



## **Developer Services**

### **SELF-LAY Water Mains and services**

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## 1. Introduction

This document sets out the terms and conditions under which South East Water will allow the SLP to install new water mains and make service connections for new developments using water for domestic purposes under the provision of the Water Industry Act 1991 as subsequently amended by the Water Act 2003.

This policy should be read in conjunction with a document entitled 'Self-Laying of Water Mains and Services' – A Code of Practice for England and Wales – 3.1 edition produced by WRC plc on behalf of United Kingdom Water Industry Research Ltd (UKWIR).

The policy should also be read in conjunction with OFWAT publication 'Competition in providing new water mains and services pipes: Guidance to companies – Version 3' which is available at [www.ofwat.gov.uk](http://www.ofwat.gov.uk)

Details to be amended and supplementary clauses to the Code of Practice (COP) which the SLP must adhere to in order to comply with South East Water Self-Lay policy.

## 2. Commitments

- South East Water is committed to developers having a choice in the way sites are provided with a water supply and to comply with all requirements of competition legislation.
- Whenever a new supply is required, we will advise the developer or the SLP of the different ways of securing that supply – requisitioning or self-lay. Upon receiving all the necessary information, we will provide an estimate, as appropriate, in a timely manner. We will also identify any offsite reinforcement works which may be required in order to provide the development with a supply.
- We will treat SLP in the same manner as we treat our own contractors and will not require a higher specification of workmanship or materials than we employ for our own work.
- We will pay the SLP or developer upon satisfactory commissioning of the works an appropriate amount reflecting the value of the assets to South East Water.

**SLP and their subcontractors shall as a minimum have achieved partial accreditation with the Lloyds Register (LR) Water Industry Registration Scheme (WIRS) before any self-lay works may be undertaken, see [www.lloydsregister.co.uk/WIRS](http://www.lloydsregister.co.uk/WIRS)**

### **3. Works that can be undertaken by the SLP (Contestable Works)**

**It will be for an SLP to decide which work it wishes to undertake but we will permit an SLP to do any or all of the following contestable works under a self-lay agreement:**

- Designing of on-site water systems in accordance with the Code of Practice and South East Water specifications but not including the sizing of pipework which will at all times remain the responsibility of South East Water
- Installation of on-site mains for domestic supplies on a development site
- Installation of off-site mains that extend to a point of connection to the existing network to be determined by South East Water. Such works may be undertaken by an SLP unless there are valid engineering or public health reasons why South East Water should undertake them. Installation is subject to the SLP having obtained all necessary easements, street authority approvals and satisfied any other legal requirements.
- Routine in-line mains connections (often referred to as 'piece through') subject to the relevant safeguards and accreditation
- Installation of mains extensions and the newly laid part of mains diversions on new development sites where the developer or SLP has the necessary permissions, where no existing customers will be affected and where there are no engineering reasons why this work should be non-contestable.
- Installation of service pipes to new mains
- Connection of service pipes to new mains once those mains have been commissioned by South East Water provided the appropriate standards are met and there are no risks to existing customer. Note that an SLP may also make service connections to a new main laid on a development site either by South East Water or by another SLP
- Connection of service pipes to existing off-site mains subject to the appropriate accreditation and caveats
- Swabbing, pressuring testing and disinfection of new mains, under the supervision of South East Water.
- Provision of As-laid DWG drawings to South East Water specifications
- Installation of water meters to South East Water specifications and subject to South East Water approval.

#### **4. Works which South East Water will always undertake (Non – Contestable Works)**

South East Water will always be responsible for the following non-contestable works for reasons of network security and public health. We will undertake these activities and, where appropriate, make a charge to recover our reasonable costs:

- Sizing of on-site water mains
- Approval of all on-site water system designs
- Design of off-site water systems to reinforce the existing network
- Inspection and auditing of SLP work
- Off-site work to reinforce the existing network – unless we are satisfied that work by an SLP would not impact upon existing customer during construction and commissioning.
- Mains connections that involve undue risk to existing customers
- Mains connections other than those specified as contestable works
- Determination of the timing of the service pipe connections to new or existing mains that involve risks to existing customers
- Water sampling and quality testing prior to connection of newly laid mains to South East Water's existing network.
- Decommissioning of redundant mains following a mains diversion.
- Assessment and ongoing audit of an SLP competence to the same degree that South East Water's own staff or contractors might be assessed or audited

While we permit the SLP to design on-site water systems in accordance with our own specifications, we generally find that the SLP will ask us to undertake this design work. Where we undertake the design work this will, of course, include liaison with the relevant authorities, i.e. the local fire brigade and highways authorities.

#### **5. Phased Developments**

Where the developer plans to phase the development, details of the phasing and phased adoption of the new mains must be contained with the legal agreement. If the new main is laid and commissioned in more than one phase, we must be notified of each section made 'live' in turn and the final section must be clearly identified to denote the conclusion of a specific agreement. Furthermore, 'As-laid' drawings as per section 3.7.5 of the Code of Practice should be supplied at the same time.

For each notice received, we will issue a vesting certificate of interim or overall commencement of the defects liability period.

## **6. Off-Site Mains**

- Where the SLP can obtain the necessary street authority approvals/third party easements, they can install off-site water mains. These are new mains that need to be installed as part of the development but are not within the boundaries of the developers land.
- Where the off-site mains cross private third party land, the SLP must obtain deeds of grant of easement which will be assigned to South East Water before adoption of the new mains.
- Where difficulty is encountered in obtaining third party easements, the developer should contact South East Water for further advice.

## **7. Network Reinforcement**

- Demands from a new development may impact on the capacity of the existing infrastructure to an extent where reinforcement of the network (e.g. by construction of new mains, tanks, service reservoirs, pumping stations) is required to maintain service levels to customers
- We will inform the SLP as soon as this is known along with justification of the need for and costs of reinforcement by providing an explanation of our requirement.
- We retain the right to carry out any network reinforcement work and to recover our reasonable costs.
- Where the network reinforcement will provide more capacity than required by the new development, the proportion associated with the demands of the new development will be assigned to the SLP.
- There may be occasions, for example on large development sites, where it is more efficient for us to phase off-site reinforcements in line with development progress. We will estimate, the full costs at the start estimate the triggers and timescales for phased implementation and calculate the estimated charge to the developer.
- If several developments are the cause of the necessary network reinforcement, costs will, where possible, be apportioned fairly between the different parties.

## **8. Upsizing On-site and Off-site**

- We may ask the SLP to lay a larger main than is necessary for the current development, in anticipation of meeting future demand. In this situation, we will specify the material, size and depth of pipes and pay the SLP the reasonable extra expense it incurs by meeting these requirements.
- We will recover oversizing costs from those developers and SLP who connect their development to the oversized mains under future requisitions and self-lay agreements.

## 9. Defects Liability Period

- A defects liability period (DLP) of one year shall apply to the water mains and services. South East Water reserves the right to insist upon a longer DLP where appropriate.
- During the DLP, we will expect the SLP to rectify defects notified by us in writing or email, except in the event of emergencies which may compromise service levels to customers or public health when South East Water will undertake the repairs as quickly as possible and inform the SLP thereafter in writing as soon as practicable. In this situation our costs will be invoiced for the work completed.
- We reserve the right to uncover and inspect any work undertaken in connection with the new mains or services at any time during the DLP. The SLP will be given seven days' notice of the intention to uncover any work. The cost will be met by South East Water if all standard of materials and workmanship have been met by the SLP if any work is unsatisfactory.
- Prior to completion of the DLP, we will inspect the self-lay works. This will be done jointly with the SLP. If improper work, materials or variations are found, we will agree these with the SLP without delay and confirm in writing or email. Defects shall be remedied or substituted with the minimum of delay.
- Following satisfactory inspection, completion of the DLP and rectification of defects (if any), we will sign off the DLP and assume responsibility for the maintenance of the water main and/or service.

## 10. Self –Lay Agreement

Before commencement of the works, South East Water will enter into a legal agreement with the SLP for the Self Laying of water mains and service pipes. We will not be responsible for any obligations established by contract or otherwise between the SLP and the developer.

## 11. Environmental

Here at South East Water we are very passionate about the environment and its protection. Please make sure you liaise with all the necessary authorities i.e. Natural England & The Environment Agency. Please speak to your SEW Co-ordinator for further information.

## 12. Supervision and Inspection

Once a design has been approved, and Agreement entered into, and all associated non- contestable and surety payments made, the SLP can commence main laying.

Before work commences a pre-start meeting shall be arranged between the Developer, SLP, and South East Water. The purpose of this meeting is to discuss the following:

- Scope of Works.
- Extent of contestable and non-contestable works required on site.
- South East Water's specific requirements in terms of materials, construction methods, and testing and hygiene procedures.
- Commencement date to start the mains construction.
- Dates for connections to existing mains.
- Kerb line and levels to be clearly marked by the developer.
- Health and Safety Issues.
- Number of visits required to complete construction of the main laying.
- Changes in site layout.
- Other utility services in the vicinity of the water mains or service pipes to ensure compliance with NJUG guidelines.
- Service connection types and confirmation of boundary box positions.
- Other relevant site specific information.

Operatives will be required to carry a National Water Hygiene Card at all times. Routine inspections may be carried out during mains laying to ensure all operatives are suitably accredited. Failure to provide evidence of appropriate accreditation may result in the works being stopped until the matter has been resolved and appropriate accreditation is in place. South East Water may undertake routine inspections during the course of construction as well as adhoc visits as required. Should it be found that works are not to the South East Water specification then work will be required to cease until such time as the non-conformity has been rectified.

In the event of a significant failure in quality or performance by the SLP, South East Water may report this to the Lloyds Register.

### 13. The Asset Value Payment

- We recognise that an SLP is providing assets which, subject to satisfactory design and installation, will become part of our water supply network and provide us with metered water charges income. We will therefore pay the SLP an amount which properly reflects the value of these assets to us. In assessing this value, we will take into account the income stream we will derive from the properties to be served by new mains.
- We will do this by calculating what the costs would be if the mains were to be requisitioned and we provided them.
- We will assess the likely income stream from the properties to be connected using the average annual household consumption for new properties in the South East Water region. We will make adjustments for other types of water usage where appropriate.
- We will calculate the annual financing costs for us providing the mains in accordance with the Water Industry Act 1991 as amended by the Water Act 2003.
- We will then submit the projected amount of water charges income for each of 12 years. Where it exceeds the financing cost for any year, we will take the financing costs as the income.
- We will then commute this projected future income to a net present value using a discount factor equivalent to the interest rate borrowing for requisitions prescribed by OFWAT.
- We will deduct from this commuted lump sum the charges for the non-contestable works and services we have provided as well as any contestable items we have been asked to undertake. We will pay the balance of the commuted lump sum (known as the Net Asset Value Payment) to the SLP within 20 working days of the issue of the Transfer Certificate.
- It is important that a realistic estimate is made of the likely water charges income stream. We will review historic build rates and current market conditions in the area of the development. We may also consult the local authority planning department to satisfy ourselves that the SLP's assumptions over build and connection rates are valid. We will reserve the right to amend the asset value payable should there be a significant reduction in the projected income stream during laying of the mains. Similarly we will also review the calculation at the request of the SLP if the rate of connections is likely to be significantly above that assumed at the time the contract was entered into.

## 14. How to Contact Us

All enquiries and queries relating to the provision of self-lay water supplies for new development should be made to:

1. Email - [selflay@southeastwater.co.uk](mailto:selflay@southeastwater.co.uk)
2. Letter - Developer Services, South East Water, Rocfort Road, Snodland, Kent, ME6 5AH
3. Telephone - 03330 000 060

## 15. Complaints and Disputes

If an SLP or prospective SLP is unhappy about the way we have handled any aspect of self-lay, in the first instance this should be taken up with the Estimator/Coordinator.

If this cannot be resolved to your satisfaction, you should email your complaint to [developermails@southeastwater.co.uk](mailto:developermails@southeastwater.co.uk) in order for it to be escalated.

## **Design Requirements**

The pipework system must be designed to ensure that South East Water's standards of service with regard to water supply pressure are maintained.

## **Design Drawings**

A plan should be on paper or in addition in a DWG file format for use with CAD systems. The location plan should be provided at 1:500 scale.

Widths of road, footpaths and service strips, should be annotated in each location. High and low areas should be shown by spot heights or contours that do not obscure development detail.

## **DESIGN GUIDANCE – MAINS**

Sluice valves should be installed on all branch connections and on the delivery side of main line tees.

Mains will be laid in highway adopted areas or public open spaces. Where there is a footpath, adoptable verge or service strip, these must be at least 1.5 metres wide.

The number, size and position of valves at the point of connection to the existing main will be determined by South East Water.

## **Depth of Cover**

Depth above crown in excess of 900mm must be agreed in writing by South East Water.

## **Polyethylene Pipes and Fittings**

Polyethylene pipes used for underground water supply purposes should be coloured blue.

## **Flanges for Pipes and Pipeline Fittings**

All flanges shall be PN16 unless otherwise stated by South East Water.

Nuts, Screws, Washers and Bolts

Nuts bolts and washers should be stainless steel, or mild steel coated with epoxy resin, Rilsan nylon, or zinc plating.

All joints, threads and uncoated metalwork should be protected with an approved system of protective mastic and tape (Denso products or similar).

## Valves

Wedge or gate Isolating valves shall comply with BS EN 1074-1 and 2, with operational and design features contained in BS 5163 for Type B valves.

The direction for closing shall be ANTI-CLOCKWISE for Water Supply installations. All valves shall have the direction of closing clearly indicated on the body (or handwheel as appropriate). The valve body shall be ductile iron.

For nominal bores up to DN300, valves shall be resilient seated with the gate of ductile iron, fully coated with EPDM. For nominal bores from DN350 upwards, valves shall be metal seated with gunmetal body seat rings and wedge rings.

Stems shall be one-piece with integral collar, non-rising, in stainless steel, and stem sealing shall be by toroidal ("O" ring) sealing rings, replaceable under pressure. Each valve shall be fitted with a stem cap, unless South East Water specifically requires a fitted hand-wheel.

Valves shall be internally lined with epoxy to 150 microns absolute minimum thickness, holiday free, Class A, and externally to 150 microns absolute minimum thickness, < 20 holidays/m<sup>2</sup>, Class B. All flange bolts shall be "Sheraplex" or "Rilsan" coated.

## Policy and Guidance for Developers and Self Lay Organisations

All wedge or gate isolating valves shall be clearly marked in accordance with BS EN 1074 or BS 5163, as appropriate.

All wedge or gate isolating valves, accessories and joints shall be fully tested in accordance with BS EN 1074.

All wedge or gate isolating valves shall have BSI Kitemark accreditation.

Air valves shall comply with BS EN 1074-1 and 4, and be self-acting, double-orifice, complete with a drain cock and a 90° bevelled geared isolating valve. The body may be ductile iron, grey iron, or aluminium. Grey iron parts shall be close grained, grey iron complying with BS EN 1561 EN-JL-250.

Air valves shall be coated externally to WIS 4-52-01, or with a bitumen coating solution to BS 3416 1975 Type II (cold applied). The nominal pressure rating shall be PN16.

## Boundary Boxes

South East Water's preferred metering option is the use of boundary boxes.

The boundary box should consist of a stop tap and meter facility to accommodate a standard meter (currently Sensus 620) in a concrete section (min 150 x 150 inside) or a purpose made plastic housing.

## **Excavation**

The minimum trench width should be the external pipe diameter plus 150mm either side. All trenches and connection holes should be kept clear of water. No new or existing pipes should be used for carrying water away from the excavations.

## **Pipe Surround**

Pipes and fittings should be bedded on and surrounded with a minimum of 150mm granular material either graded 3mm to 6mm size or 6mm single size.

The material should be compacted by hand.

It is not acceptable to lay the pipes on the trench bottom, cover with bedding material and lift the pipes to form the bed. Water mains must have a separation of a minimum of 300mm in all directions from other pipes, ducts or cables. Testing of PVC in Accordance with BS EN 805

Rigid plastic pipes shall be subject to a 1-hour static test at a pressure of 1.5 times the working pressure or 12 bar, whichever is the greater.

Test Certificates shall be supplied upon completion of each test, detailing the method, location, monitoring and pressure readings.

During and on completion of the test all valves shall be checked and adjusted as necessary.

During pressure testing, air valves shall be isolated and valve gland packings tightened down. Air valves shall be re-adjusted and opened upon completion of the successful test.

## **Testing of Polyethylene Pressure Pipelines**

The whole test should be recorded by a pressure logging system attached to a suitable hydrant and set to record pressures at 1-minute intervals over the period required by the manufacturer's instructions.

## **Swabbing of Water Mains**

Clear wash water shall be defined as having a turbidity of less than 1 NTU (Nephelometric Turbidity Units).

Prior to hydraulic testing, each length and branch of the main should be swabbed with foam swabs driven by water fed into the main by an approved system of temporary pipework which must incorporate a double check valve to ensure there is no possibility of backsiphonage into the existing main

## Swabs

Swabs have a density of 20 - 25 kg/m<sup>3</sup>, minimum tensile strength 95 kN/m<sup>2</sup> and a hardness (at 50% deflection to BS 4443 Parts 1, 2 and 4) of 19 to 23 kg.

The diameter of the swab shall be as follows:

- Hard swabs: nominal bore of main
- Soft swabs for mains less than 200 mm: nominal bore + 50mm
- Soft swabs for mains greater than 200 mm: nominal bore + 75mm

The length of the swab shall be 1.5 times its diameter.

Water for Testing, Swabbing and Disinfection

Add the following clause:

Any additional water needed to repeat the procedures as a result of any failure on the part of an SLO may be charged at South East Water prevailing metered rate.

## Disinfection and Sampling

Disinfection shall not commence until the cleaning and flushing process has been completed satisfactorily. When inspection of the flushing water shows its appearance is clear, the new main shall be disinfected by filling it with water containing not less than 30 mg/l free chlorine. Chlorinated water shall be drawn through to the ends of all branches of the new main by opening washouts or hydrants and monitoring of the presence of chlorine until a residual of at least 25 mg/l chlorine is measured at each outlet. Where practicable, all valves and hydrants shall be operated to bring chlorinated water into contact with their components

When filled with highly chlorinated water at the correct chlorine concentration, the new main shall be left isolated for a contact period of 24 hours. After this period the chlorinated water shall be displaced with mains water.

As highly chlorinated water is displaced its chlorine residual shall be checked at the end of each branch, or at suitable sampling points along its length, if the new main comprises a long un-branched length. If the residual at any point is less than 20 mg/l free chlorine the main shall be cleaned again and re-disinfected

When satisfactory chlorine residuals have been measured as above, the new main shall be flushed with mains water until the chlorine residual measured at the end of each branch is no greater than that of the mains water being introduced. When this is achieved, the main shall be left filled with mains water and isolated. After a further 24 hours, it shall be sampled for aesthetic, bacteriological and chemical tests. These test results shall be submitted to South East Water for approval.

A shut valve is not sufficient to isolate the new main from the existing one. If the two mains are to be directly connected prior to disinfection, a blank end (spade) shall be fitted between them.

## Hydrants

Hydrants shall comply with BS 750, and be screw down Type 2. The direction of closing shall be ANTI-CLOCKWISE.

The outlet shall be 2 1/2" London gunmetal or copper alloy, and the body ductile iron. An automatic frost valve shall be incorporated in the body. The stem shall be one-piece with integral collar in stainless steel, and fitted with a loose stopper.

Hydrants shall be internally lined with epoxy to 150 microns absolute minimum thickness, holiday free, Class A, and externally to 150 microns absolute minimum thickness, < 20 holidays/m<sup>2</sup>, Class B.

All hydrants shall have BSI Kitemark accreditation.