed standards for pressure and flow. These are 1 bar (10m head) pressure and 9 litres per minute flow. This should always be taken into consideration by the designer/installer before proceeding with any installation.

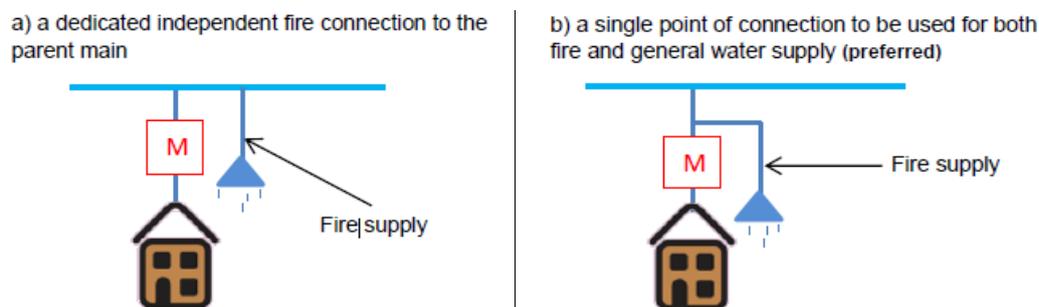
Affinity Water will not carry out the connection to the mains until we are satisfied that the installation complies with the Water Supply (Water Fittings) Regulations 1999. All domestic sprinkler systems shall be notified to Affinity Water under Regulation 5, the notification must include full mechanical drawings showing pipe runs, details of any pumped storage and a full fittings schedule, to demonstrate fittings comply with Regulation 4 requirements. A condition of supply shall be that any domestic or residential fire sprinkler system will be installed to an appropriate British or European Fire Sprinkler Standard. Information should be provided on the Standard under which the Sprinkler system is to be installed

Owners/occupiers have a legal obligation to ensure that their plumbing system complies with The Water Supply (Water Fittings) Regulations 1999. Where owners/occupiers have failed to comply with the Regulations, this failure could result in legal action taken and the owner/occupier may be liable on summary conviction by a Magistrates Court to a fine of up to £1,000 per fault.

## 1. Connection to Affinity Water main

Fire supplies may either be supplied by a) a dedicated independent fire connection to the parent main or b) a single point of connection to be used for both fire and general water supply.

Affinity Water preference is for b) a single point of connection to be used for both fire and general water supply provided no fire fighting water passes through a meter.



Affinity Water will install a controlling valve within the public footway which can be used for isolating both the domestic and fire sprinkler supplies if required

Where a domestic/residential sprinkler system is to be installed within an existing premise(s), and the existing service pipe is not able to deliver the required flow, the applicant should request a replacement or upgraded service pipe.

## 2. Water charges

In accordance with Guidelines for the Supply of Water to Automatic Fire Sprinkler Systems, fire supplies for the purpose of fire sprinkler systems will not be metered for billing, however where required, a check meter may be installed on fire sprinkler supplies so long as this installation does not impinge on the ability of the sprinkler system to operate. A check meter is a meter installed by the Water Company to monitor potential illegal usage or for leakage monitoring purposes, where no standing or volumetric charge is made.

A meter will however be installed on the domestic usage supply.

## 3. Direct, storage and pumped systems

Sprinkler systems are generally:

- direct mains fed systems;
- direct mains fed boosted systems;
- or fed from a storage tank (by gravity or pumped).

Regardless of which installation method is used in the above diagrams, an isolating valve and an appropriate backflow prevention device must be fitted between the mains supply and the sprinkler installation. The appropriate backflow must be installed customer side and as near as possible to the boundary or as near as practically possible to the parent pipe whichever is applicable.

If the sprinkler supply pipe has an Internal diameter of 50mm or above a service valve is required to be installed either side of the backflow protection. If this is external to the property they must be located in a chamber large enough to allow maintenance of the valves and backflow protection device. Internally installations should allow sufficient space for full maintenance of all equipment.

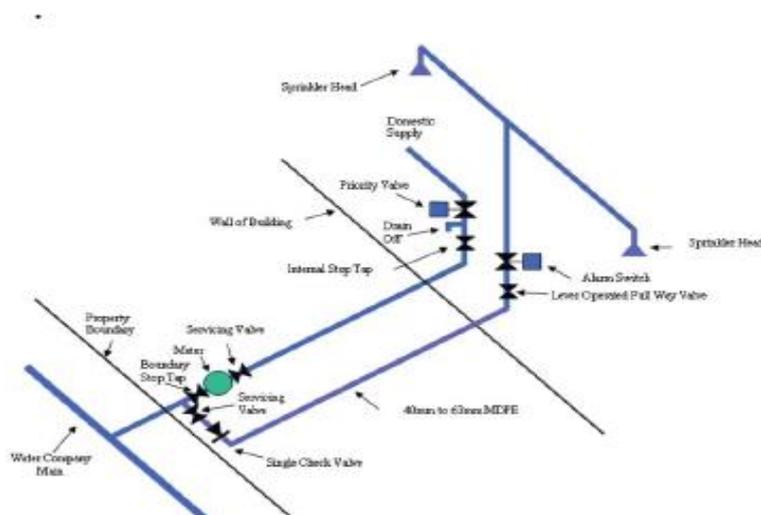
For more information email [networkregulation@affinitywater.co.uk](mailto:networkregulation@affinitywater.co.uk)

Maintenance of this device is the sprinkler user's responsibility and is subject to inspection by Affinity Water Network Regulations.

#### a. Direct mains fed systems

Sprinkler systems may only be fed via a direct mains connection where the pressure and flow requirements of the sprinkler installation do not exceed the available flow and pressure within the water mains under normal operating conditions.

Where a direct mains fed system is to be installed, an example of pipework layout that can be used to give an acceptable water supply arrangement for the fire sprinkler system is in Figure 1 below.



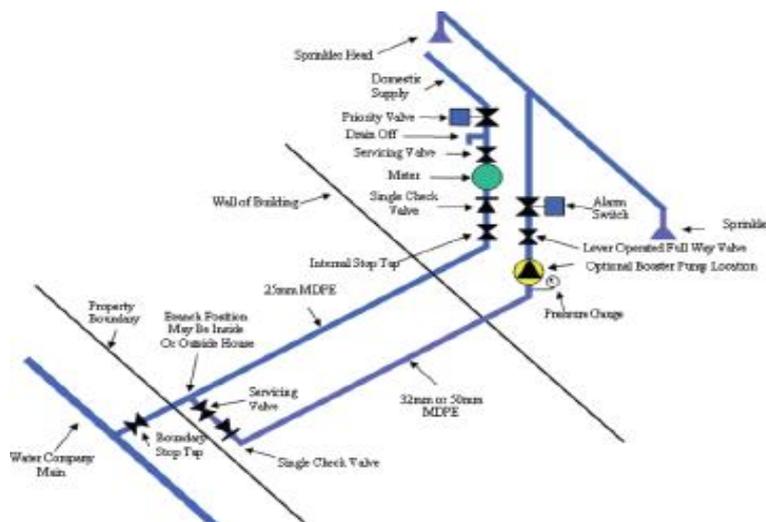
#### b. Direct mains fed boosted systems

Direct mains fed boosted systems are only permitted with Affinity Water consent. Consent will only be provided if:

- Inclusion of a pump connected directly or indirectly (i.e. via a break cistern) to a supply pipe which has the capacity to draw more than 12 litres per minute must be notified to and agreed with Affinity Water. This can be done by notifying Affinity Waters, Water Fittings Network Regulations Team prior to installation at, [network.regs@affinitywater.co.uk](mailto:network.regs@affinitywater.co.uk)
- It can be proved through our Infoworks WS models that the network will not be compromised by the pump or booster when operated at its design limit;
- Suitable measures are in place to ensure that the pump will not induce negative pressure in the parent main;

Where a direct mains fed boosted system has been agreed, an example of pipework layout that can be used to give an acceptable water supply arrangement for the fire sprinkler system is in Figure 2 below.

Figure 2: Direct mains fed boosted system (only with consent from Affinity Water)



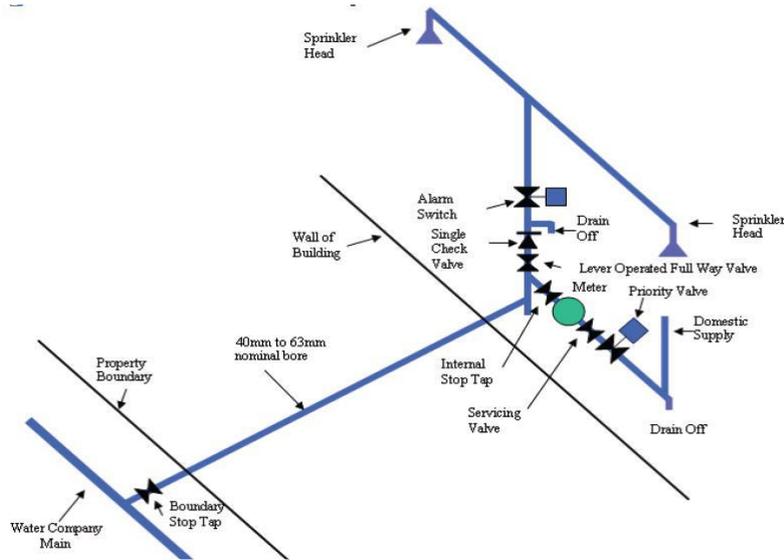
### c. Direct mains fed systems – internal meter or wall mounted meter box

Where a sprinkler system is to be installed in a new residential premise with internal meter, an example of pipework layout that can be used to give an acceptable water supply arrangement for the fire sprinkler system is in Figure 3 below.

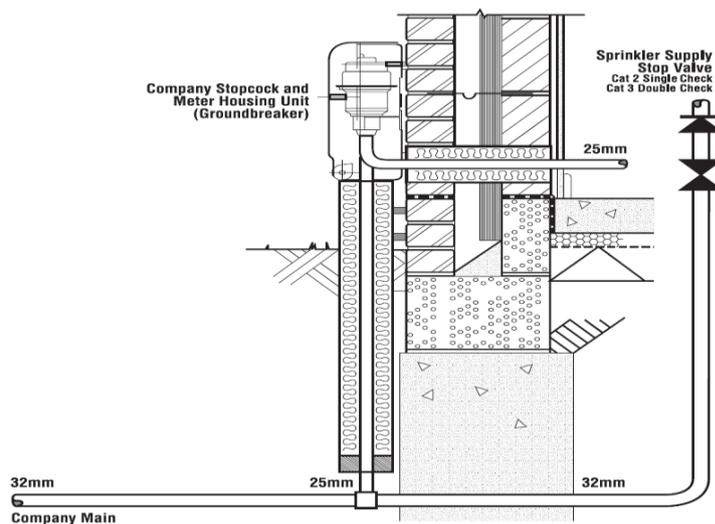
In general, Affinity Water does not install wall mounted meter boxes such as Groundbreaker wall boxes, however where this has been specifically requested it should be installed in accordance with Affinity Water guidance.

Where a direct mains fed system with wall mounted meter box has been agreed, an example of pipework layout that can be used to give an acceptable water supply arrangement for the fire sprinkler system is in Figure 4 below.

**Figure 3: New residential premises with internal meter**



**Figure 4: Direct system with wall mounted meter box e.g. Groundbreaker wall box**



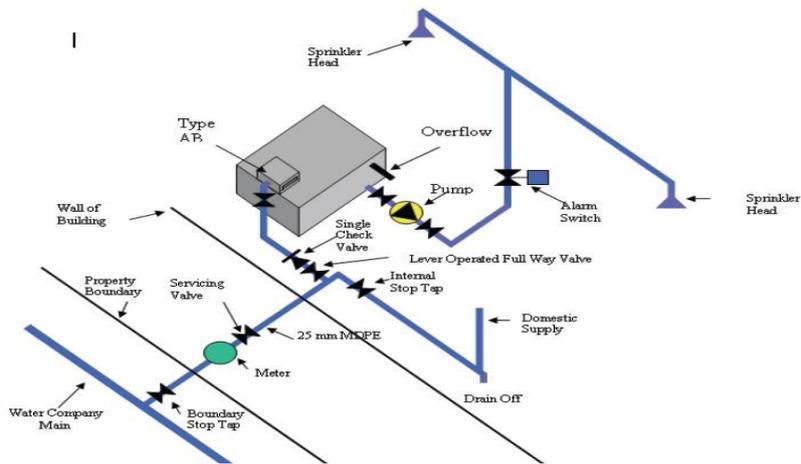
Pipework sizes in drawings are guides and installers must ensure the sizing is adequate for their requirements.

**d. Storage systems**

Where the existing Affinity Water network is unable to provide sufficient pressure or flow to a direct fire supply booster without compromising the Affinity Water network, consent will not be provided and the onus will be on the developer to either liaise with Affinity Water over required network reinforcements or install sufficient storage.

Where storage is to be used within a sprinkler system, an example of pipework layout that can be used to give an acceptable water supply arrangement for the fire sprinkler system is in Figure 5 below.

**Figure 5: Storage (and optional boosted) system**



#### 4. Regulations compliance

It is the responsibility of the applicant/installer to:

- Arrange for all internal and external pipework and fittings to be installed by a 'competent' installer. The WaterSafe scheme may be used to search for an approved contractor. Affinity Water will then undertake an audit inspection.
- Where a fire sprinkler system is not installed and certified by an approved contractor (as defined under regulation 6, Water Supply (Water Fittings) Regulations 1999), arrange for an inspection of the water supply system before Affinity Water undertake any connection tasks.
- Ensure that all water fittings are installed and used in compliance with the Water Supply (Water Fittings) Regulations 1999.
- Rectify, alter or effectively remediate any non-compliant water fittings identified within any agreed timescales.
- Ensure the domestic/residential fire sprinkler system is designed, installed and used in accordance with all current regulatory and nationally recognised standards or guidelines including BS 9251:2014.
- Ensure that all external fittings relating to the domestic/residential fire sprinkler system including backflow prevention devices and valves remain within the property boundary and are accessible and installed so that they can be appropriately maintained, serviced or replaced.
- Ensure that the occupier is aware of their responsibilities regarding maintenance and testing of the domestic/residential fire sprinkler system.

## 5. For more information

### References

[Guidelines for the Supply of Water to Automatic Fire Sprinkler Systems](#)

Water Supply (Water Fittings) Regulations

BS 9251:2014 Fire sprinkler systems for domestic and residential occupancies - Code of practice

### The Fire Sprinkler Association

Mill House  
Mill Lane  
Padworth  
Ely Reading  
RG7 4JX  
Tel: 0118 971 2322  
Fax: 0118 971 3015  
Email: [info@firesprinklers.org.uk](mailto:info@firesprinklers.org.uk)  
[www.firesprinklers.org.uk](http://www.firesprinklers.org.uk)

### Other key links



Water Regulations Advisory Scheme (WRAS)

#### WRAS

Unit 13 Willow Road  
Crumlin  
NP11 4EG  
Tel: 0333 207 9030  
Fax: 01495 248540  
Email: [info@wras.co.uk](mailto:info@wras.co.uk)  
[www.wras.co.uk](http://www.wras.co.uk)



#### Watersafe

[www.watersafe.org.uk](http://www.watersafe.org.uk)

### Contact details

Further information on domestic/residential fire sprinkler systems and installers can be obtained via:

### Groundbreaker Systems



13 Ferriers Road  
Stowmarket  
Suffolk  
IP14 2NS  
Tel: 01449 673451  
Fax: 01449 673470  
Email: [sales@groundbreaker.co.uk](mailto:sales@groundbreaker.co.uk)  
[www.groundbreaker.co.uk](http://www.groundbreaker.co.uk)

Alternatively, you can contact Affinity Water Developer Services for queries around fire sprinkler connections:

#### Developer Services

Affinity Water Ltd  
Tamblin Way  
Hatfield  
Hertfordshire  
AL10 9EZ  
Tel: 0345 357 2428  
Email: [ds@affinitywater.co.uk](mailto:ds@affinitywater.co.uk)  
<https://www.affinitywater.co.uk/developer-services.aspx>

British Automatic Fire Sprinkler Association



**BAFSA** (British Automatic Fire Sprinkler Association)

Richmond House  
Broad Street  
Ely  
CB7 4AH  
Tel: 01353 659187  
Fax: 01353 666619  
Email: [info@bafsa.org.uk](mailto:info@bafsa.org.uk)  
[www.bafsa.org.uk](http://www.bafsa.org.uk)

or contact Affinity Water Network Regulations for queries on sprinkler systems acceptability:

#### Network Regulations

Affinity Water Ltd  
Redricks Lane  
Sawbridgeworth  
Hertfordshire  
CM21 0RL  
Tel: 01279 775436  
Email: [networkregs@affinitywater.co.uk](mailto:networkregs@affinitywater.co.uk)  
<https://www.affinitywater.co.uk/fittings-regulations.aspx>

<https://www.water.org.uk/wp-content/uploads/2018/11/Draft-Sprinkler-Guidelines-Rev-2018.pdf>