

Asset Policy Standard

Water Mains Protection Distances

Version 2.0

Approvals	Position	Directorate	Date
Simon Parsons	Director	EPA	19/03/26
Andrew Dunbar	General Manager Water	EPA	19/03/26
Jennifer Burrows	Water Service Strategy Manager	EPA	19/03/26

1. Introduction

Scottish Water (SW) has a statutory responsibility to maintain a continuous and wholesome supply of water. To enable safe operation, maintenance, refurbishment, and replacement of water mains, SW must retain adequate access and ensure new developments do not compromise asset integrity or pose risks to public safety.

2. Definitions

2.1 Access Distance

The Access Distance is the minimum legally supported distance required to allow SW to access water mains for repair, maintenance, and renewal. In the 2026 update, Access Distance is applied to only one side of the pipe. The opposite side will typically allow an Excavation Distance (half the access distance or 3m whichever is the larger).

No buildings, structures, or development that restricts access or introduces risk to asset integrity will be permitted within the Access Corridor (Access Distance + Excavation Distance).

It should be noted that there must always be provision for continuous access to the water main, ensuring that operational requirements can be met at all times. Furthermore, the side of the main where a 10m access distance is permitted should remain consistent and not alternate frequently over short sections, as this may hamper effective access and maintenance.

Table 1 – Access Distances

Notes

- a) Distances are **minimum** based on a pipe invert level up to 2 metres deep.
- b) Increases in depth within the main may result in an increase of the Access Distance.
- c) Final Access Distance will depend on site specific topography.

Internal Pipe Diameter	Access Distance (One Side)	Excavation Distance (Other Side)
Up to 180mm	3.0 m	3m
>180mm up to 14"/350mm	4.5m	3m
>14"/350mm up to 18"/450mm	6.0 m	3m
>18"/450mm up to 24"/600mm	8.0 m	4m
>24"/600mm	Minimum 10 m (site-specific)	5m

SW may increase distances based on topography or where the main is >2 m deep. For mains >600 mm, a RAMS and detailed design assessment is mandatory.

2.2 Access Corridor

A combined protected zone consisting of:

Access Distance (one side of the main), and excavation Distance (the other side of the main).

2.3 Stand-off Distance

The Stand-off Distance is the minimum distance, that SW recommend habited properties and structures, should be located away from the water main to prevent them being damaged due to a water mains burst. The distance is based on the operating pressure of the main, and the crater size calculations derived by the “Washington Suburban Sanitary Commission - Pipeline Design Manual” (WSSC).

In addition, consideration should also be given to the effect of vibration resulting from mains failures, as this can potentially impact the structural integrity of nearby properties and infrastructure. It is essential to evaluate the risk of vibration transmission, especially where sensitive structures or equipment are in proximity to the water main.

The Stand-off Distance will **vary according to the pressure** within the pipe and should be checked with SW prior to assigning a Stand-off Distance. The Stand-off Distance stated in Table 2 is for guidance only and specific final Stand-off Distance shall be agreed with SW for each individual development. These recommended distances may be adjusted, according to local circumstances and operational considerations.

Reasons for stand-off distances to be increased at the discretion of SW include:

- a) The water main operates at a high pressure or is at a deeper than 2 meters to invert level.
- b) Properties are deemed to be at an increased risk of flooding or damage in the event of a mains failure.

Table 2 – Stand-off Distances

Material considerations:

1. Ductile materials: Flexible and less prone to explosive failure means stand-off distances may be reduced subject to a site-specific risk assessment.

This guidance applies to pipes including, but not limited to, Ductile Iron and PE. For other materials, consultation with Scottish Water is required to determine the appropriate stand-off distances and safety measures.

2. Brittle materials: Brittle failure risk means full stand-off distances normally apply.

This applies to pipes including, but not limited to, Cast Iron, uPVC, and Asbestos Cement (AC). For other materials, consultation with Scottish Water is required to determine the appropriate stand-off distances and safety measures.

Notes

- a) Stand-off Distances are **minimum** based on a pipe invert level up to 2 metres deep and apply equally on both sides of the pipe.
- b) Increases in depth or high pressure may result in an increase of the Stand-off Distance.
- c) Final Stand-off Distances will depend on site specific assessment.
- d) Recommended indicative Stand-off Distances, are based on the WSSC Pipeline Design Manual

Crater size based on WSSC 2012 calculations	
Pressure within the Pipe	Recommended Stand-Off Distance (Max Crater Size from side of pipe)
2 bar	2.5m
4 bar	5.0m
6 bar	7.5m
8 bar	10m
10 bar	12m
12 bar	14.5m
14 bar	17m
16 bar	19.5m
18 bar	22m

Please note: The stand-off distances listed above represent worst case scenarios and are intended as maximum guidance. In certain circumstances, reduced values may be agreed upon through a case-

by-case assessment, considering the specific details of the site and proposed development. Where appropriate, engineering solutions and mitigation measures may be implemented to manage and reduce the associated risks, subject to approval from SW.

3.0 Infringements

SW does not permit building over water mains or development within the Access Corridor. Any such encroachment may compromise SW's legal duties and emergency response capability.

SW will challenge developments that infringe on the Stand-off Distance where they do not fully protect properties from potential damage or flooding due to a burst main.

Existing historical infringements do not justify relaxations for new developments.

4.0 Buildings Adjacent to Access Distance

No temporary or permanent structures are permitted within the Access Distance.

Building foundations adjacent to the Access Distance must be designed so that they impose no additional loading or settlement risk on the pipeline, and SW maintains unrestricted access to the pipe bedding.

Piling or ground vibration work within 20 m of SW assets requires prior notification and RAMS submission.

5.0 Ground Cover & Works Above Water Mains

All ground works within the Access Distance must be agreed with SW.

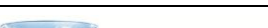
Crossing of mains by construction plant requires prior SW approval and may need protective measures.

Proposed changes to ground levels must be submitted for formal review to avoid overloading or excessive burial depth.

If the main is discovered to be at an excessive depth or unusually shallow during site investigation, this information should be promptly reported to SW. Such feedback ensures that any necessary adjustments or protective measures can be considered in consultation with SW, maintaining the integrity and safety of the water main infrastructure.

6.0 Development Areas

Developers should consider locating existing water mains within new road verges or roads where appropriate, subject to SW approval.

	Asset Policy Standard Water Mains Protection Distances	Version: 2
		Approval Date: 19/03/26

SW may restrict developments that introduce unacceptable risks to water main infrastructure.

7.0 Diversion Works

Where a proposed development conflicts with Access or Stand-off Distances, developers may request a diversion at their cost, subject to compliance with SW standards and specifications, design and installation by WIRS-accredited organisations, and formal agreement with SW.

8.0 Notification

Developers must notify future landowners of all relevant restrictions. Where sites are subdivided, restrictions must be embedded in the Deed of Conditions.

9.0 Supplementary Information

For early-stage advice, please visit the Scottish Water Development Portal at the link below

[SW Development Portal](#)

(<https://www.scottishwater.co.uk/business-and-developers/development-services>)

Or search for Development Portal on the core Scottish Water website.