

Policy for the
supply of water
to fire-fighting
systems



Wessex Water
YTL GROUP

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Policy for the supply of water to fire-fighting systems

Introduction

The purpose of this document is to set out Wessex Water's policy and our commitment to supporting the installation of private fire-fighting systems.

The information provided in this document must be followed to ensure your installation will meet the Water Supply (Water Fittings) Regulations 1999 (the regulations) designed to drinking water from contamination and wastage.

Wessex Water supplies water within three counties: Somerset, Dorset and Wiltshire. See Appendix 1 for a map of the Wessex Water supply region.

The document will be reviewed every five years or when changes are made to relevant legislation.

Please note we are unable to offer a design service for fire-fighting supplies. The design of a fire-fighting system must be undertaken by a suitably qualified and competent individual.

By design we refer to determining the size of pipes, flow rates, storage volume, etc.

Fire sprinklers for domestic and residential occupancies must meet the requirements of BS 9251:2021 Code of practice.

Non-household and household properties that are outside the scope of the above must meet BS:EN 12845.

Aims of the policy

Wessex Water is committed to:

- **Provide** a supply of water (where available) for fire-fighting systems
- **Engage** with stakeholders and follow good practice
- **Enforce** the Water Supply (Water Fittings) Regulations 1999
- **Protect** water quality

Standard requirements for all fire-fighting supplies

- All plumbing fittings and materials carrying or using mains water must be compliant with Regulation 4 of the regulations.
- All pipework (internal and external) used solely for fire-fighting purposes must be clearly labelled in accordance with British Standard 1710 - Pipe Marking. Below is an example ID for a pipeline conveying mains water for fire-fighting.



- Connecting the fire-fighting water supply for other purposes is an offence under the Water Industry Act 1991 (the Act). Any identified cross connections will require immediate removal enforced under Section 75 of the Act.
- Backflow prevention arrangements must be present on the fire-fighting supplies.
- All newly laid external pipework must be in barrier type pipe.
- The supply pipe must be a minimum of 32mm external bore.
- Fire-fighting supplies can be installed at newly built properties and installed retrospectively to existing premises.

Protecting water quality

Fire-fighting supplies are provided for emergency use. The water within the dedicated pipework will not be used for a significant period and remain unmoving.

This water will become stagnant and unsuitable for consumption and other domestic use.

To prevent the stagnant water from flowing back into the private drinking water supply of the premises or into the mains network, at least a single check valve must be installed in certain locations. Diagrams in appendix 3 provide guidance regarding the location of backflow prevention devices and arrangements.

If the fire-fighting system is to be dosed with a chemical inhibitor, the system must be supplied by a reduced pressure zone (RPZ) valve or a storage cistern achieving an AA or AB type air gap. Check valves are not suitable backflow prevention devices for chemicals.

Metering

All new connections to the mains water network will be metered, including those for fire-fighting purposes. Metering is to check for leakage and misuse, and we do not charge for emergency use for fire-fighting, servicing or testing fire-fighting equipment, or using the equipment for training purposes, as long as prior notification has been received. See below on how to apply for an allowance.

This does not exempt billing of water use through poor maintenance and leakage of a fire-fighting system.

Dedicated fire-fighting supply pipes, including those for hydrants, will have a meter installed on a bypass to not restrict the flow of water. This meter will only be used to aid leakage investigations. Refer to diagram A in appendix 3.

All supplies that are shared fire-fighting and domestic use will be fitted with an appropriately sized in-line meter. This will be up to a maximum of 50mm external diameter pipes, anything greater than this will require a separate dedicated mains connection for the fire-fighting supply. This is so the meter, sized according to the domestic use, does not restrict the flow for fire-fighting purposes.

Allowance

To ensure the allowance claimed accurately reflects the water used during servicing and testing, please provide as many of the following details and supporting evidence as possible:

- Meter readings before and after the service/test,
- Volume of tank and what percentage was replenished,
- Flow rate and length of time the system was active for.

It is understood that following the unplanned/emergency activation of a fire-fighting supply, the above details may not be available. You can claim an allowance by calling **0345 600 3 600**.

If the premises are non-household and you receive your bill from a supply retailer, contact them to claim an allowance for use of water for fire-fighting purposes.

Please submit evidence of the emergency use to support your claim.

What type of fire-fighting system do I need?

This must be decided by the applicant in consultation with design engineers and your local fire authority. Below are descriptions of the different systems available and how they can be supplied.

There is no legal requirement for a water undertaker to increase the pressure or flow within an area of the mains network to meet the needs of a particular fire-fighting system. The designer must consider the pressure and flows available.

Wessex Water cannot and does not commit to providing a supply of water at a given building at such constancy or pressure to reach a height greater than that to which it would flow by gravitation through our water mains from the service reservoir or tank from which it was taken.

When designing a fire-fighting system, you should therefore carry out your own due diligence (taking into account the above) as to the steps you should take to ensure that the design is adequate for the building in question.

Fire hydrant vs. fire suppression system

Fire hydrant - external installation

Private hydrants are generally installed within an accessible chamber underground outside of a building (but within the property ownership boundary) and are made available for emergency services to connect their equipment to extinguish a fire. Supply pipes are generally at least 90mm diameter for hydrants to generate the flow rate required by the emergency services equipment.

Fire suppression system - internal pipework

Fire suppression systems, mainly sprinklers, are installed within a building and designed to suppress a fire allowing occupants to escape. These are not designed to fully extinguish a blaze. They can be activated automatically via fire/smoke detectors or manually via activation switches.

Dedicated (standalone connection) vs. shared supply

Dedicated separate fire-fighting supply

A dedicated fire-fighting supply will provide water solely for the fire-fighting system and nothing else. These supplies must not be connected to, or supply anything else within the property.

These are most suitable for non-household / commercial or large multiple occupied residential properties (eg block of flats, student accommodation). A large diameter pipe may be required to provide the necessary flow for the fire-fighting system. The domestic use is unlikely to adequately turnover the water resulting in its deterioration.

Shared fire and domestic use supply

A shared supply is a pipe that carries water for both fire-fighting purposes and domestic use. These are more suitable in domestic properties where a standard diameter pipe (32mm) is sufficient to supply the fire-fighting system. Therefore, turnover of the pipe through normal domestic use is sufficient to prevent stagnation and deterioration of the drinking water.

A priority demand valve can be used which will shut down the domestic supply demand allowing the water supply to solely flow to the fire-fighting system. However, these valves may not be appropriate if the domestic supply is part of a shared supply to more than one dwelling within the premises.

A shared supply will be allowed up to a pipe size of 50mm. Anything larger than this will require a separate connection for the mains and fire-fighting purposes. This is due to water quality and metering considerations.

Direct mains supply, boosted mains and storage cistern (tank)

If the fire-fighting system is to be dosed with a chemical inhibitor, the system must be supplied by either a RPZ valve or storage cistern achieving an AA or AB type air gap. The chemical dosing point must be downstream of these backflow prevention arrangements.

Chemicals must not be dosed into a mains direct supplied system.

Direct mains supply

These systems are directly supplied by the mains water network. This can be for both fire sprinklers and private fire hydrants.

Pressure in the network will vary as it is affected by overall demand and operational variations. The minimum pressure we target is 15m static head of pressure or 9 litres per minute at 10m head of pressure measured simultaneously at the company external stop tap at ground level.

We can provide an indication of the average flow and pressure available in an area. Developers must design their systems according to the pressures available. Please enquire when submitting your application. You must check whether the available pressure is adequate for supplying the whole of your premises.

Any interruption to the water supply could leave the premises without water to supply a fire-fighting system. An interruption could be due to planned or unplanned work or if the supply to the premises must be switched off due to operational reasons. Therefore, we cannot always guarantee a continuous supply or constant pressure.

We make every effort to forewarn customers of planned work that may affect the water supply network. However, due to the nature of unplanned incidents, this is not always possible. You must design and manage your fire-fighting system with this in mind.

The only way to guarantee a continuous supply of water is to install a storage cistern to supply a fire suppression system.

Direct mains boosted supply

This is where a pump is connected on the mains direct supply within the premises. This can only be permitted if the pump automatically shuts down in the event of reduced pressure in the mains network.

Details of pumps with a flow rate of greater than 12 litres/minute (0.2 litres/second) must be recorded on the Regulation 5 notification or new connections application form. Please provide the flow rate, make and model details of the proposed pumps.

Please note: Installing a pump with a high flow rate may have a detrimental effect on the mains supply. If the flow rate generated by the pump is too high compared to the mains network, pumping the water may create an air lock in the mains and stop the water supply resulting in no water to suppress the fire.

Pumps for sprinklers should provide a steady flow rate as opposed to a sudden surge. Where a high flow rate is required, then a storage cistern (tank) should be installed prior to the pump(s).

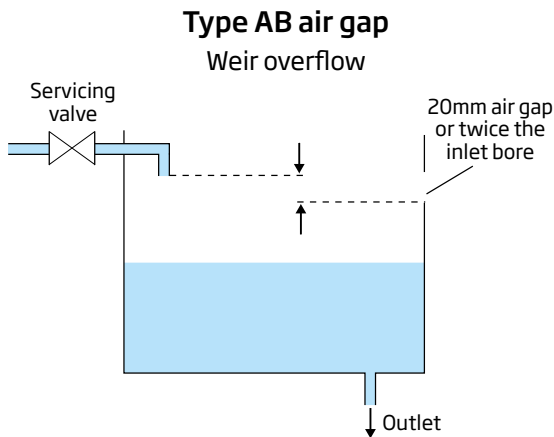
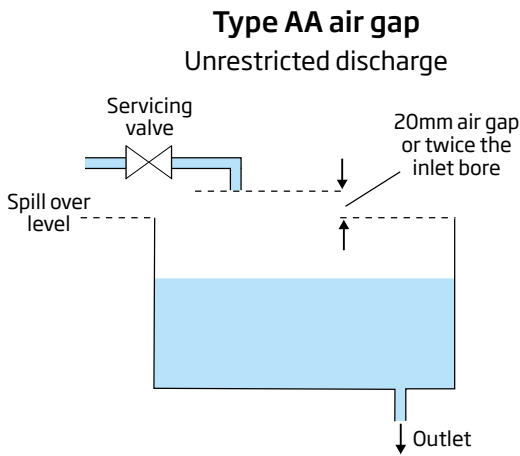
Storage cistern

This is where a cistern provides a stored volume of water to supply the fire-fighting system. This is most suitable for large premises or those with multiple storeys where the mains network pressure or flow rate is not sufficient to serve the entire site.

Storage cisterns must be sized accordingly to maintain a continuous flow to the fire suppression system for a required time to allow occupants to escape before the emergency services attend.

All such storage cisterns must achieve an AA or AB air gap between the inlet and the spill over level of the cistern (fluid category 5). Please see guidance diagram C in Appendix 3.

The fire system can either be gravity fed or have a pump installed downstream of the cistern to boost the fire-fighting supply. A bypass pipe must not be installed around the storage cistern.



Installing and applying for a new supply connection for fire fighting

External fire-fighting system (hydrants) and dedicated fire mains

- visit our [online dashboard](#)
- please select the: 'I am a developer, SLP or NAV...' box towards the bottom of the screen.
- this will then take you forward to the pre-planning page, on this screen please select 'No' and then in the pop up box select 'Click to Proceed'
- from this point on it is a case of selecting the options you require; in this case you are looking for the 'Supply Diversion' box, followed by 'Next'
- this will finally take you through to the application details, whereby you just need to fill in the boxes and follow the process through.
- any queries please email: development.west@wessexwater.co.uk

Internal fire suppression systems (sprinklers)

These can be applied for at the same time as a new standard water supply connection (e.g. drinking water and other domestic purposes)

- visit our [online dashboard](#) to apply - select the 'other water connection' option
- complete the online form including as much detail as possible
- if the sprinkler supply is in addition to a standard new supply connection - please state this in the additional comments area that you require one supply and one sprinkler
- lack of information may delay our team processing your application
- any queries please email supplyconnectionenquiries@wessexwater.co.uk

Installing a fire supply on an existing supply (alteration/extension)

Existing supplies - requires a water fittings regulations notification (Regulation 5)

- Before work begins to install the pipework for a fire sprinkler supply system on an existing supply, the owner or contractor must notify us under Regulation 5 of the fitting regulations 1999.
- Please complete and return a Regulation 5 notification form
- The form can be found on our website in: [Help and advice - Plumbing - Plumbing alteration notification](#)
- Please return to Regulation5.Notification@wessexwater.co.uk or send by post to:
Wessex Water
Regulation 5
Developer Services
Claverton Down
Claverton
Bath
BA2 7WW
- Include as much detail as possible; schematic drawings and make/model details of the fittings (including pumps)

Work cannot begin to install the fire-fighting system or other associated plumbing and fittings before receiving our consent. We have 10 working days from receipt of the notification to either grant or withhold consent after which, if no response is received, consent can be assumed to have been granted.

This does not alter the obligation of the owner, occupier or developer to ensure the regulations are met in full. Breaches of the fittings regulations could result in the withdrawal of the water supply to the premises.



For more information, the following organisations may be able to help

BAFSA (British Automatic Fire Sprinkler Association)

Richmond House
Broad Street
ELY
CB7 4AH
Tel 01353 659187
Email info@bafsa.org.uk
Web www.bafsa.org.uk

The Residential Sprinkler Association

Park Court
Brimpton
RG7 4ST
Tel 0118 971 2322
Email info@firesprinklers.org.uk
Web www.firesprinklers.org.uk

To find an approved plumber please contact:

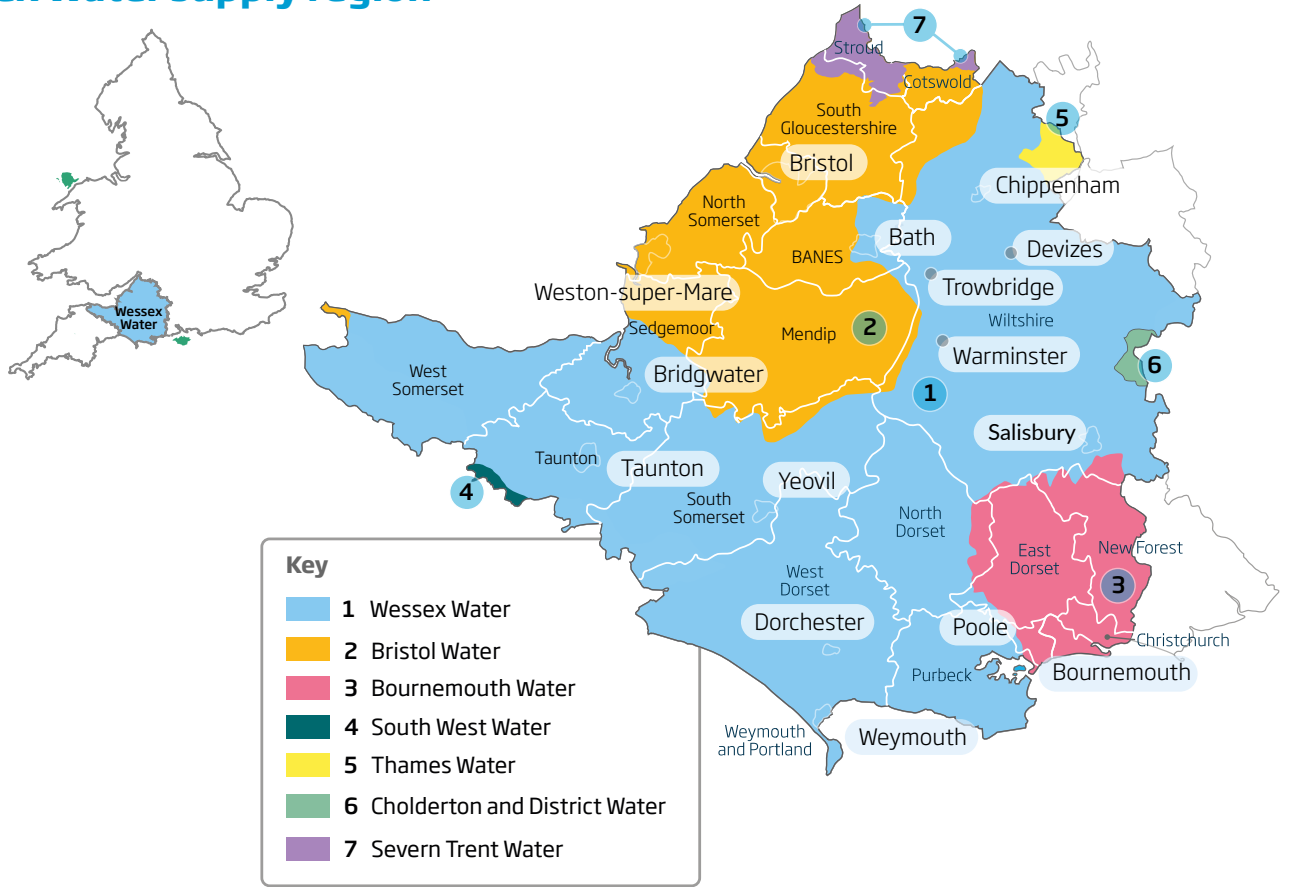


Tel 0333 207 9030
Email info@watersafe.org.uk
Web www.watersafe.org.uk

Appendices

Appendix 1

Wessex Water supply region



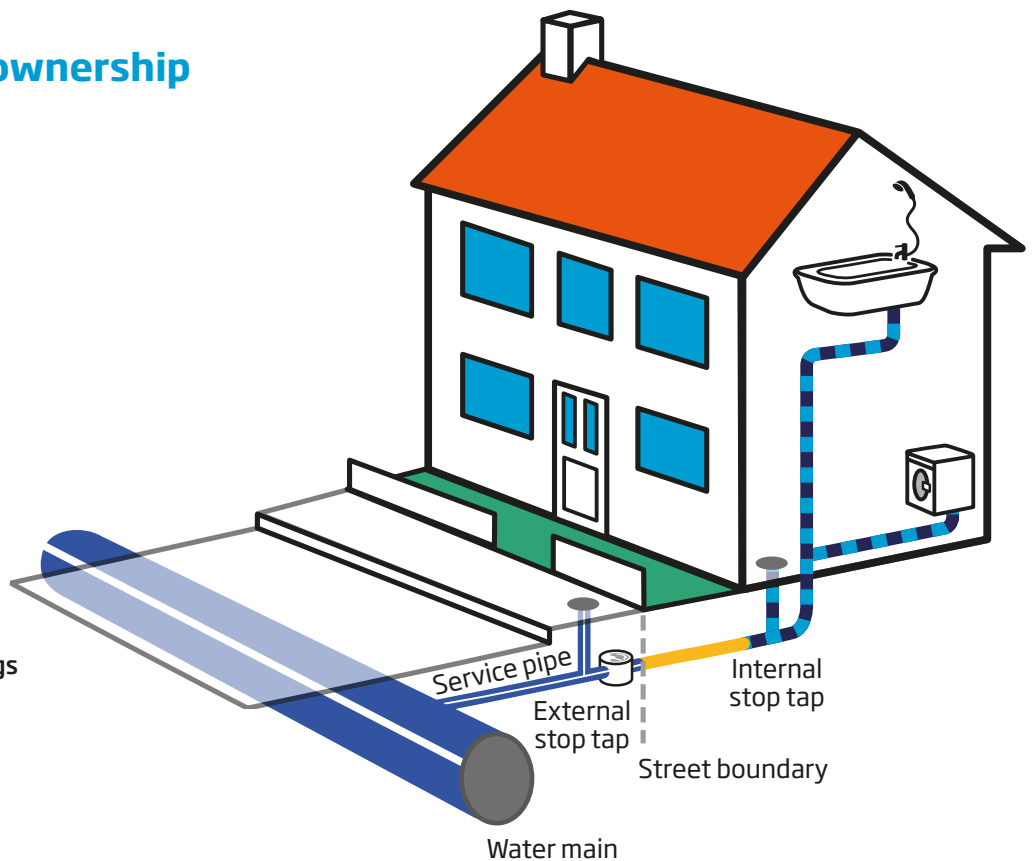
Appendix 2

Water service pipe ownership and responsibility

Our pipework
We maintain it and fix leaks as quickly as we can.

Your pipework
Your responsibility, but we'll help you look after it.

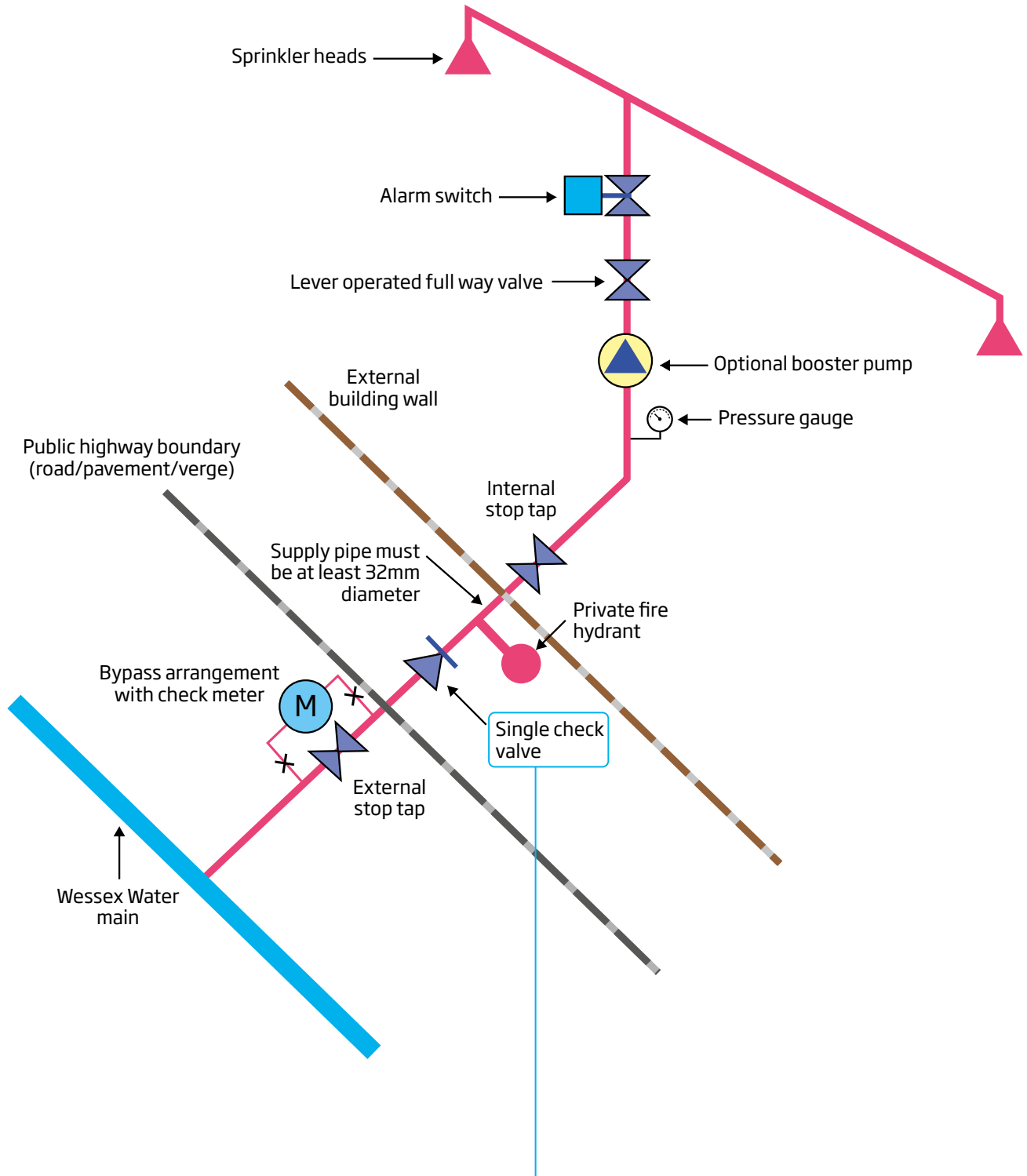
Your pipework and fittings
Your responsibility, and you'll need to contact a plumber if you have any problems with them.



Appendix 3 - Example schematic drawings of fire sprinkler supplies

Please note these are for guidance purposes only

Diagram A - Dedicated mains direct fire-fighting supply



Single check valve installation

- The device must be fitted as close as reasonably practical to the property boundary to reduce the length of pipe with stale water that could be drawn back into the main.
- The device must be protected from frost and other damage, and be accessible for maintenance and inspection.

Diagram B - Mains direct shared domestic and fire-fighting supply

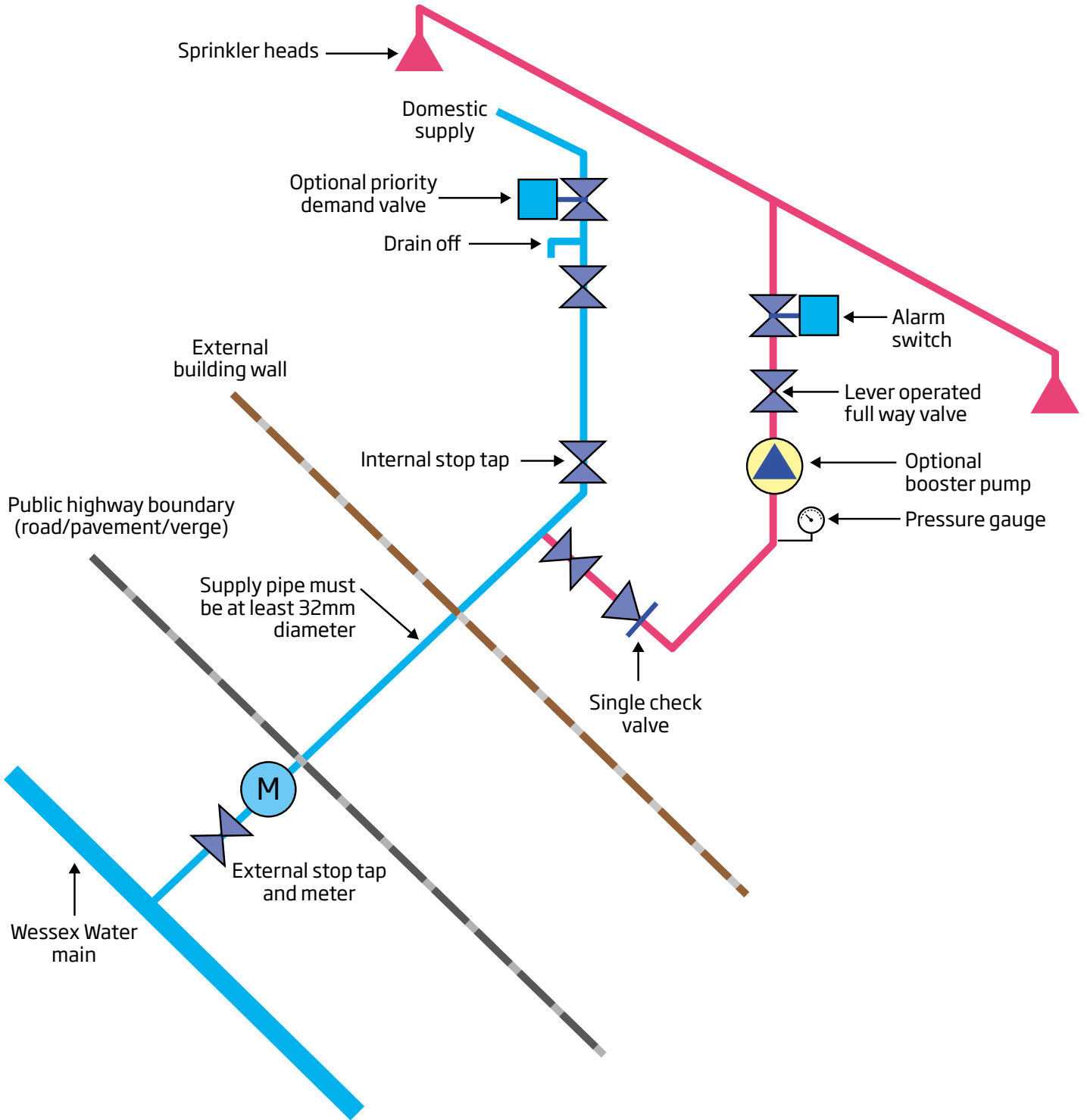
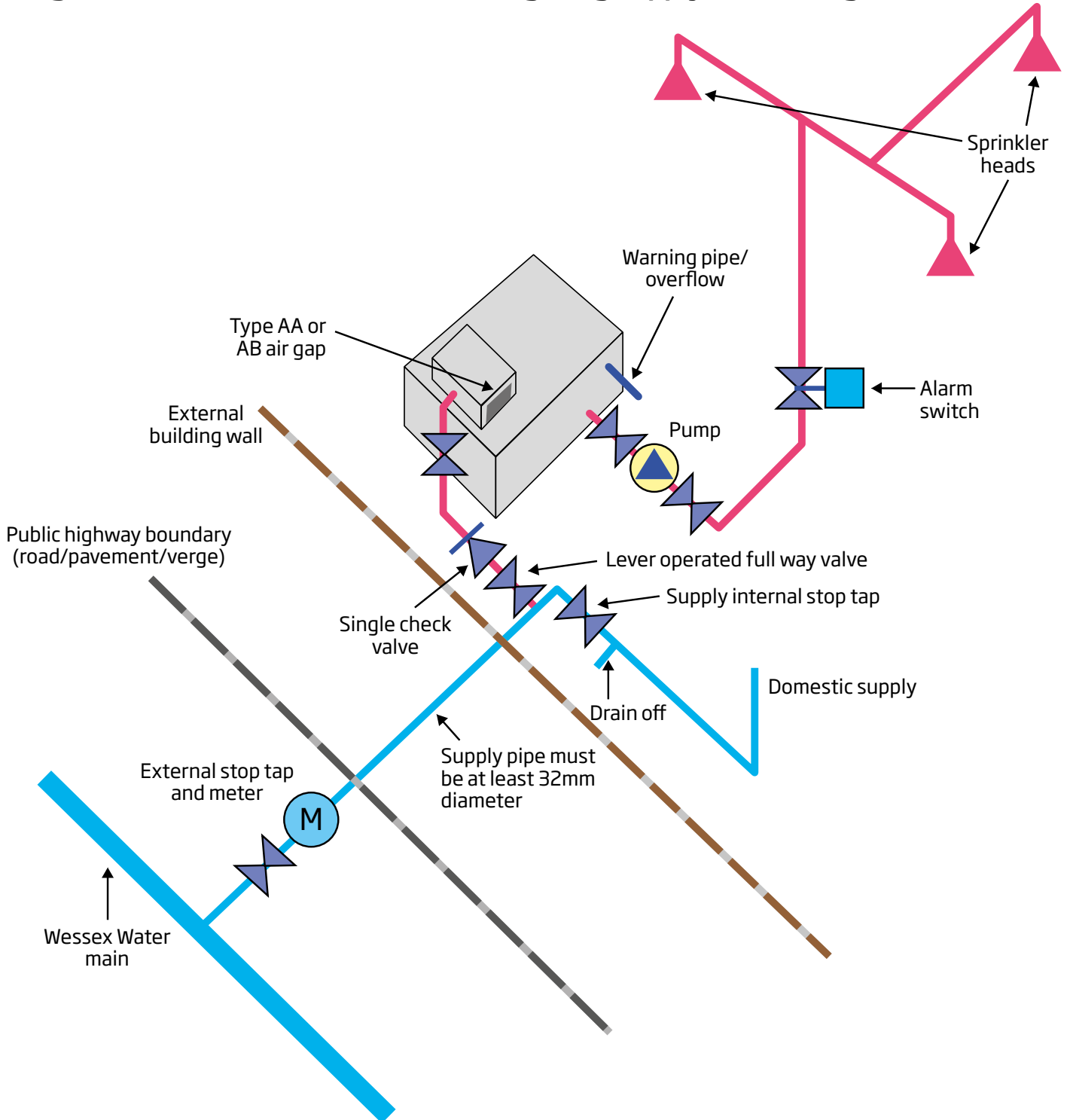


Diagram C - Shared domestic and fire-fighting supply with storage



Appendix 4 - Glossary of terms

Term	Description
Backflow	The flow of water in the opposite direction to which it is intended.
Backflow prevention device	A device that is designed to stop or prevent backflow.
Booster pump	A pump designed to increase the pressure of water within a system.
Bypass	A pipe going around a fitting, cistern or other fixture .
Check meter	A meter that is not installed in-line with the pipe, instead it is installed on a separate branch and through the operation of valves the water made to flow through to check for usage.
Cistern	Technical name for a tank that stores a volume of water.
Communication pipe	The section of the service pipe from the main to the boundary of the public highway - this is the responsibility of the water undertaker.
Domestic supply / use	Domestic use of water includes consumption, washing, cooking, cleaning, bathing and for other sanitary purposes. The water must be considered wholesome for these purposes, sometimes referred to as potable.
Downstream	Situated beyond a certain point in the direction the water is travelling.
Stop valve	A valve / tap that stops the flow of water, as known as an isolation valve or stop tap.
Priority demand valve	When an automatic sprinkler system is activated, this device receives a signal and isolates the flow of water to the domestic supply which allows all available water to flow into the sprinkler system.
Service pipe	The water pipe connecting the main to the property plumbing.
Stagnant / stagnation	Water that stops flowing for a significant period of time and leads to a deterioration in quality making it no longer suitable for domestic purposes (not potable).
Supply pipe	The section of the pipe between the public highway and where it enters the property through the external wall. The property owner is responsible for this section of the pipe.
Turnover	How frequently the water within a pipe refreshes itself. Poor turnover could lead to a deterioration of water quality. Good turnover means the water is drawn from the mains network more often and is therefore refreshed within the pipe.
Upstream	Situated before a certain point in the opposite direction to that the water is travelling.
Water main	Pipe belonging to the water undertaker installed with the purpose of providing a general supply of water.
Water retailer	License retailers who manage billing and other services for non-household property customers.
Water undertaker	A company who has statutory powers and duties to supply water and/or sewerage services to premises within an appointed geographical area under the Water Industry Act 1991. These are the incumbent water companies and inset appointees.