



The water fittings regulations in [England, Wales](#) and [Northern Ireland, byelaws in Scotland](#) are legal requirements which apply to all premises which have, or will have, a mains water supply, even it is only a backup supply.

An important item of public health legislation, their purpose is to protect drinking water supplies. Their objective is to prevent contamination, misuse, waste, undue consumption or erroneous measurement of water. They do this by setting legal requirements for the design, installation, operation and maintenance of water fittings, including water-using appliances.

The booklet provides information to assist those installing pipework.

For further information about these requirements please refer to the Water Reg UK website [www.waterregsuk.co.uk](http://www.waterregsuk.co.uk) or contact the local [water undertaker](#).

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## Do water fittings have to be marked?

All pipework, whether installed above or below ground, should be marked in accordance with the latest version of [BS 1710](#).

To identify what parts of a plumbing system they control, servicing valves should be labelled.

For further information please refer to the [pipe identification information leaflet](#)

## What is adequate support?

The method of support and spacing between supports will be dependent on the type of water fitting and material it is constructed from.

In the case of pipework allowance should be made to accommodate likely movement for example thermal expansion and contraction.

Useful sources of information include [BS EN 806:4](#), and [BS 8558](#).

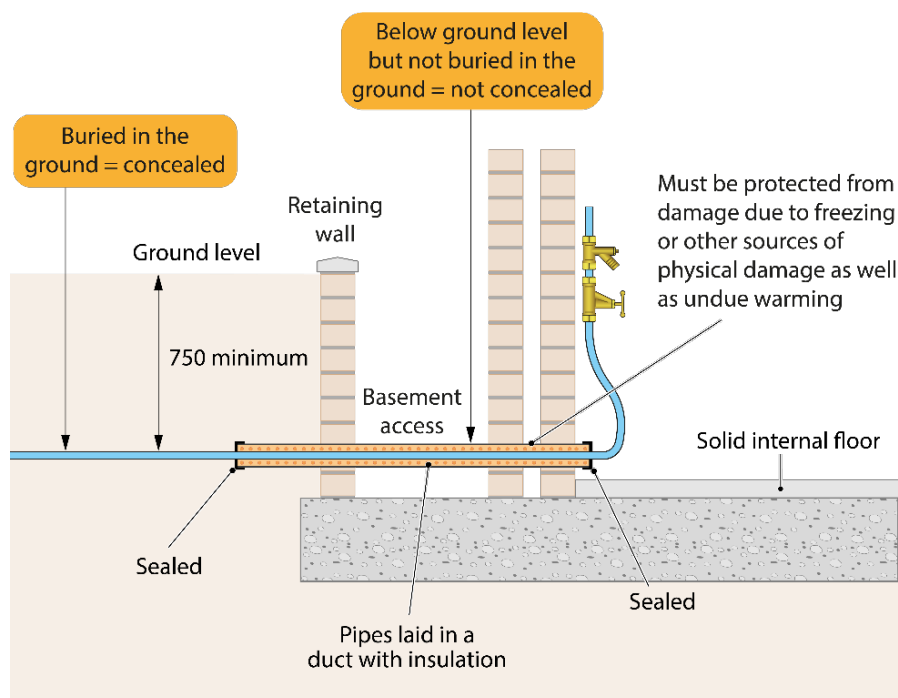
## What is meant by concealed?

Water fittings considered to be concealed include those:

- Buried in the ground
- Installed below or embedded in floors
- Installed in or behind wall finishes

Water fittings considered not to be concealed include those:

- Installed below ground but not buried, such as in a chamber or basement room
- Installed below floors or in walls which can be readily accessed



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## Can joints and water fittings be concealed?

Joints on concealed pipework are likely to lose their integrity over time and therefore should only be considered where unavoidable.

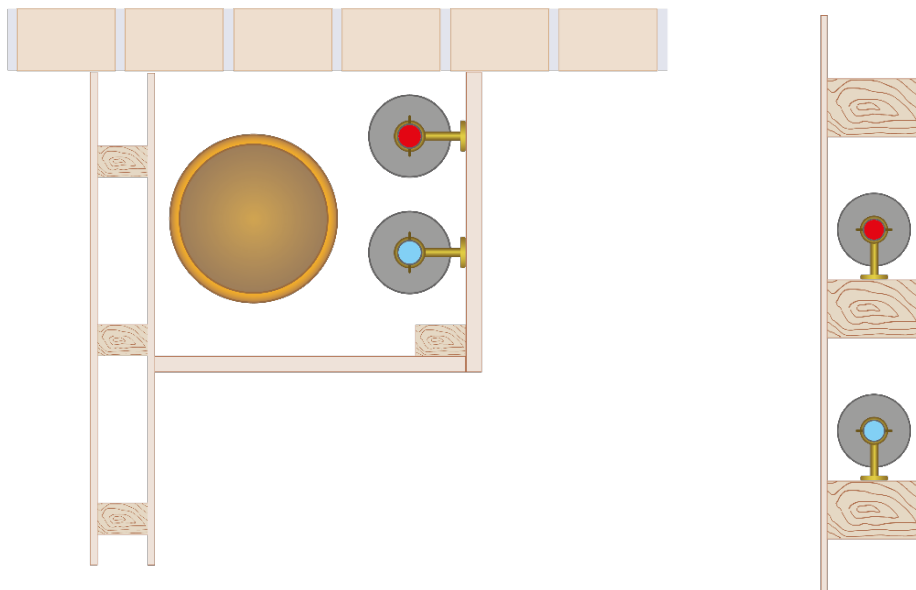
To prevent waste there needs to be provision to access any joints or water fittings which require maintenance, such as backflow prevention devices, valves which control the flow and any other operational fitting.

## How should concealed water fittings be installed in walls?

All domestic hot and cold water system pipework concealed within walls should:

- Be installed with a minimum number of joints. This is because joints are prone to a loss of integrity over time and therefore should only be considered where unavoidable.
- Be installed in a chase/duct or void. Wrapping pipework in insulation is not an acceptable method of ducting or passing through a chimney is not an acceptable method of ducting.
- With the agreement of the local water undertaker pipework may be installed alongside other services in a shared duct. An example of what may be considered as acceptable is shown below.
- Be appropriately clipped to avoid water hammer and other stresses which would affect the integrity of the installation.
- Be insulated with a suitable gap maintained between the cold water, hot water and any other heat source to prevent heat transfer or loss.
- Not be embedded or come into contact with other materials such as plaster or cement.
- Be accessible to enable inspection and replacement. Further information about accessibility can be found in [BS 8558](#).

Below are images illustrating domestic hot and cold water systems concealed in a wall and a soil pipe duct.



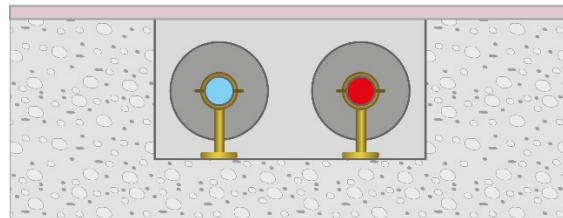
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## How should concealed water fittings be installed in floors?

All domestic hot and cold water system pipework concealed within floors should:

- Be installed with a minimum number of joints. This is because joints are prone to a loss of integrity over time and therefore should only be considered where unavoidable.
- Be installed in a chase/duct or void. Wrapping pipework in insulation is not an acceptable method of ducting.
- Be appropriately clipped to avoid water hammer and other stresses which would affect the integrity of the installation.
- Be insulated with a suitable gap maintained between the cold water, hot water and any other heat source to prevent heat transfer or loss.
- Not embedded or come into contact with other materials such as backfill, screed or cement.
- Be accessible to enable inspection and replacement. Further information about accessibility can be found in [BS 8558](#).

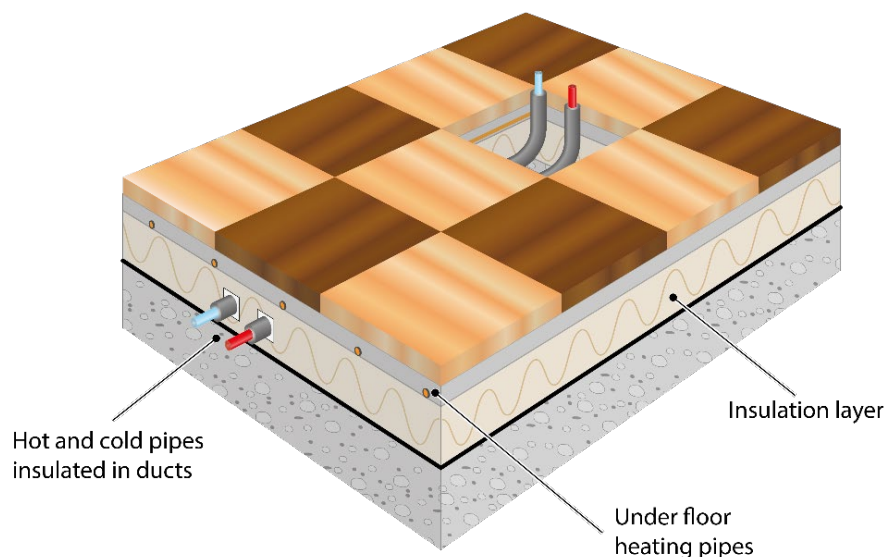


## How should underfloor heating be installed?

Underfloor heating systems should be installed in a manner considered to be acceptable to building control and the local water undertaker.

If domestic supplies are to be installed in close proximity to underfloor heating, they should:

- Be installed as a single run of pipework without any inaccessible joints below the underfloor heating insulation.
- To prevent heat transfer or loss any supply pipework should be laid with a suitable gap maintained between the hot and cold systems and both wrapped in insulation.



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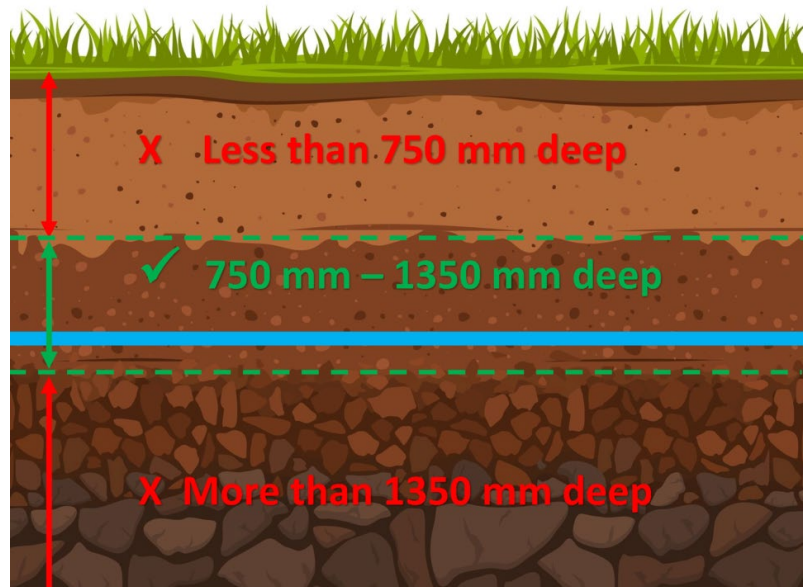
## How should outdoor below ground services be installed?

Firstly, the pipe and fittings, including method of connection, should be suitable for below ground use and the environment in which they are to be installed. Joints should be kept to a minimum. Water fittings which are susceptible to permeation by hydrocarbons should not be laid in ground near installation storing or ground contaminated with petrol or oil unless protected.

Pipework should be laid at a depth of not less than 750 mm (to limit the effect of freezing and mechanical damage) and no greater than 1350 mm deep. They should be embedded in non-abrasive materials. Where this cannot be achieved in all circumstances the consent of the local water undertakers must be obtained via [notification](#).

Where the local water undertaker consents to pipework being laid at less than 750 mm it should be installed as deep as possible below ground level and protected against warming, freezing and mechanical damage (for example due to ground movement).

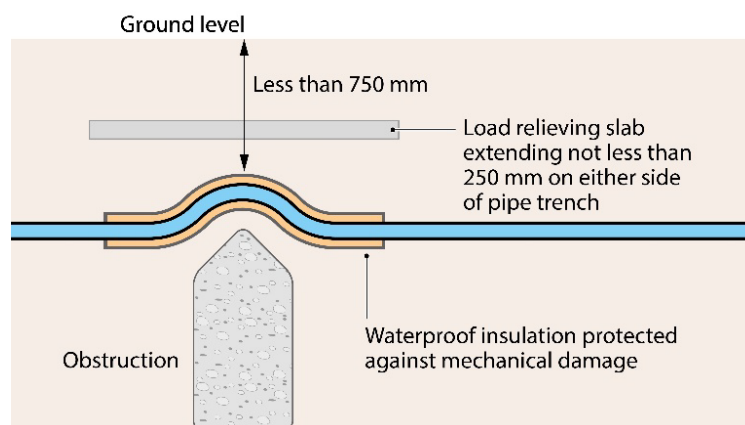
Pipework should not be installed above ground level is not permitted without the agreement of the local water undertaker.



## Are there any methods for avoiding below ground obstructions?

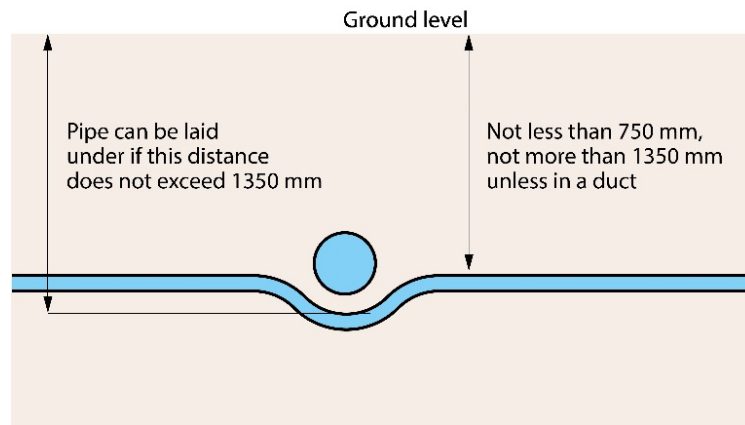
Examples of how to avoid below ground obstructions are given below.

Please note the local water undertaker should be consulted before laying pipework over an obstruction.



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### Can pipework be laid in a contaminated environment?

Pipework should never be installed in a contaminated environment such as a sewer or cesspool.

Non-metallic (plastic) plumbing fittings are at risk of permeation by diesel or heating fuel, pesticides, insecticides and similar organic substances or fluids, so should never be installed where they could come into direct contact, including contact with soil contaminated with them.

Where this is unavoidable contact the local water undertaker for advice.

### Can non-metallic fittings be laid close to gas services?

Non-metallic water fittings which are susceptible to permeation should not be installed in close proximity to other services for example gas pipelines, or in ground contaminated with hydrocarbons or other contaminants of concern.

For further advice contact the local water undertaker.

### What is the recommended distance between water services and other utilities?

The recommended distances between utilities can be found in the latest National Joint Utilities Group (NJUG) guidelines. Where these dimensions and depths cannot be achieved protective measures will be required.

If the installation of the pipework is [notifiable](#), under regulation 5 of the water fittings regulations in [England, Wales](#) and [Northern Ireland](#), [byelaws in Scotland](#), installation advice should be provided as part of the notification process.

If it is not notifiable there remains a legal obligation for the premises owner or occupier to ensure the plumbing work is fully compliant with the water fittings regulations, byelaws in Scotland.

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## How should pipework access a building?

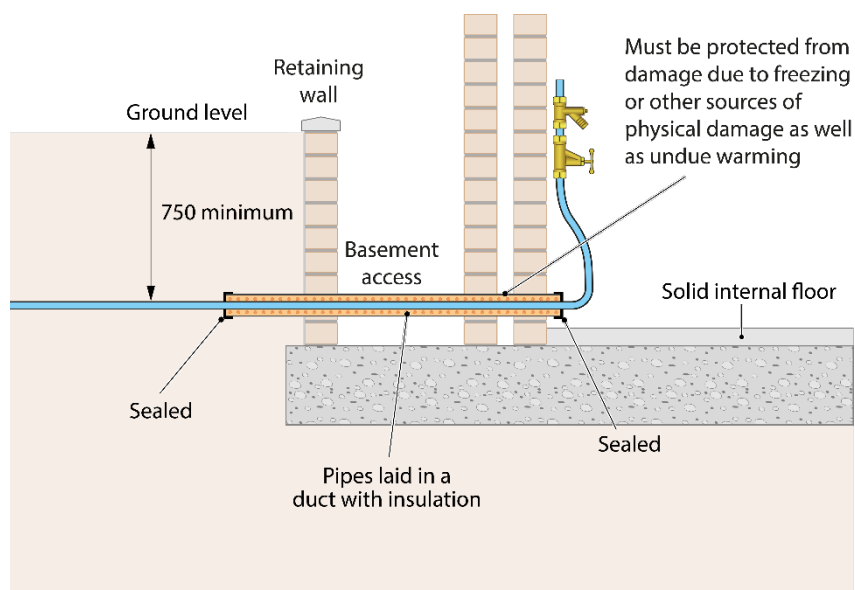
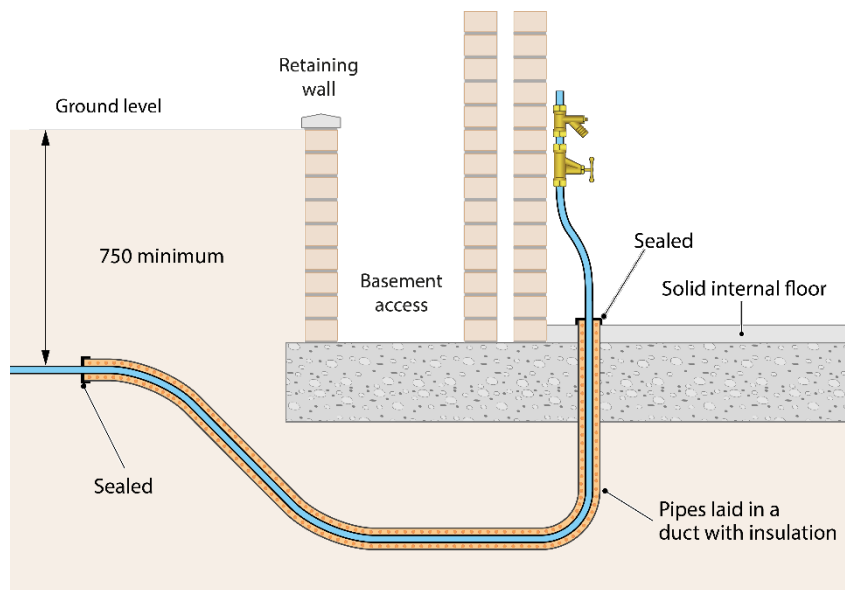
The supply pipe to a building should enter at a depth of 750 mm.

Pipework passing through walls and laid at depths of less than 750 mm, including any inside the building should be ducted. This is to prevent damage and facilitate ease of replacement, the internal surface of the ducting should be smooth bore i.e. any ridging to be external only.

The pipework should be sealed using a method acceptable to the local water undertaker. This is to prevent ingress of gases and vermin. It should also be adequately insulated. Where pipework is installed below a suspended floor if there is an air vent the pipework should be ducted and insulated to the finished floor level.

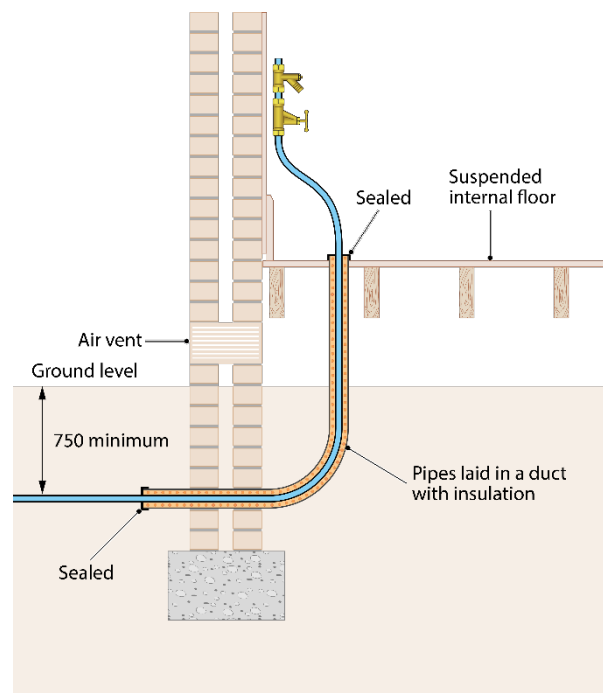
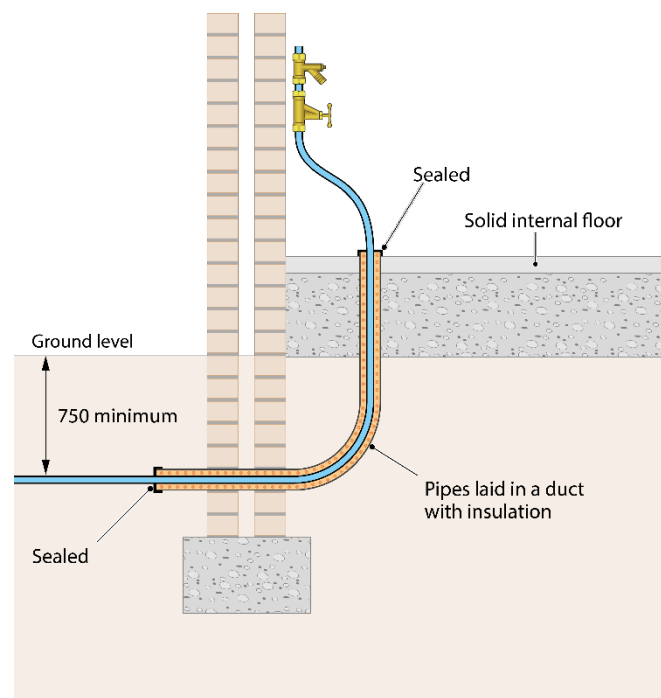
In premises where there will be no water demand or a positive change to the ambient temperature after 12 hours, the [insulator calculator](#) can be used to give an indication of insulation requirements. Where this is not likely to be the case the local water undertaker should be consulted as insulation alone may not be suitable.

Example of pipework entering a building at and below street level are given below.



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### Are there any specific requirements for plumbing installed above ground?

In addition to the requirements already listed, above ground plumbing must be protected against environmental conditions, accidental, mechanical and animal damage.

A regular inspection should be undertaken of pipework and water fittings to identify leaks or other issues. This will help to reduce waste, prevent contamination and save cost.

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## What protection against freezing is required?

The type and level of frost protection required will depend upon the environment in which a water fitting is installed, with insulation and trace heating commonly used.

Any water fitting installed outside the thermal envelope or at depths of less than 750 mm should be protected against damage caused by freezing.

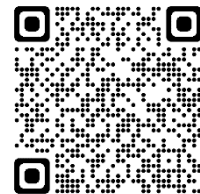
Any not used during cold weather, such as seasonal irrigation systems should be isolated and drained down. Similarly, if a premises is to be left unoccupied and unheated during cold weather, for example a holiday home or caravan, the water supply should be turned off and plumbing system drained.

When installed in accordance with the manufacturer's instructions insulation may delay but not prevent freezing.

Providing within 12 hours the plumbing system is used (there is demand flow) or there is an increase in the ambient temperature, the [insulator calculator](#) can be used to give an indication of insulation requirements for installations exposed to low temperatures. Where this is not likely to be the case the local water undertaker should be consulted as insulation alone may not be suitable.

### Additional sources of information:

- [Installation Guidance](#)
- [Backflow Protection Guidance](#)
- [Notification Guidance](#)
- [Marking of pipework leaflet](#)
- [Insulation calculator](#)



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