

A guide to new water mains and services on new development sites

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This document is intended as a guide and aide-memoire to assist developer site managers and Self-lay Providers (“SLP”) in the delivery of self-lay mains and services within Southern Water Services (“SWS”) region of supply.

SWS specification and standards are the same for work delivered either by SWS in response to a mains or services requisition or by an SLP working with a developer. SWS’s Self-lay policy document incorporates SWS local practices specification and guidelines covering Design practice, a Schedule of Permissible Materials, and Construction arrangements, supplementary to the WRc Code of Practice for the Self-Laying of Water Mains and Services – England and Wales: Edition 3.1, May 2017 (“COP”). .

Health and Safety

Construction Design and Management (CDM) Regulations 2015

Under the CDM Regulations 2015, the developer has client responsibilities for the new mains and services construction on its site, these include:

- Notifying SWS in writing (or else the SLP if appointed and named in the Self-lay Agreement with SWS) of all contractors and sub-contractors (each of whom shall be accredited under the Water Industry Registration Scheme).
- Select and appoint a competent CDM co-ordinator where the works are notifiable under the Regulations.
- Select and appoint a competent Principal Contractor
- Verify the sufficiency of the construction phase plan prior to commencement
- Verify that suitable welfare facilities are in place prior to commencement
- Exchange of all relevant Health and Safety Information amongst all parties involved on the site

Water mains – site preparation and commencement of work (mains)

Key Points

1. Prior to any work starting: A pre-start commencement meeting for all new SLP’s proposing to undertake work in SWS’s region of supply is required. This will be arranged by SWS further to an application being made to SWS for self-lay works.. Once this initial meeting has been held there is no SWS requirement for subsequent pre-start meetings with an SLP on subsequent phases of development, or other sites, unless the SLP or developer requests such of SWS.
2. However, it should be noted that in the event SWS has demonstrable evidence of historic poor practices in the delivery of self-lay work in its region of supply by any specific SLP then the SLP shall be required to attend a pre-start meeting with SWS prior to commencement of a new development site or phase.
3. Prior to commencement of self-lay works it is important to note that the Self-lay Agreement between the Developer, the SLP, SWS, and any others, must have been completed. Additionally that any SWS required Pre-commencement payment(s) and information requested has been provided to SWS (i.e. to include accreditation documentation for the SLP if to be so employed)
4. Check that the proposed design for the installation of mains and services for the site has been approved by SWS and that it is the latest version; and that all requirements for adoptable highway (a suitable footpath, verge, or service strip) have been accommodated.
5. An easement will be required by SWS to accommodate any mains or services that are installed in land not forming part of the highway or adoptable service strips.
6. It is recommended to check and confirm with SWS the extent of what work is to be completed by any SLP as “contestable work” or by SWS, and what is to be completed by SWS as “non-contestable” work and any impact on the programme and delivery of an SWS source supply main (if applicable) from SWS’s existing water mains network to the point of connection with site specific mains.
7. Be aware that notices may need to have been served on landowners and the Highway Authority and that associated restrictions may apply that may affect a work programme.
8. If no kerb line is installed to delineate the line of proposed roads and footways it is recommended that a suitable line for the main is marked, clear and free of obstructions with the back edge of the footpath or service strips..
9. The positioning of all proposed meter chamber (boundary boxes should be confirmed relative in particular to required materials as these are ideally to be sited clear of where there is a potential for vehicular traffic.
10. It is recommended that SWS is constantly updated with the latest information applicable to ground conditions (particularly contaminated ground) as proposed materials must be suitable to SWS’s standards and specification..
11. It is recommended that as water mains are installed at a greater depth than for other Utilities that the water main is installed first.
12. It is important to check that the water mains and services and the other Utilities pipework or cables are installed

compliant with NJUG (Street Works UK) Guidelines on the Positioning and colour coding of Underground Utilities apparatus – issue 8: 29th Oct 2013” or any later version.

13. In accordance with the above point water mains and services shall be constructed with a minimum cover of 750mm from the crown (top) of the main relative to the final surface level, and for mains 690mm from the centre of the main to the roads kerb face
14. Service pipe road crossing ducts should be installed by the developer in the positions shown on the design drawing. They should be sized appropriately and at a depth of 750mm below the finished service level and at right angles to the main. Indicative sizes are provided on the Southern Water design drawing. The position of the ducts must be clearly marked at both ends.
15. Ensure that road crossing ducts for service pipes are positioned to suit the approved design drawing (typically at 90° to the Plot to be served) and are at a depth to suit the depth of service pipework.
16. Ensure that any pipes or cables installed after the water main does not compromise the ability to connect any services afterwards or will prevent SWS future access for maintenance, repair or connections. Typically a minimum 300mm clearance is required around a water main to make any connection. If other Utilities apparatus compromise SWS access requirements due to site specific constraints it is recommended to contact SWS so that a practicable solution or else a diversion of mains pipework may be necessary, as may be agreed.
17. Ensure that fire hydrants and all other street furniture is accessible and free from obstructions and that the operating valve spindle is central in the chamber.
18. SWS is not responsible for damage caused to any installed apparatus even after completion of work if site development work continues there-after (this includes chambers blocked up with debris) and will, following adoption, require that unimpeded access is restored and will invoice the Developer for this damage.
19. Ensure that any changes to the site layout/design are communicated to SWS such that associated changes to the design for mains and service installations can be assessed and accommodated.
20. The developer and SLP will be responsible for ensuring that all chambers are installed vertically and frames and covers are at the correct level to meet the finished surface levels.
21. If SWS is required undertake any work on the site following mains and /or services having been adopted the cost of such shall be recharged to the Developer and/or SLP to suit the circumstances.
22. All people working for SWS should be given a site induction by the Developer immediately upon arrival on site.

Work Inspection Audits

Regardless of whether the work is being delivered by SWS directly employed Contractor or by an SLP working with a developer SWS will undertake routine inspection audits during the construction of the work (and in particular work associated with connection of mains) to monitor compliance with required standards and specification and to offer advice and support as required in the delivery of the work to ensure such is managed smoothly and in a compliant manner.

Pre and Post construction Commissioning and handover

Regardless of whether the work is being delivered by SWS directly employed Contractor or by an SLP working with a developer: Prior to a new section of main being connected to a preceding section (or the original source main) SWS will undertake a “Pre-connection inspection audit” to assess that the work is compliant and that all commissioning and handover obligations and information requirements relative to said connection(s) (specifically SWS’s Safe Control of Operations requirements) have been satisfied.

Following a successful mains connection: SWS will undertake an audit to confirm that all work was completed satisfactory, and that any identified defective work is recorded and corrected to suit.

It is important to note that – No connection shall be undertaken without prior written approval from SWS in accordance with the SWS Self-lay Policy and so in the event of any breach of said Policy SWS (as the Undertaker responsible for security of supply and water quality to customers in its region of supply) reserves the right to instigate appropriate legal proceedings in the event of the service to SWS’s customer’s or water quality having been compromised.

Things to be audit checked include,

1. Compliance with Schedule of Permissible Materials
2. Compliance with SWS Self-lay Policy (if a SLP engaged to deliver the work); to include,
 - Mains and services have been constructed correctly
 - Fittings have been installed as per the design drawing
 - Fittings are in chambers set to finish levels provided
 - Correct covers are fitted
 - Correct marker posts are installed & plated
 - Compliance with Good Industry Practice

Site completion - final sign off

When all permanent surfaces are fully completed, a site walk over will be required with SWS. Any defect rectification work identified at this point will be charged to as appropriate.

The developer is requested to contact SWS to arrange this meeting.

Flushing of mains – turnover of water

It is a requirement that there is always a sufficient turnover of water on all potential dead-legs of main and/or sectional lengths and a regular flushing of these mains shall be undertaken to satisfy water quality requirements. Operation of existing SWS valves shall only be by SWS personnel or persons authorised in writing by SWS. The cost of such flushing work is considered by SWS as recoverable (until such time as the development demand is sufficient) in accordance with its published charges and a suitable flushing regime will be agreed at the pre-start meeting.

Water may be turned over sufficiently subject to SWS approval and monitoring of the agreed work, such that if turnover of water is not compliant with the need to protect water quality SWS reserves the right to revert to a flushing regime. Water may be turned over as follows:

- (i) By, prior to any end washout on any section/phase of main, the developer installing a new service connection that can be turned over (i.e. be used for building water supply subject to

Flushing of mains cont'd:

- (ii) Acceptance by SWS and account set-up as a temporary non-household service); or
- (iii) Alternatively, by means of a temporary or permanent sluice valve installed on the end of the section of main followed by an approved SWS metered standpipe on a washout (but not on a hydrant).

The developer is responsible for ensuring that all required permits and agreements are in place and for identifying where water can be flushed to and for disposal of flushed water and if SWS is flushing whether water is required to be de-chlorinated first.

Service connections & communication pipes

Key Points

Criteria for communication pipes and positioning

- It is the developer's responsibility to ensure service pipes are installed from the building to the highway boundary of the property
- All service pipes shall comply with Water Supply (Water Fittings) Regulations 1999 and Water Supply (Water Quality) Regulations 2000 (including Regulation 31). All materials shall be WRAS approved for use on potable water supplies.
- Service pipes shall be installed at a minimum of 750mm (depth Max 1350).
- Ducts are to be provided for any services where the main is on the opposite side of the road to the plot to be served.
- **Contaminated Ground:** Where any part of the site is contaminated appropriate WRAS approved materials for pipe systems shall be installed e.g. barrier pipe..
- Service pipes are capped and labelled to show which plot they supply (particularly when multiple pipes brought out to a single location i.e. for a manifold connection).
- The pipe must be ducted where it enters the building so that the pipe can be easily retracted and replaced and sealed where it enters the building and internally to finished floor level.
- An internal stop tap must be installed prior to service connections being made.
- **See also the SWS Meter Location and Installation Guide available on SWS Website**

Services - manifold connections

If any of the service connections on site are to be made using two or six way manifolds, the service connections for all of the properties served by each manifold must be requested at the same time and they must all be ready to be connected in one visit and all pipe identified and tagged to identify plot to serve.

Requesting Service connections from SWS

An SLP is able to undertake Contestable work service connections when no SWS risk criteria applies as in such cases the connections may then be re-designated as Non-contestable work to be done by SWS. However, regardless of installer, the following points 1 to 9 inclusive must be completed to SWS's satisfaction:

1. All relevant SWS charges have been paid in accordance with our published charges.
2. Installation of plumbing for (Ref WRN20) is complete.

3. The service pipe from the property to the boundary is installed compliant with the required specification and the Water Regulations.
4. The service pipe is clearly marked as to which property it supplies and is sealed to avoid contamination
5. Area around the service connection is free from obstructions such as skips, scaffold and building materials
6. The pipe inside the building has a stop tap fitted – (BS1710 brass stop tap).
7. Where the service connection crosses site roads, the ends of the ducts are exposed and marked; pipe is installed in straight runs.
8. The finished kerb line and levels are known.
9. Boundary boxes should not be in driveways or on vehicle crossovers unless location agreed by SWS and appropriate vehicular chamber /boundary box used.

Water Regs:- Notification of proposed works must be completed and consent passed before trench is inspected.

Occupancy of new properties

The developer will be charged for any standing charges and water consumption until SWS is informed of the new occupant's details.

When notifying SWS of a new occupant the following information is required:

1. SWS reference number (including SPID number for Non-Household connections).
2. The plot number and proposed postal address.
3. The date the plots pipe are ready for inspection/connection and occupancy
4. Confirmation of pipe size.
5. Confirmation of meter size and type.
6. Confirmation of domestic or non-domestic supply.
7. Confirmation of connection to be to an off-site main.
8. Confirmation of connection to an on-site main.
9. The date the meter was installed.
10. The meter location
11. Occupier address and previous address if within SWS region of supply
12. The meter serial number.
13. The meter reading

Post service connection damage

Any damage caused to meter boxes after they have been connected will be repaired or replaced by SWS and the full cost of the work will be charged to the developer.

Temporary building supplies - connection to main

All temporary standpipes and welfare facilities must comply with the Water Supply (Water Fittings) Regulations 1999. When the temporary building supply is no longer required, Southern Water must be contacted to arrange for the supply to be disconnected.

All standpipes and / or taps, that a hose may be connected to, must be fitted with a double check valve.

In some cases a permanent house connection may be used initially for building purposes. See Standpipes under:

Standpipes

In order to avoid the risk of legal proceedings please contact Supply Water Services (Aquam) who handle applications for the hire of standpipes within the Southern Water area.

Contact details

Telephone: 0844 984 2788

Email: southernwater@waterservicesltd.com

Chlorination of service pipes

Where a supply pipe is 63mm OD or greater and 15m in length or over the developer is required to submit a 'Bacteriological Certificate' prior to the connection and Chlorination Certificate with the water main. This should include all internal and external pipework and fire fighting supplies.

Fire hydrants on new water mains

Temporary Building Supplies shall not be installed on fire hydrants

Unauthorised use of a fire hydrant / washouts is an offence under section 174 of the Water Industry Act 1991. Interference with fire hydrants / washouts can result in:

- Contamination of the water network
- Damage to fire hydrants & washouts
- Discolouration of the water network
- Burst mains due to pressure surges
- Reduction in pressure of the water network
- Interruption to supply to surrounding properties

Designers of new water mains shall liaise with the local Fire Authority in order to install new fire hydrants where requested by the Fire Authority.

Fire hydrants are life saving devices so it is important that once the new water main is commissioned:

- Site access is made available to fire service personnel so that the new fire hydrants can be inspected and adopted by the Fire Authority
- The new fire hydrants are kept free and are not covered or obstructed as they must be accessible in the event of a fire during the construction of the development
- When constructing footpaths and other final surfaces, the correct fire hydrant cover is installed, the fire hydrant marker post is in position, and the fire hydrant cover is to finished surface level and not buried
- Fire hydrant chambers are free of debris and surfacing materials and the cover can be removed.

SOUTHERN WATER CONTACT INFORMATION

Southern Water Technical Call Centre:	0330 303 0368	
Water Regulations Notification Office:	01962 716042	
Developer Services Office	0330 303 0119	Developerservices@southernwater.co.uk
For trench Inspection audits (Self-lay sites) and to arrange pre-start meetings – contact email under		
Sussex (excluding Hastings area)		glenn.smither@southernwater.co.uk
Hampshire and Isle of Wight		dean.abbott@southernwater.co.uk
Kent (including Hastings area)		stephen.goodwin@southernwater.co.uk
For pre and post mains connection inspection audits - contact email under (cc to above)		
Sussex (excluding Hastings area)		paul.surita@southernwater.co.uk
Hampshire and Isle of Wight		calin.fendrihan@southernwater.co.uk
Kent (including Hastings area)		colin.carter@southernwater.co.uk

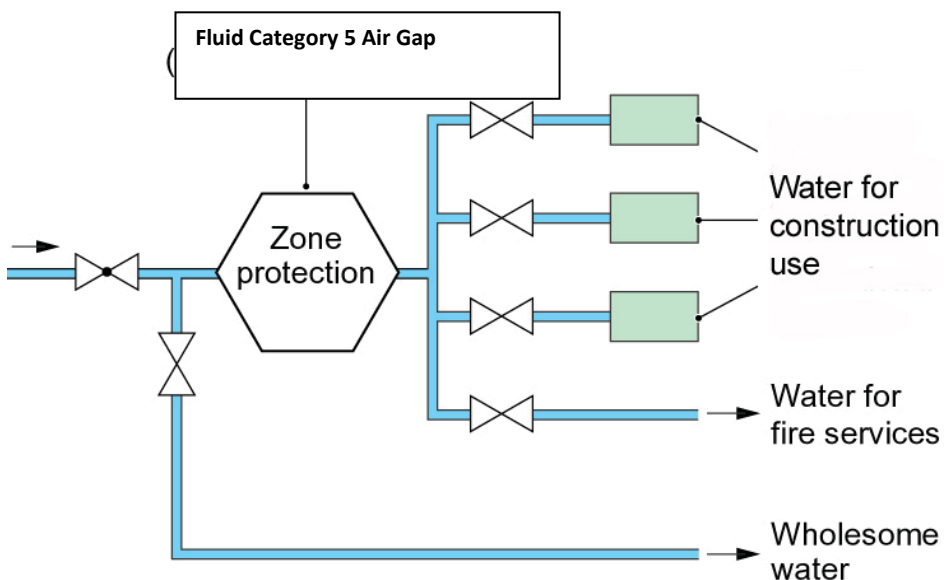
Appendix A

1. Southern Water will aim to guarantee the following:

- Pressure 1.0 bar
- Flow 9 Litres per Minute

2. Below is an example of how to achieve this zone protection

“Whole-site backflow protection” using a backflow device rated at fluid category five (FC5) installed on the supply pipe or private water main close to where it enters the site – e.g. a break tank arrangement with an air gap of the type AA, AB or AD .). In such circumstances, individual outlets or processes on the site do not have to have point-of-use backflow protection.



Alternative arrangements to the above example can be discussed with SWS’s Water regulations team.

3. Mixing Silo Water Connection

Mortar Mixing Silos: The risk level associated with dry mortar mixing silos is Fluid Category 4 and can be supplied by either;

- A break cistern incorporating a “AF” air gap, or a,
- cement batching plant which contains cement, additives and aggregate being mixed with water, is accepted as being in Fluid Category 4, permitting the use of an RPZ valve for its backflow protection. The valve should be tested either on relocation of the plant between building sites or at six-monthly intervals, whichever is more frequent.


Relative to the above use of an RPZ valve: the Developer shall obtain written permission from Southern Water prior to commencement of works.

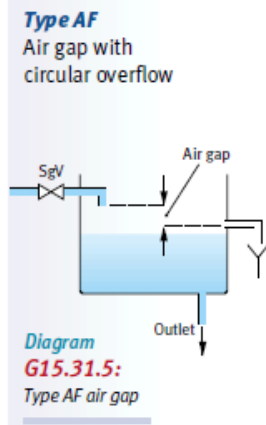
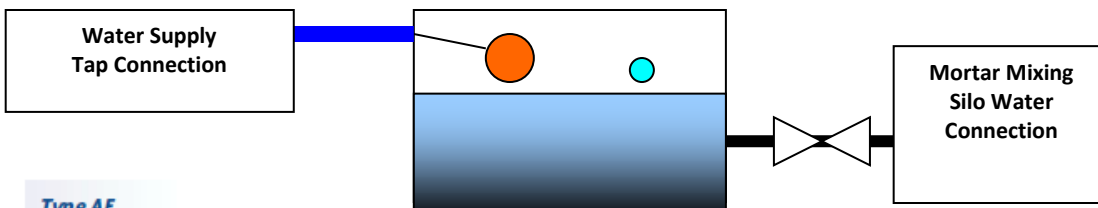
The following requirements also apply:

- See the WRAS leaflet AIM 08-01: Type BA device – Verifiable backflow Preventer with reduced Pressure Zone (RPZ Valve) – available on the WRAS website (www.wras.co.uk/publications)
- If backflow occurred in the supply pipe, contaminated water returning from the equipment into the drinking water supplies could present a serious risk to the health and safety of not only your own company employees, but also to this company’s customers who draw water from the same mains networks into which your supply is connected.

4. **How to achieve the requirement when a direct mains water connection taken from a Hose Union Bib Tap to a cement mixing silo is not permitted.**

The correct installation is shown under:

Circular Overflow  set 50mm below the water inlet to the crown of the overflow, the diameter of the circular overflow shall be not less than 50mm.



'Type AF – Air gap with circular overflow' means a non-mechanical backflow prevention arrangement of water fittings with an air gap measured downwards from the lowest point of the discharge orifice, which discharges into the receptacle, to the critical level.

WRAS / Water Undertaker Hose Union Taps Risk Assessment

5. General Information

- **DETR (Department of the Environment, Transport and the Regions):** States that Non-domestic hose union taps represents a Fluid Category 5 risk, however Water Companies have been given an opportunity to risk access the downstream risk hence the following:
 - **Area of Interest:** Backflow prevention
 - **Topic:** Fluid Category
 - **Title:** Non-domestic hose union taps and use of Fluid Category 5 categorisation
 - **Clause Reference:** Schedule 2 paragraph 15 & G15.3 of the Water Supply Water Fittings Regulations 1999.
 - **Reference Number:** B08 of the Water Supply Water Fittings Regulations 1999.
 - **Decision Date:** June 2001 (Revised February 2012)

- **Original text:**

The backflow risk classification “Fluid Category 5” should be reserved for examples of the worst backflow hazard. An indiscriminate categorisation of hazards as “Fluid Category 5” can compromise the classification system.

February 2012 revision:

Water companies take account of government guidance in their enforcement of the Water Fittings Regulations, but guidance cannot cover all circumstances. The categorisation of non-domestic hose union taps as a fitting that require fluid 5 protection is a recognition that in some non-domestic situations the fluids at risk of being present will be more serious health hazard. Water Companies do however adopt a risk based approach to their enforcement of the Water Fittings Regulations and where a risk assessment indicates that the risks associated with an individual hose union tap are less than fluid category 5 they will accept alternative approaches.

Where a hose is connected to the hose union tap you shall install at the outlet of the hose a robust hand held trigger gun under user control at all times, the trigger gun is not permitted to have a trigger locking mechanism to lock the water in the on position.

6. Road Cleaning / SWSeeping

Road cleaning machines which require water must use filling points which have fluid category five backflow protection, either at the point of use or, where appropriate, by zone or whole site protection. The connection of stand pipes to hydrants on the water supplier’s public water mains does not come under the scope of the Water Fittings Regulations, but their use is subject to the consent of the Water Supplier and must be in accordance with its conditions of use.

7. Hire of metered standpipe

See page 5 in GUIDE ABOVE for contact details and note:

An approved metered standpipe to draw water from Southern Water’s existing mains water distribution network can include;

- Use by road SWSeeper’s.
- Irrigation Landscape use.
- Use as a temporary building supply.
- General usage within a building site.

All non- approved stand pipes / hydrants are illegal and shall be confiscated by Southern Water and subsequently disposed off.

8. Site Wheel Washing

Water for domestic purposes

On construction sites water may be used for domestic purposes such as canteen use, toilet and washing facilities and laundering protective clothing.

This usage is subject to the full scope of the Water Regulations (including the use of backflow protection arrangements).