

## **Bristol Water - Domestic Fire Sprinklers Guidelines for Installers and Developers.**

### **1. Introduction**

This information is based on BS 9251: 2014 'Sprinkler systems for domestic/residential occupancies'. It is a guide for developers or sprinkler installers who wish to install sprinkler systems in new or existing properties.

*In addition to the protection already achieved by the appropriate building design and the installation of smoke and/or fire detectors, fire sprinkler systems can be an effective method of preventing the loss of life and reducing damage to property.*

The purpose of this guide is to provide an approved set of design specifications for new connections and installations associated with fire sprinkler systems.

### **2. Water pressure and flow (Systems 'fit for purpose')**

To accommodate this requirement BW must make all stakeholders aware that BW cannot guarantee pressures and flows above the minimum relevant OFWAT reference levels. The standard/measurement is taken at the point the communication pipe becomes the supply pipe (normally BW's stop tap positioned at the boundary of the premises), the minimum standards are -

- 1 bar (10metres head) of pressure.
- 9 litres/minute of flow.

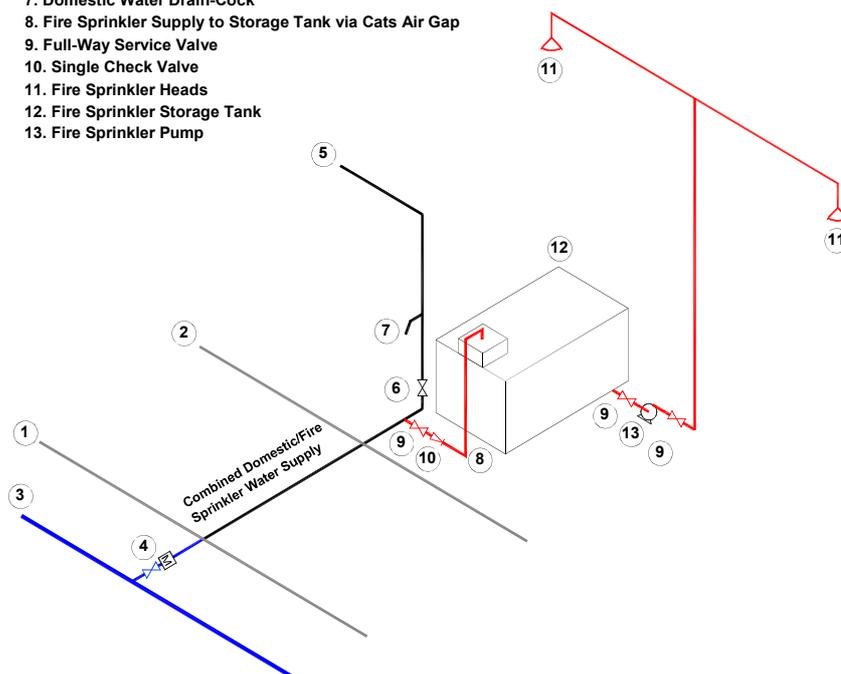
Please Note: Some of our systems are currently operated in a manner that would provide water pressures that are considerably higher than this; however, BW has an on-going programme of pressure reduction, which will eventually be operational throughout our area of supply. All stakeholders including designers and installers should, therefore, ensure that all installations will cope with these minimum figures rather than what might currently be available.

BW would therefore recommend that an indirect system (i.e. water storage) be installed to accommodate any issues associated with low pressure or flows. A typical indirect system is illustrated (option 1):

## Option 1

### Combined Domestic/Fire Sprinkler Supply (Indirect via Storage & Booster Pump)

1. Property Boundary (limit of BW responsibility)
2. Wall of Building
3. BW Water Main
4. BW Water Service (32mm) & Stop Tap/Meter Unit (Boundary Box)
5. Domestic Water Supply
6. Domestic Water Stop Tap
7. Domestic Water Drain-Cock
8. Fire Sprinkler Supply to Storage Tank via Cats Air Gap
9. Full-Way Service Valve
10. Single Check Valve
11. Fire Sprinkler Heads
12. Fire Sprinkler Storage Tank
13. Fire Sprinkler Pump



### 3. Application for a Supply

In the event that a new water connection is required an Application for Supply form (AFS) must be completed. The AFS should clearly state that a connection is required for both a domestic supply and a domestic fire sprinkler supply.

There will be a relevant new connection charge invoiced to the applicant for the costs applicable at the time of the application. [\(Click here for link to AFS form\)](#)

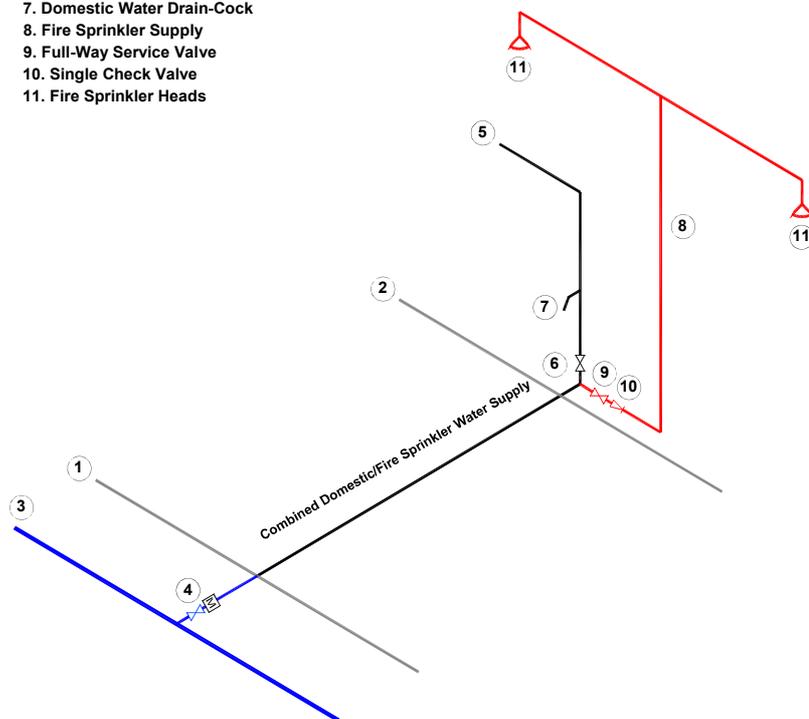
### 4. Single Buildings/Dwellings

A 32mm communication pipe connected to the associated BW water main will be required to accommodate the request for a new supply. This will be installed also incorporating either a boundary stop tap box or a wall mounted stop tap box. In general, there are two types of installation in line with direct systems as illustrated (option 2 and 3).

## Option 2

### Combined Domestic/Fire Sprinkler Supply (Direct via Mains)

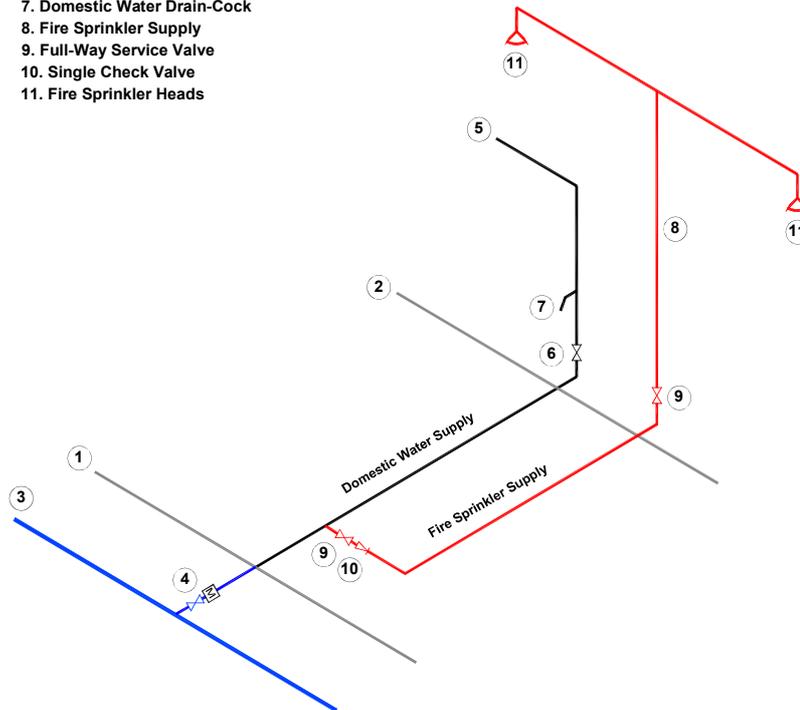
1. Property Boundary (limit of BW responsibility)
2. Wall of Building
3. BW Water Main
4. BW Water Service (32mm) & Stop Tap/Meter Unit (Boundary Box)
5. Domestic Water Supply
6. Domestic Water Stop Tap
7. Domestic Water Drain-Cock
8. Fire Sprinkler Supply
9. Full-Way Service Valve
10. Single Check Valve
11. Fire Sprinkler Heads



## Option 3

### Independent Domestic & Fire Sprinkler Supplies (Direct via Mains)

1. Property Boundary (limit of BW responsibility)
2. Wall of Building
3. BW Water Main
4. BW Water Service (32mm) & Stop Tap/Meter Unit (Boundary Box)
5. Domestic Water Supply
6. Domestic Water Stop Tap
7. Domestic Water Drain-Cock
8. Fire Sprinkler Supply
9. Full-Way Service Valve
10. Single Check Valve
11. Fire Sprinkler Heads



## 5. Multi-occupancy Premises

A separate supply pipe may need to be installed which may be supplied direct from mains or indirect from a water storage cistern dependant upon the developer's domestic water and fire sprinkler requirements. Numerous installation options may be required for certain types of applications.

## 6. On-going Charges once installation complete

The 32mm supply which will incorporate a domestic fire sprinkler supply shall be metered and charged to the customer by an appropriate sized water meter.

The Water Industry Act states that the bill payer may be entitled to an allowance for water used in the event of an emergency or testing of any fire sprinkler system. The bill payer will need to produce evidence regarding any claim.

## 7. Notification of installation of Fire Sprinkler Systems

BW will require advanced notification of the proposed domestic fire sprinkler system design as part of the statutory requirements under the Water Supply (Water Fittings)

Regulations 1999 (WSWFR). Our officers may carry out inspections of the external and internal fittings. The installation should be in accordance with BS 9251: 2014 (Fire sprinkler systems for domestic and residential and occupancies). All fittings (*fittings includes pipes, fittings and check valves*) included in any installation shall meet the requirements as detailed in the WSWFR and installations above and below ground shall be clearly marked and labelled in accordance with the requirements of BS 1710.

## 8. Frequently Asked Questions

**Q.** Can a pump/booster be installed to a water supply pipe to 'boost' water pressure for the fire supply?

**A.** Yes, provided that the notification process has been followed and then written approval by BW of the installation has been granted in accordance with the WSWFR. However, due to the implications of installing a pump on to a supply pipe BW may need to model such requests to investigate if the installation will cause issues with BW's water supply network. The modelling of such applications may have a cost implication to the applicant.

**Q.** Where is the check valve located?

**A.** The check valve must be accessible and located at the branch connection point of the fire sprinkler supply with the domestic water supply pipework to prevent backflow or backsiphonage of any stagnant water into the domestic water supply or the BW water supply network.

**Q.** Whose responsibility is it to install and maintain the check valve?

**A.** Installation and maintenance of the check valve is the responsibility of the owner of the system.

## 9. Further Information

Further information on domestic / residential fire sprinkler systems can be obtained from;

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

Richmond House

Broad Street

Ely

CB7 4AH

Tel 01353 659187

Fax 1353666619

Email [info@bafsa.org.uk](mailto:info@bafsa.org.uk)

Web [www.bafsa.org.uk](http://www.bafsa.org.uk)

### **The Fire Sprinkler Association**

Mill House

Mill Lane

Padworth

Reading

Berks

RG7 4JX

Tel 0118 971 2322

Fax 0118 971 3015

Email [info@firesprinklers.org.uk](mailto:info@firesprinklers.org.uk)

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