

Installation requirements of fire mains

This guidance has been put together to assist mechanical installers when they carry out the installation of a fire main within the Anglian Water region of supply.

1. Conditions of supply

Principle requirements which water suppliers place upon installers are to ensure that installations are designed and installed to avoid waste, undue consumption, misuse, contamination of the water and erroneous measurement and to ensure compliance with the water regulations throughout their useful life.

2. General requirements

- **Use of correct water fittings.** All materials and fittings used in a fire supply that are directly connected to Anglian Water's mains supply must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 and be WRAS (Water Regulations Advisory Service) approved.
- **Use of pipework identification.** All below and above ground water pipes within the curtilage of the property, used either solely for a fire main or an automatic fire sprinkler system, must be identified by marking tape or some other suitable means to prevent the possibility of future cross connections.
- **What colour code identification is required for fire supplies?** The correct coding for fire supplies which will satisfy the Water Regulations is: Green Red Green banding.
- **Isolating valve and backflow protection.** The pipework for a fire main or a fire sprinkler supply must be fitted with an isolating valve and appropriate backflow prevention device to protect against backflow from either a fire main or an automatic fire sprinkler system at the boundary of the property. These valves should be in chambers to give access for future maintenance.

3. Frequently asked questions

- Q Can a pump be installed on Anglian Water's mains water supply to boost a fire supply?
- A No. Should a fire supply require boosting, a fire water storage cistern with a booster pump would be needed, with the mains water supply inlet pipe protected by a Type AB air gap.
- Q Where must the backflow device be located?
- A The backflow device must be located at the boundary of the property, this is to prevent any dead leg of stagnant water within the fire main contaminating Anglian Water's drinking water supply.
- Q Who's responsibility is it to maintain the backflow device?
- A The maintenance of the backflow device is the responsibility of the owner of the system.
- Q What Fluid Category is a fire main?
- A Fluid Category 2.

4. What do the Water Regulations say about fire fighting pipework identification?

Schedule 2 of the Water Supply (Water Fittings) Regulations 1999 requires that pipes that do not carry wholesome water are readily distinguishable from those that do.

The requirement applies to all pipes that carry water that is not wholesome, for example **fire fighting purposes**, treated or untreated greywater including rainwater; non-potable water distributed or used for industrial or commercial purposes, or water supplied from a source other than the water supplier's mains.

The purpose of this requirement is to prevent accidental cross -connections that could lead to contamination of wholesome water in supply pipes or distributing pipes. In all premises, where there are pipes conveying unwholesome water, the pipes should be readily identifiable. It is necessary to clearly distinguish those parts of the installation from other pipes carrying wholesome water.

This is a matter not only of Water Regulation concern but also a measure contributing to health and safety.

The water supply industry deems that the Water Regulations will be met if all pipes carrying water for drinking and sanitary purposes are readily distinguishable from all other pipes. Readily distinguishable for pipes means any method of identification or marking. This includes colour pigmentation incorporated in plastic pipes or colour painting of pipes and fittings or permanent marks or labels or above ground markings specified in BS 1710: 'Identification of pipelines and services'.

The colour identification should be placed at junctions, at both inlets and outlets of valves, service appliances and where pipes pass through walls at points on the pipe adjacent to both wall surfaces. It is not intended that colour codings for pipes should be prominent in any decorative scheme or should interfere with colour schemes in premises where decorative finishes are provided. A degree of common sense should prevail in these areas, for instance the pipe could be marked in an adjacent room or duct.

It should be noted that the identification requirement of Schedule 2, applies to all water fittings which includes cisterns and valves. It is important therefore that all fittings, particularly of indeterminate purpose, containing or controlling any fluid, including wholesome water, should be legibly marked in accordance with BS 1710.

Examples of BS 1710 colour coding are both below and on the next page.

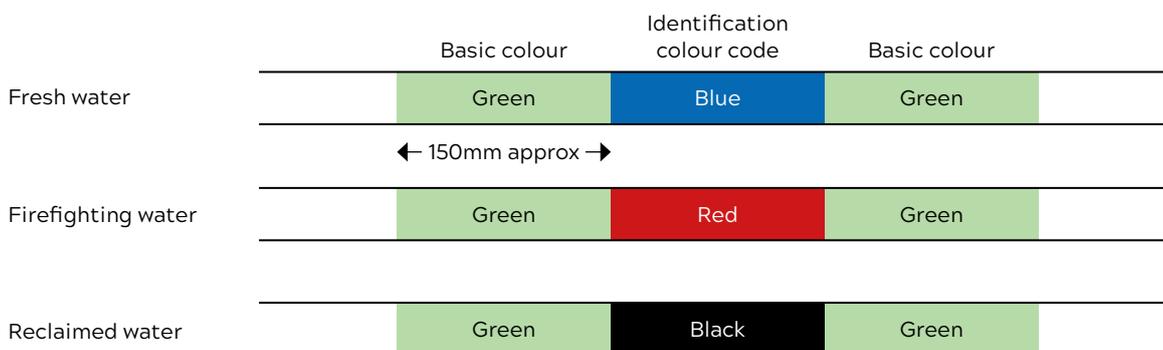
5. Conclusions

Anglian Water recognises that fire supplies have a valuable role to play in the protection of both life and property from fire and in the reduction of environmental damage fires can cause. Anglian Water also recognises that the water used by a fire main or fire sprinkler system is:

- A legitimate use of water
- Free of charge
- A potential risk for fraud against which adequate safeguards must be provided
- Passed through an appropriate and approved backflow prevention device
- Separately distributed from domestic or commercial use of water within a property
- Supplied to a fire sprinkler system by variety of methods.

If the supply is to serve temporary site welfare facilities it is important that any plumbing within these facilities are in accordance with the Water Supply (Water Fittings) Regulations 1999.

Examples of BS1710 colour coding

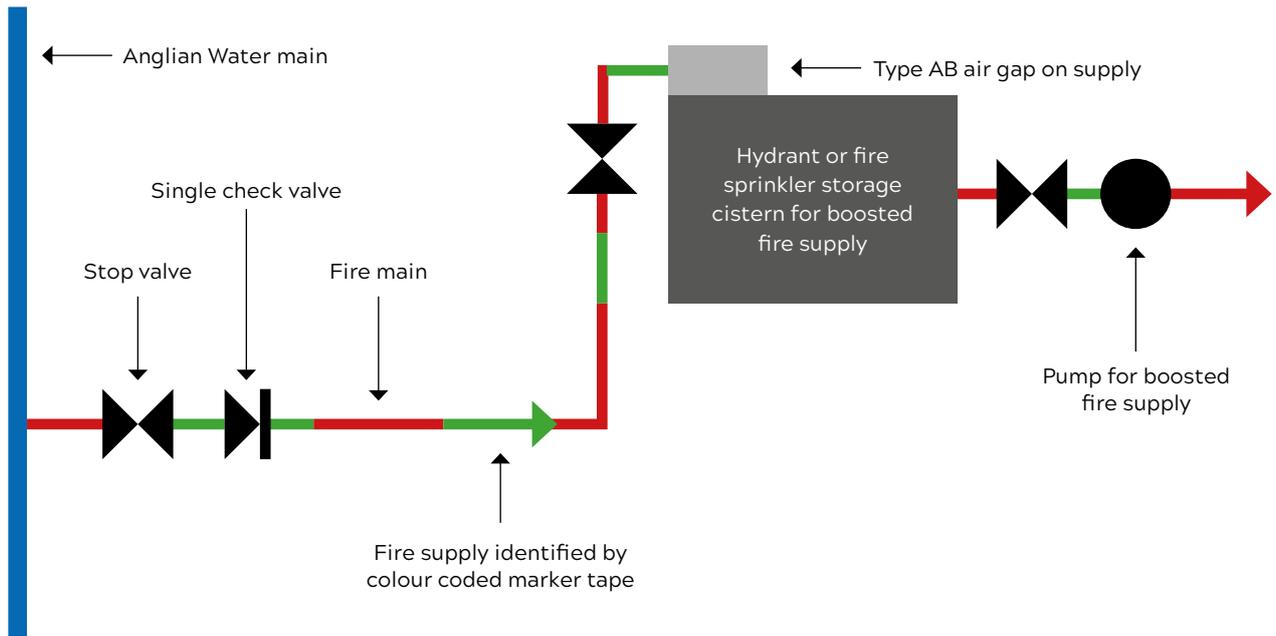


Below is the colour coding requirements that will satisfy the: Water Supply (Water Fittings) Regulations 1999 for fire fighting water

BS 1710 colour identification



Example of a 'boosted' fire main installation



Example of fire main installation

