

# **Thames Water Company Specific Addendum to the UKWIR National Code of Practice**

for the Self Laying of Water Mains  
and Services (England and Wales)

Version six - July 2009



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## 1.0 Introduction

This document is Thames Water's company specific Addendum to the UKWIR Code of Practice for the Self Laying of Water Mains and Services (England and Wales), 2<sup>nd</sup> edition, 2009. This addendum should be read in conjunction with the UKWIR document as it specifies Thames Water's technical and process requirements, especially where they vary from the UKWIR Code of Practice.

Thames Water is obliged by the Water Industry Act 1991 to develop and maintain an efficient and economical system of water supply within its licensed geographical area. In fulfilling this obligation, Thames Water adheres to the concept of fair competition at all times, which we believe will benefit our customers.

Fair competition means:

- Thames Water will not insist on doing all works ourselves,
- Thames Water will charge reasonable costs for works we carry out,
- Thames Water will be transparent in our charges for works we carry out,
- Thames Water will not impose unreasonable conditions where works are carried out by developers or their contractors

## 2.0 Contestable Work

Some elements of the work can be carried out by third parties, i.e. Self Lay Organisations (SLO's). These are:

- Designing on-site water systems in accordance with Thames Water's specifications.
- Installing on-site mains.
- Routine in-line mains connections, subject to relevant safeguards and accreditation schemes being in place.
- Installing off-site mains in third party land and highways where SLOs have obtained the necessary easements, street authority approvals and satisfied any other legal requirements.
- Installing extensions and the new part of diversions to new development sites, where SLOs have the necessary permissions and no existing customers will be affected and/or there are no engineering reasons why this work should be non-contestable.
- Installing service pipes to Thames Water's specifications.
- Connecting service pipes to new mains (after we have filled the new mains with water), provided the appropriate standards are met and there are no risks to existing customers. See also the guidance on timing of service pipe connections (section 3.4.6)

- Connecting service pipes to new development sites installed by water companies or other SLOs.
- Connecting service pipes directly to existing off-site mains, subject to appropriate accreditation and caveats.
- Swabbing, pressure testing and disinfecting new mains under supervision.
- Fitting water meters to Thames Water's specifications and subject to Thames Water's approval.
- Provision of as constructed drawings to water company specification.

### **3.0 Non-Contestable Work**

Some elements of the work can be only be carried out by Thames Water as they may affect our ability to comply with statutory and regulatory requirements. These are:

- Designing off-site water systems.
- Sizing pipes – Thames Water can retain responsibility for this part of the design work.
- Approving on-site water system designs.
- Off-site work to reinforce the existing network.
- Determining the timing of service pipe connections to new mains.
- Connecting new mains to existing water distribution network.
- Connections from new mains that involve risks to existing customers.
- Connecting service pipes directly to existing mains where there is a risk to existing customers.
- Water sampling and quality testing.
- Decommissioning redundant mains following a diversion.

### **4.0 How do I Self Lay?**

The following flowcharts are designed to provide guidance on the self-lay application, works delivery, asset adoption and asset payment processes. The flowcharts also include our levels of service to the applicant throughout the self-lay process.

Please see Appendix A for the standard costs applied to non-contestable elements of the application process.

## 4.1 The Application process

A Thames Water **Self Lay** application form should be completed as part of the submission. Please note that this is different to the standard application form for new mains and services. Although the Developer usually makes the self lay application, it is recognised that they may use a consultant or project management company on their behalf. Where this is the case, they may complete the application form and submissions along with a letter from the Developer stating that they may act on their behalf.

The Self Lay Agreement (section 4.1.3) will only be between Thames Water and the Developer, SLO, Land Owner, Surety and Adjoining Landowner. The consultant or project management company is not financially liable to Thames Water with regard to the water assets as they will not be a signatory of the Self Lay Agreement.

The application process is shown in flowcharts 4.1A and 4.1B, and consists of :

### 4.1.1 Application Fee

Please provide with your completed application form an application fee + VAT. This is detailed in Appendix A, and is required to ensure Thames recovers the costs associated with the scheme including the design costs, one visit to site by our Field engineer and legal and administration costs associated with preparing the Self Lay agreement.

Developers and SLOs are strongly advised to ensure that a capacity check is completed prior to any application to ensure that capacity is available, and any required reinforcement to the existing water distribution network is determined prior to a self Lay application.

**Please note that failure to complete a capacity check can result in delays to the process.**

The SLO **may** also be asked to provide references including size, material, length and name of planning supervisor of previous work on water apparatus both within and outside the Thames Water area. Please see Appendix B for more information.

### 4.1.2 Design

You have the option to ask Thames Water to do the design work for your development or alternatively submit your own technical design. If the SLO requests Thames Water to produce a design, you may wish to provide details of any relevant service corridors available.

If you choose to submit your own technical design, Thames Water will examine your proposal and confirm its approval. In both cases there is a design fee + VAT that should be sent with the self lay application.

If any technical design elements are unsatisfactory, Thames Water will contact you with details of the amendments required and return your proposal to you. We aim to do this within 5 working days. When you have corrected the technical design you will

be required to re-submit your design proposal. An additional design re-approval fee + VAT will be charged.

**Please note that no work may commence on-site without design approval.**

#### **4.1.3 Quotation & Self Lay Agreement**

A quotation will be issued to the Developer based on the contestable and non-contestable elements of work.

Included within this quotation is also guidance to the amounts payable under various statutory options for Thames Water to complete all the works. If you wish to opt for one of these options, please contact us for the relevant paperwork.

All quotations are valid for **28** calendar days. Any request to revise the quotation where all the details remain the same will require a re-quotation fee + VAT (See Appendix A) Any quotation that requires changes to the layout will also be subject to the re-quotation fee + VAT before the revision takes place.

Once the quotation has been accepted, three copies of Thames Water's Self Lay Agreement will be issued (subject to receipt of the following mandatory information for each party in the Agreement)

- Company Registration Number
- Registered Office Address
- Contact Name / Address / Telephone No (Landline & mobile) / Email address
- Planning Permission number & Description
- Provisional works programme

If the Developer still wishes to follow the self lay option, the three copies need to be signed by ALL parties (including the Land Owner, Adjoining Owner and Surety where applicable) and form a contract between the Developer, SLO and Thames Water. Three original copies must be returned for signature by Thames Water. One copy will then be returned to the Developer, and one copy returned to the SLO.

Payment for water regulations inspections, service pipe retention and any additional sums stated (+ VAT where applicable) in the quotation must be made at this point. Infrastructure charges (0% VAT) may also be paid at this point, although deferring them will mean that they will be invoiced at the rate in force at the time of connection.

**Please note, a Surety or Retention Sum will be required for 12 months after the mains have been commissioned in order to cover the Defects Liability Period.**

#### 4.1.4 Authorisation to Commence Work

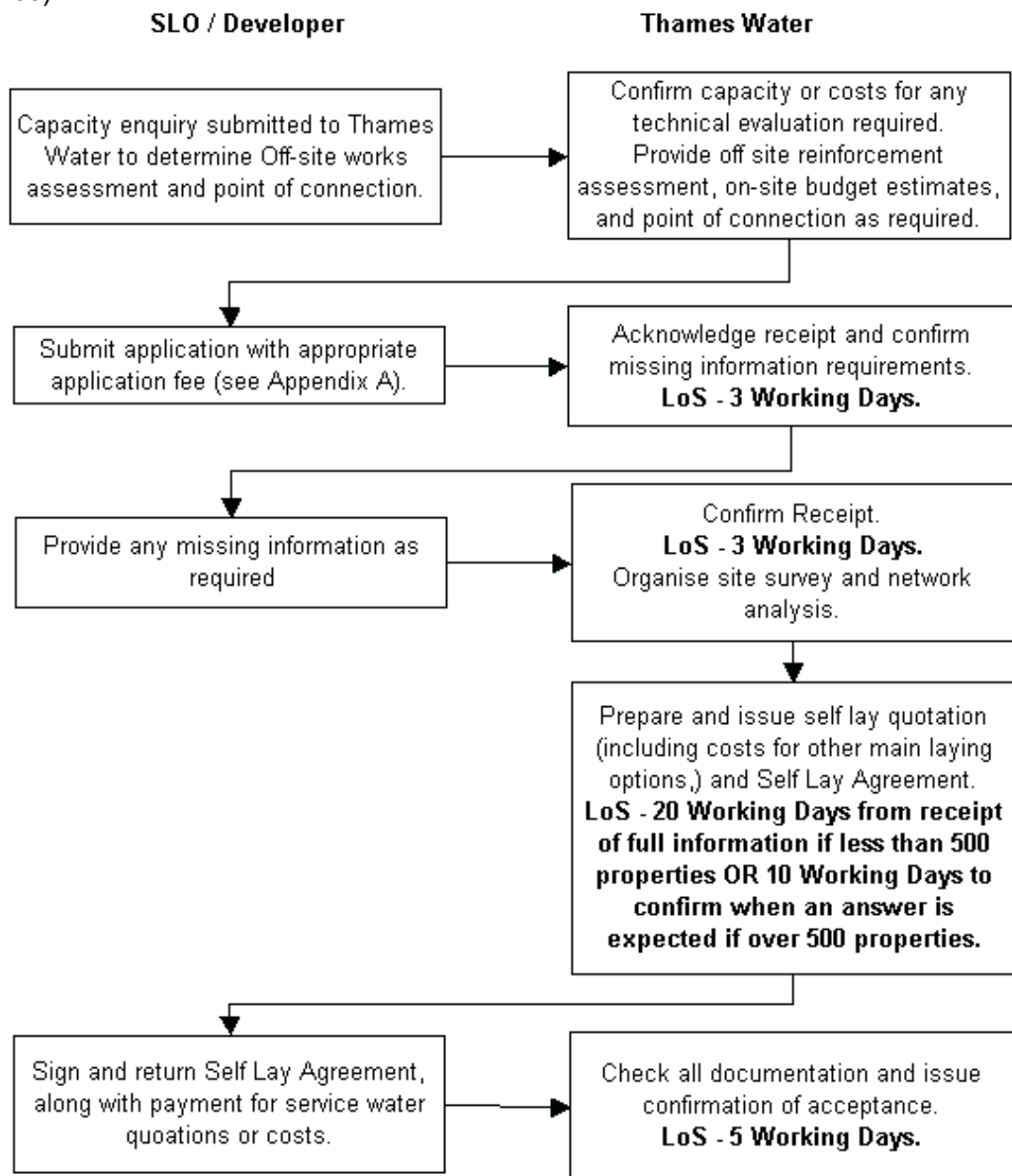
The paperwork must be complete before Thames Water will authorise commencement of works on site. This includes examination of the documentation such as, but not limited to,

- Soil report & chemical analysis (and any remediation report)
- Names of CDM Coordinator & principal contractor
- EUSR Skills Cards & Hygiene Cards (COLOUR scanned copy) for each operative involves directly with the water apparatus installation
- Contractors all-risk policy certificate
- Employers liability & public liability insurance
- Method statement
- Materials list (including the WIS and BS EN codes. See also Appendix C)

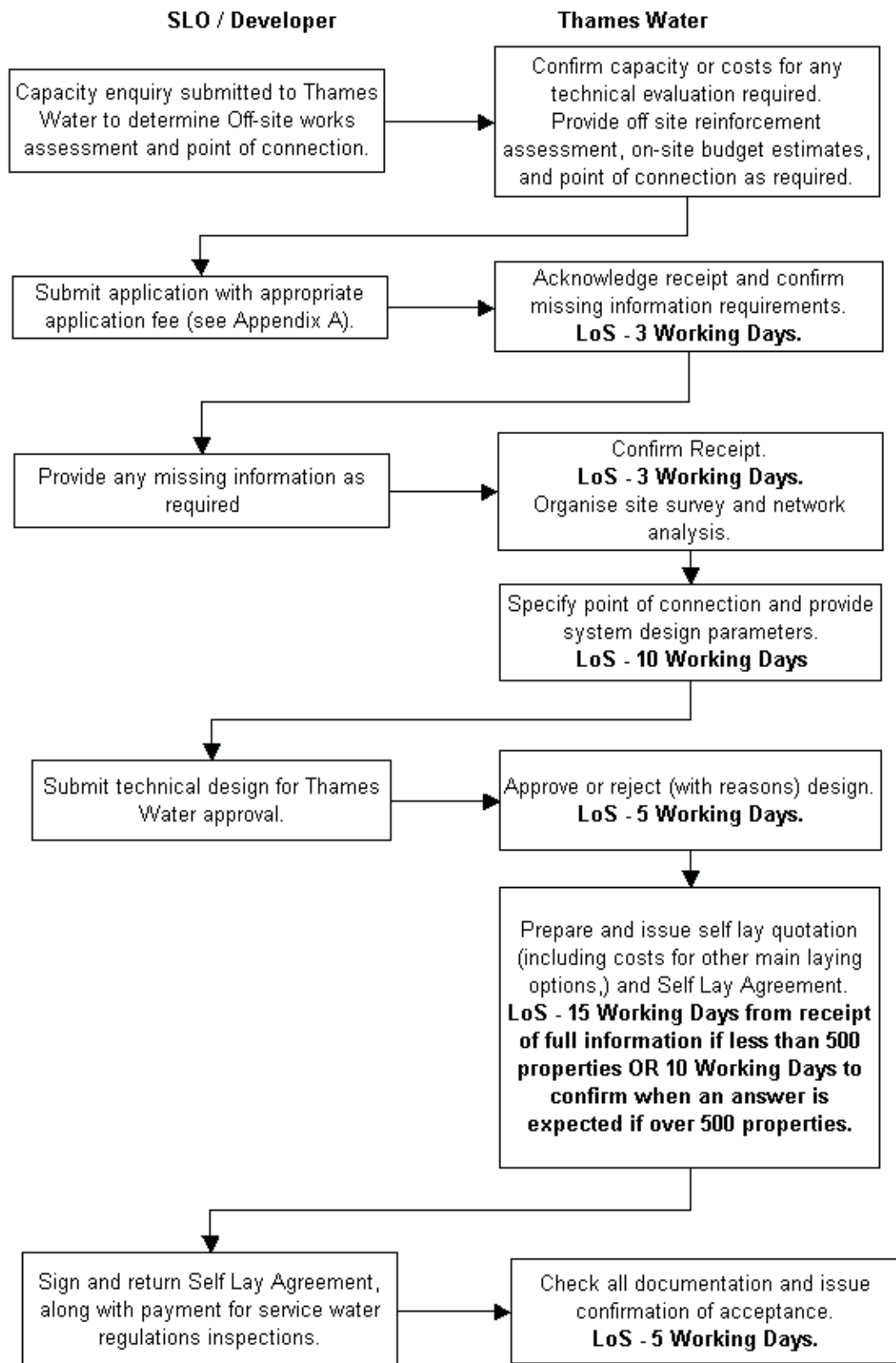
Thames Water aims to respond to the SLO within 5 working days if the paperwork is incomplete or unsatisfactory. It is anticipated that most of the paperwork will be submitted early in the application process, enabling adequate time for amendments if necessary.

**Please note that any water assets laid without authorisation to start from Thames Water will be classified as assets laid “at risk”, i.e. there is high probability that they will not be adopted and connected to the existing water network. In the event that Thames Water decides to adopt them, no asset payment will be made and the Developer will be liable for any rectification works.**

**Flowchart 4.1A** (Thames Water carries out design works. (nb LOS is our Level of Service))



**Flowchart 4.1B (SLO/Developer carries out design works)**



## 4.2 Self-lay Mains Installation

### 4.2.1 Pre-site Meeting

A Thames Water representative will be allocated to the development site. They will hold a pre-site meeting with the SLO / Developer to agree works programmes and start dates for both Mainlaying and services.

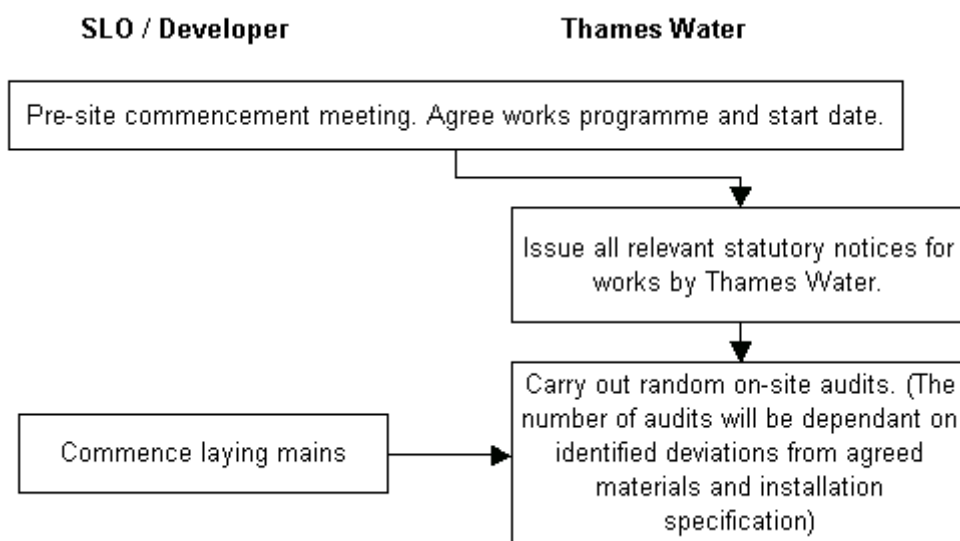
### 4.2.2 On-Site Audits

During the period of ground works, Thames Water will visit the site (sometimes randomly) to audit the work. If shortfalls in the quality of workmanship or materials are identified, Thames Water may exercise our right to refuse final connection to our existing network until remedial works are carried out to our satisfaction.

Where any shortfalls are identified, it may be necessary for us to increase the frequency of site audits over and above the level assumed in the original quotation. In these circumstances, the costs associated with additional visits will be charged back to the Self Lay Organisation or Developer either as part of the final asset payment calculation, or by a separate invoice.

If the SLO or operative is new to working on water apparatus within the Thames Water area, then additional audits may be carried out.

**Flowchart 4.2** (Mains Installation Process)



### 4.2.3 Variations

Thames Water recognises that unforeseen circumstances may arise occasionally on site requiring the position of the mains to be changed. Each variation must be authorised beforehand, and may be chargeable.

#### **4.2.4 Pressure Test\***

The pressure test must be witnessed by a Thames Water representative to ensure that all procedures have been correctly followed.

The authorised pressure test followed as standard for polyethylene pipes by Thames Water is called a "Type 2" test. This is a three point analysis test recording speed to pressure decay from the system test pressure.

Information for the testing for other pipe materials (including Fuchs Steel, Ductile Iron) is available on request.

Details of the pressure test to be used should appear in the site specific Method Statement.

A copy of the pressure test results and calculations must be sent to Thames Water.

\*Pressure testing is a service that can be purchased from Thames Water.

#### **4.2.5 Chlorination / Disinfection\***

This chlorination must be witnessed by a Thames Water representative to ensure that the procedure has been correctly followed.

The authorised chlorination method to be followed is :

1. Pipes and fittings should be stored and transported with the minimum risk of contamination. Pipes to remain capped until laid. If this is found not to be occurring the final connection may be delayed until Thames Water is satisfied the correct quality standards have been attained.
2. Swab (using a chlorinated swab) and flush x 2 volume of main prior to disinfection  
Inject main as near as possible within 5m of isolating valves
3. Dose complete section of main with 50ppm chloros/gas, leave for a minimum contact time of 7 hours, timed from when the required residual shows at downstream washout hydrant.

Further information on the authorised disinfection procedure is available on request.

Details of the chlorination test to be used should appear in the site specific Method Statement.

A copy of the chlorination details must be sent to Thames Water.

\*Disinfection is a service that can be purchased from Thames Water.

#### **4.2.6 Mains Flush & Sampling**

This element is non-contestable, and can only be carried out by a Thames Water representative. Adequate time must be given in advance so that these activities can be planned in. Short notice may result in a delay for this activity to be carried out.

#### **4.2.7 Final Connection & Mains Commissioning**

Thames Water aims to work with the SLO / Developer in making the final connection to our water network. However, we require “as-laid” drawings and adequate notice before this can be carried out.

The “as-laid” specification can be found in Section 3.4.7 “Data Capture / as Constructed Drawings” section of the Code of Practice.

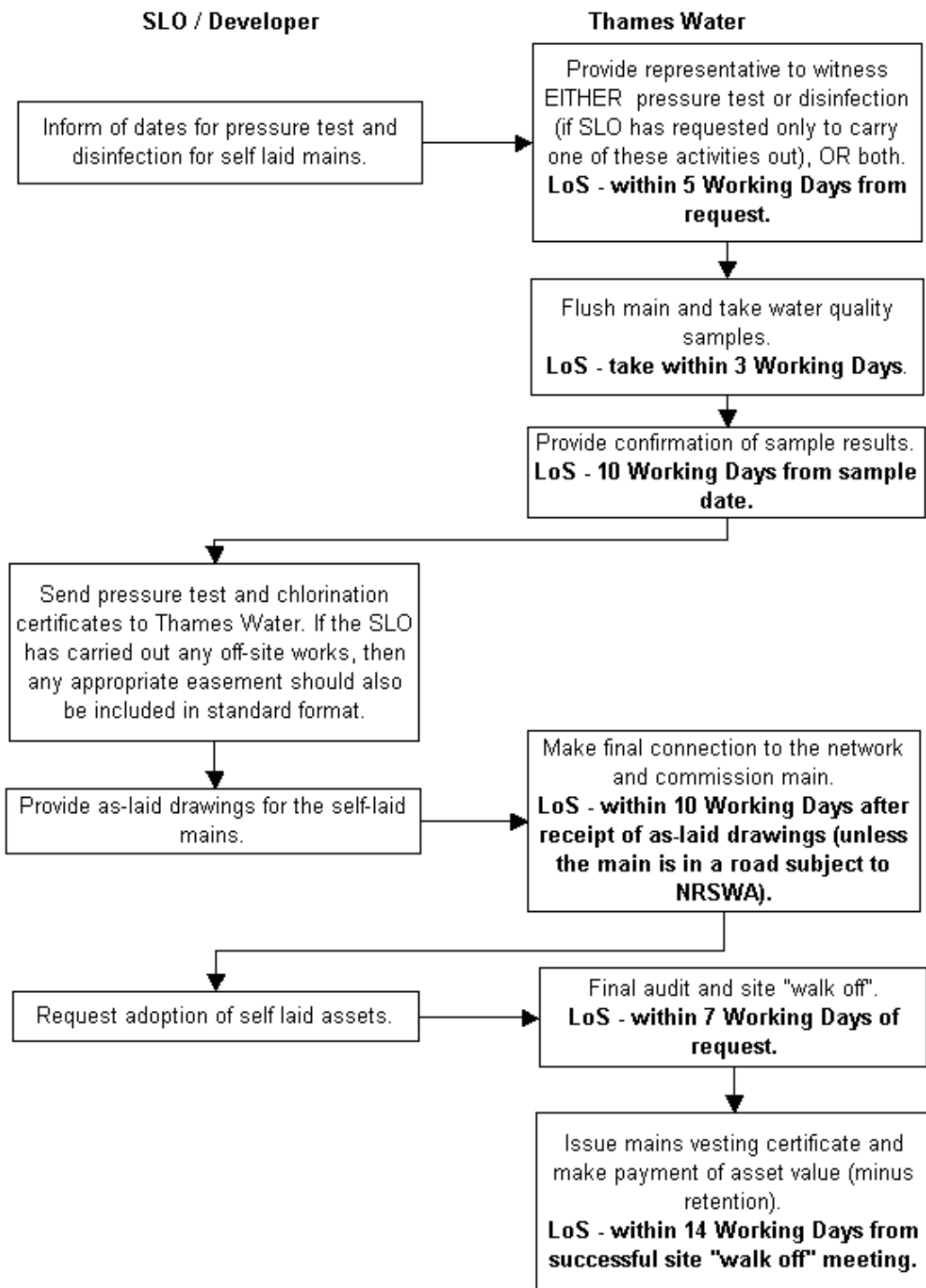
Please note that if the road in which the parent main is located falls under NRSWA or the Traffic Management Act, notices may have to be issued before this activity can be carried out.

#### **4.3 Mains Adoption**

Thames Water will either retain 10% of the asset payment value on adoption of the asset (Retention Sum), or require a Surety to the same value to be in place. This will be held for a period of 12 months and will be retained, and used where necessary, to cover the cost of any required repair or corrective work carried out by Thames Water on the adopted self-laid assets.

The mains are adopted at the time of commissioning. A Transfer Certificate will be issued confirming this providing all necessary documentation has been completed (including the as-laid drawings).

**Flowchart 4.3 (Mains Adoption Process)**



## 5.0 Service Connection Installation and Adoption

### 5.1 Water Regulations Inspections

Before any service connections can be connected to the new water main, The Developer and Thames Water are responsible for ensuring that the pipework passes the water regulations. This can be achieved by either

- Contacting Thames Water on 0845 850 2777 and requesting the inspections. (A service connection reference should already have been provided to you for this purpose), or
- Provide a valid TAPS5 form (or equivalent) for each plot. The originals should be sent to the water regulations team in Ashford, and a scanned copy emailed to the Self Lay Unit.

Please note that it takes approximately FIVE working days for an inspection by Thames Water, and FIVE working days to process a valid TAPS5 certificate.

Thames Water will inspect both the external and internal pipe work of the building to ensure compliance with the Water Regulations. Once these inspections have been passed, the Self Lay Organisation should inform Thames Water of the planned timing of connection to the new water main.

**The Self Lay Organisation must confirm with Thames Water that the water regulations inspections have been passed BEFORE planning in the water connections to the new water main. Any connection made prior to this confirmation will be deemed “illegal”, and appropriate action will be taken.**

### 5.2 Making the Connection

Where the SLO has elected for Thames Water to complete the water connections, a quotation number will have already been provided and paid for. Please telephone 0845 850 2777, stating the quotation number, to arrange the connections.

Where the SLO has elected to make the connections themselves, a minimum of 10 working days notice is required so that Thames Water has the opportunity to witness them being made.

### 5.3 Meters

The SLO must install water meters to Thames Water's specifications. Meters are normally placed in boundary boxes at the back edge of the footpath. Qualifications for this element of works would be either

- Registration on WIRS
- Unit 236 of NVQ Level 2 Public Utilities Distribution
- Water Network Construction Qualification

### **5.3.1 Meter sourcing\***

Meter Types must conform as specified in Appendix D, and Thames Water aim to have the meters on site at least 5 working days before they are required. Thames Water will aim to deliver meters for the site early on in the process.

\*Currently Thames Water will supply meters for 25mm & 32mm supplies free of charge. Thames Water can source the larger size meters (on request), although the SLO will be asked to pay the full cost for these before an order is made with the suppliers.

### **5.3.2 Meter Installation**

The SLO will install the meter themselves (unless otherwise agreed) at the time the connection is made and may be witnessed by a Thames Water representative.

A Thames Water metering sheet must be completed for each plot and may be prepared prior to the connection providing this is confirmed at the time of connection. The position of the location of the boundary box or meter pit must be clearly stated on the metering detail sheet that will be sent as part of the self lay documentation.

An example of this description would be;

'facing the house using the front door as the reference point: - In footpath 10m from front door 2m to the left.'

OFWAT has stipulated that the Self Lay Organisation must provide full postal details associated with each meter within 48 hours of the connection being made. If insufficient information is provided, Thames Water reserves the right to charge the cost for another water regulations inspection fee to collect the details and continued poor performance in providing this information may result in additional supervision and associated costs.

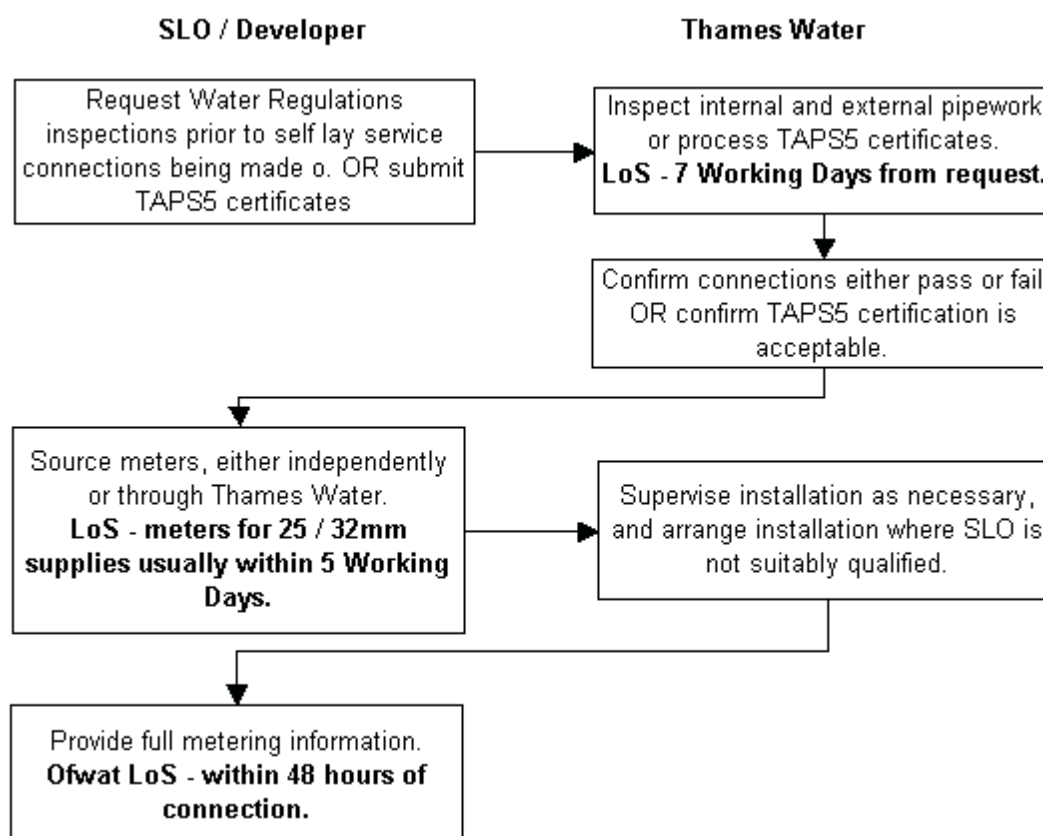
Meters for supplies over 32mm will be subject to an additional water regulations inspection to ensure that they are fitted correctly. However, where the SLO has none of the certification stated in 5.2, Thames Water will install meters for supplies of 50mm and above. Please note that Thames Water will charge for this service.

## **5.4 Adoption of Service Connections**

Service connections are adopted at the time of connection to the adopted main. However, Thames Water will hold service connection retention against failure of materials and workmanship for 12 months, commencing from adoption of the final service connection. In addition, any failure by the Self Lay Organisation to provide meter details in line with the OFWAT guidance will result in a reduced retention payment being made to the Self Lay Organisation at the end of the retention period. A Transfer Certificate for service connections will be issued once all the connections are made and the meter details and plot to postal information are received by Thames Water.

Flowchart 5.3 on the next page shows this process.

**Flowchart 5.3** (Adoption process for connections)



## 5.5 Self Lay – Services only\*

An Application and Application Fee + VAT must be submitted by the Developer (see Appendix A).

The application form must include proposed design including;

Plot numbers

Proposed connection points to the main

Design details of the connections (single, double manifold, four port, etc.)

Size of materials and proposed material selection

Methods of construction, including Risk Assessment and method Statements

Accreditation of proposed workforce

Thames Water will provide confirmation of the design, sizing of connections, and material selection. A quotation providing Infrastructure charges, inspection fees and required retention figures will be issued to the Developer.

**Please note, SLOs will only be permitted by Thames Water to lay under-pressure connections.**

\*Thames Water can provide design services with costs on application.

The SLO must pay the quotation and ensure Water Regulations are complied with prior to any connections taking place. Either the SLO or the developer must call off the Water Regulations against the quotation reference provided by Thames Water or provide TAPS5 certification against this quotation reference before any connections are made.

**The Self Lay Organisation must confirm with Thames Water that the water regulations inspections have been passed BEFORE planning in the water connections to the new water main. Any connection made prior to this confirmation will be deemed “illegal”, and appropriate action will be taken.**

Once the Water Regulations are completed the Developer must confirm the proposed connection date to Thames Water to allow Thames to inspect the final connection. Failure to provide this information may result in Thames insisting on re-excavation to inspect workmanship.

Meter details and Plot to Postal information must be provided to Thames in line with the WRC guidance or additional costs may be incurred in Thames collecting this information.

Once the connection is completed Thames Water will issue an invoice for the Infrastructure charges if these have not already been paid.

Connections to existing Thames Mains within adopted highways may be subject to additional risk assessments and sensitivity analysis. If existing customers are at risk of being affected, Thames Water may insist on completing these connections.

Transfer certificates and payments of retentions will be made in line with previous guidance in this document.

## **6.0 Expiry of Retention Period**

Once the defects period has expired the Developer and SLO arranges another site walk off with Thames Water to confirm that the water assets are still in an adoptable condition.

Where the walk off is successful, refund of the retention amounts held by Thames Water can be requested.

If any defects arise, Thames Water will usually issue a quotation for the work to the SLO, and once paid, rectify them. Following the rectification works another site walk off will take place and the water assets can be signed off and the retention amounts refunded.

A Liability Discharge Certificate will be issued separately for Mains and Service connections at this time, and the liability for the water assets will then fully pass from the SLO to Thames Water.

## **7.0 Dispute Handling**

Regular contact and flow of information between Thames Water and the SLO should ensure that disputes do not arise and problems are worked through to reach a satisfactory outcome.

However, Thames Water recognise that there may be disputes where neither side is able to agree on a solution, and the self-lay agreement outlines our approach to handling them.

Details of the OFWAT dispute handling powers can be found on their website [www.ofwat.gov.uk](http://www.ofwat.gov.uk).

# Appendix A - Costs

## Non-Contestable Costs :

### Application Fees

Fees for standard self lay schemes are detailed below and include for design of the scheme or approval of submitted designs, preparation of CAD drawings, one visit to site by Thames Water field engineer, legal and administration costs in preparing the Self Lay Agreements.

Two fees exist for self lay, depending on the route chosen by the Developer.

1. Laying of both Mains & Services (most common self lay option)
2. Laying of Services only

| Self Lay Application Fees | Cost                          |
|---------------------------|-------------------------------|
| Mains & Services          | £ 550.00 + VAT per phase      |
| Services Only             | £ 200 + VAT (max of 19 plots) |

**Please note that this fee is non-refundable.**

Thames reserves the right to charge for additional costs incurred if schemes are particularly large or if exceptional circumstances are applicable to any scheme.

### Drawing Amendment Fee

This applies when an alteration is required to the drawing only, and does not require the self lay costs to be altered from the original quotation, i.e. an authorized variation.

Drawing Amendment Fee = £ 200 + VAT

Any other types of amendments that have a financial impact, such as changing the site layout or adding service connections, will be charged the re-quotation fee of £ 350 + VAT

### Infrastructure charges

Where infrastructure charges apply, costs for the period until **31<sup>st</sup> March 2010** are as follows:

|   |      |
|---|------|
| <b>Infrastructure charges clean water</b> | £297 |
| <b>Infrastructure charges waste water</b> | £297 |

### **Quotation Charges**

|   |   |
|---|---|
| Off-site reinforcement  | Cost variable depending on work required                |
| Diversionary Work   | Cost variable depending on work required + VAT          |
| Final Connection Costs  | Cost variable depending on work required                |
| Flush & Sample Costs (up to 200mm internal diameter pipe size)          | £ 2.21 per linear metre (minimum charge £ 300)          |
| Flush & Sample Costs (201mm – 450mm internal pipe size)                 | £ 3.31 per linear metre (minimum charge £ 300)          |
| Flush & Sample Costs (over 451mm internal diameter mains size)          | £ 5.07 per linear metre (minimum charge £ 300)          |
| Preparation of initial quotation  | £ 550 .00 + VAT   |
| Re-quotation charge after quote issued (28 day validity period expired) | £ 350.00 + VAT  |
| Re-quotation charge after quote issued (design changes required)        | £ 350.00 + VAT  |
| Meters (to fit 25mm & 32mm supplies)                                    | NIL   |
| Internal meters (to fit 25mm & 32mm connections)                        | £ 48.00 + VAT   |
| Large meters (to fit 50mm connections and above)                        | Cost variable depending on size of meter required + VAT |

### **Site Audit Costs**

|  |  |
|--|--|
| 1 x set (including 1 x pre-site meeting, 1 x pressure test (7hrs), 1 x disinfection (4hrs), 5 additional site audits (4 hrs each), a post-site walkoff and a final defects walkoff (after 12 months). N.B. this is the absolute minimum number of audits for a small site. | £ 2,580.00 (43 hours)                      |
| Additional sets of site audits (for phased sites OR over 300m of mainlaying)   | £ 2,580.00 each                            |
| Additional site visits including a re-visit. This includes, but is not limited to e.g. witness pressure test / disinfection / service connections / where there is a problem on site – (invoiced directly to the SLO)  | £ 45 per hour                              |
| Water Regulations Charge – 1 <sup>st</sup> Visit OR TAPS5 processing   | £ 101.00 per single or manifold connection |
| Water Regulations Charge – re-visit charge OR TAPS5 re-processing  | £ 81 per single or manifold connection.    |

## Elements of Contestable Work that can be purchased from Thames Water :

### Pressure Test / Disinfection

|  |   |
|--|---|
| Pressure Test                                  | £ 201.60  |
| Disinfection (up to 200mm internal diameter)   | £ 1.97 per linear metre<br>(minimum charge £ 420) |
| Disinfection (201mm – 450mm internal diameter) | £ 3.27 per linear metre<br>(minimum charge £ 420) |
| Disinfection (over 451mm internal diameter)    | £ 4.59 per linear metre<br>(minimum charge £ 420) |

### Service Connections

The pricing structure below is for MDPE supplies up to 32mm in size

|                 | <b>Single Connection</b> | <b>2 port manifold</b> | <b>4 port manifold</b> | <b>6 port manifold</b> | <b>Additional metres</b> |
|-----------------|--------------------------|------------------------|------------------------|------------------------|--------------------------|
| <b>Unmade</b>   | £388                     | £599                   | £978                   | £1393                  | £34                      |
| <b>Footpath</b> | £659                     | £816                   | £1431                  | £1895                  | £116                     |
| <b>Road</b>     | £1031                    | £1276                  | £1893                  | £2341                  | £153                     |

For 25mm Barrier Pipe supplies, please add £ 7 per connection plus £ 5 per additional meter.

For 32mm Barrier Pipe supplies, please add £ 15 per connection plus £ 6 per additional meter.

## Appendix B

### SLO Assessment Criteria

Any SLO accredited under the Lloyds Register Water Industry Registration Scheme ([WIRS](#)) will usually, upon receipt of the application form, be permitted to lay water mains and service pipes on behalf of a Developer.

However, any company that is not yet WIRS accredited, can be assessed separately by Thames Water on a site by site basis. Any such company should submit a C.V. containing the following information :

















|           |   |
|-----------|---|
| <b>1.</b> | <b>Company Details &amp; History</b>  |
|           | Registered name, address and age of company   |
|           | Number of employees   |
|           | Details of parent company, subsidiaries, associates, joint ventures or partnerships   |
|           | Years of experience in water mains laying projects under current business   |
|           | Name of company and years of experience in water mains laying projects (if recently renamed, restructured or taken over)  |
|           | Turnover from mains laying work in each of the previous five years  |
|           | Bankruptcy history of parent, subsidiaries, associates, joint ventures or partnerships in previous ten years  |
|           | Credit reference  |
|           | Public Liability Insurance  |
| <b>2.</b> | <b>Water Mains Laying Experience (in Previous 5 Years)</b>  |
|           | Details of previous clients and client references   |
|           | Scope of projects   |
|           | Size of projects  |
|           | Percentage of work sub-contracted in each of previous five years  |
|           | Experience with various methods of mains laying and pipe materials  |
| <b>3.</b> | <b>Water Mains Laying Period Contract Experience (in Previous 5 Years)</b>  |
|           | Details of previous clients and client references   |
|           | Scope of projects   |
|           | Size of projects  |
|           | Success rate with re-appointment of period contracts  |
| <b>4.</b> | <b>Quality Assurance</b>  |
|           | Evidence of ISO 9000 accreditation  |
|           | Procedures for purchasing and controlling issue and use of materials  |
|           | Training policy and minimum staff qualifications  |
|           | Staff turnover rate   |
|           | Details of any previous or pending disputes relating to quality failures as a result of workmanship or other reasons  |
| <b>5.</b> | <b>Use of Sub-Contractors</b>   |
|           | Policy of use of sub-contractors  |
| <b>6.</b> | <b>Health &amp; Safety Performance</b>  |
|           | Standard Health & Safety Policy Statement   |
|           | Records of serious injuries and / or deaths during previous 5 year period RIDDOR  |
|           | Details of significant insurance claims made by third parties or employees during previous 5 year period  |
|           | Evidence that any staff have relevant medical assessment documentation to work on water mains laying work (i.e. EUSR skills cards / national hygiene cards), and dates of expiry. |

**Any SLO that fails to comply with the above and lays water assets without Thames Water’s authorisation will have laid the water assets “at risk”, i.e. Thames Water will be under no obligation to connect the pipework to the water network or adopt the assets.**

## Appendix C

### Standard Design & Material Specifications

Typical symbols used on the drawing include

|   |                               |   |   |
|---|-------------------------------|---|---|
|  | Existing main                 |  | Service connection                            |
|  | Main to be abandoned          |  | Service connection manifold with No. of ports |
|  | Proposed main                 |  | Thrust block                                  |
|  | Duct to be provided by client |  | Valve   |
|  | DMA meter                     |  | Air valve                                     |
|  | Washout                       |  | Blanking plate                                |
|  | Fire Hydrant                  |  | Closed valve                                  |
|  | Temporary washout             |  | Double spade valve                            |

The standard materials authorised for use in the Thames Water area vary according to the level of soil contamination.

The materials chosen will be examined as part of the self lay application to ensure that they comply to the latest standards in force at the time.

All pipes must be delivered and stored with end caps.

All MDPE fittings must be delivered and stored in plastic heat sealed bags.

|                                 |  |
|---------------------------------|--|
| Mains on non-contaminated sites | <p>Mains to be either :</p> <p>PE80 Standard MDPE at SDR 11 (Rating 12.5 bar – 10bar minimum)</p> <p>PE100 HPPE – Dark Blue at SDR 17, rating 10 bar.</p> <p><b>All pipes must be marked with the PN code and SDR on the pipe.</b></p>   |
| Mains on contaminated sites     | <p>The preferred material is spigot and socket steel with a triple layer of cement mortar lining with an external polymer coating. Similar materials will be considered on an individual basis.</p> <p>Where Ductile Iron is used it should be compliant to BSEN 545 1995 and WIS 4-41-01, be cement mortar lined, and the minimum external corrosion protection shall be zinc</p> |

|  |  |
|--|--|
|  | <p>coated with epoxy to BSEN 545, and all ductile pipes and fittings to be internally lined.</p> <p>Although Barrier Pipe 90mm and above may be considered, account should be taken that this material is not widely used on the Thames Water area, especially the non-standard sizes. It must comply to WIS 4-32-19.</p> <p><b>Please note that only fluid couplings shall be used for Barrier Pipe jointing, no butt fusion to be carried out.</b></p> |
| Services on non-contaminated sites                                   | Services up to and including 63mm to be MDPE (PE80)  |
| Services on contaminated sites                                       | Either "Protectaline" barrier pipe (preferred) or plastic coated underground copper (BSEB 1057 / 1996).  |
| Electrofusion couplings for mains                                    | To be HPPE (PE100) and can be black or blue in colour, all electrofusion fittings to incorporate fusion indicators.  |
| Electrofusion tapping saddles for MDPE / HPPE mains                  | To be self tapping and of under-clamp bottom loading design, all electrofusion fittings to incorporate fusion indicators.<br>No gunmetal tapping saddles to be used on MDPE / HPPE mains.  |
| Tapping saddles for ductile iron, cast iron, uPVC and asbestos mains | All tapping saddles to be made to BS2789 grade 500/7, and are capable of withstanding pressures of 16 bar.<br>Welded top tees should be used, compliant to WIS-4-22-02.  |
| Valves   | Compliant with BSEN1563, internal and external protection to be blue fusion bonded epoxy powder coating.<br><b>All valves to be right hand (clockwise) close only.</b>   |
| Fire Hydrants  | Compliant with BS750:1984. All hydrants to have copper alloy (gunmetal) outlet. The hydrant shall have an automatic frost valve, no water shall escape during operation and the body shall fully drain afterwards.<br><b>All hydrants to be of a fixed jumper design.</b>  |
| Chamber sections   | Chamber sections to be rectangular and made of either polymer or pre-cast concrete.  |
| Chamber covers   | All covers shall comply to BSEN124 / BS5834. All covers shall be rectangular, and shall be marked SV, W, FH and AV as appropriate. Covers shall be coated with bituminous coating to BSEN124 and BS5834.   |
| Boundary Boxes for non-contaminated sites                            | Single, double and multi port manifolds can be used. The boundary box (water proof type) must be able to incorporate a manifold meter with 1.5" tread, stop tab and non-return valve. All boundary boxes must have height and  |

|                |  |
|----------------|--|
|                | slope adjustment capabilities.   |
| Boundary Boxes | Where boundary boxes (waterproof type) are used on contaminated sites they must comply with WIS-4-37-01, be watertight and shall have gunmetal connection fittings that are able to accept either Protectaline or plastic coated copper pipes. |
| Joints         | These must be wrapped with either canusa shrink wrap or a high density bitumen tape. Petroleum jelly / denso tapes are not acceptable.   |

# Appendix D

## Metering

### Meter Specification

Source meters should be

- Of a Class “D”, approximately sized and passes the water regulations.
- If the meter is to serve a large commercial customer and is a Thames Water approved manufacturer, i.e. Actaris (previously Schlumberger), Elster (previously ABB Kent), and Invensys (Sensus & Socam).

### Surveying and Fitting External Meters in Pits

- **Concentric Meters – V120 & V210 (MSM’s)**

These can be fitted in either a boundary box, a pit with an in-line manifold, or a pit with a purpose made manifold.

- **Pit Sizes**

Boundary Boxes are typically used to install up to 6 meters on pipework entering a property at the same location.

A 600 x 450 pit for installations up to 6 meters if a boundary box cannot be used.

A 900 x 600 pit for installations up to 9 meters.

- **External Concentric Meter Fits in Boundary Boxes**

The meter must be easily accessible for exchange, reading and maintenance. It must also be 300mm - 600mm below ground level.

Boundary box installations must not sit on any other utilities pipes or cables, or any drain or duct. The insulation plug must be fitted.

Boundary boxes are of Class “B” rated and may be used in areas subject to occasional traffic loading, but a wise precaution is to install these out of the line of traffic wheels, i.e. in the centre of the drive.

An earth bonding strap in compliance with BS7671 must be fitted to all installations except where the service pipe is MDPE, UPVC, HDPE or any plastic service pipe.

The customer should always be handed or delivered through their letterbox the earthing leaflet.

Excessive use of elbows/bends is not permitted.

When re-instating, at least 50mm of sand must be covering the service pipe. The rest of the re-instatement must be "Type 1" compacted as prescribed in the HAUC specification.

The boundary boxes polystyrene insulation plug must be in place to counter the effects of frost.

The square re-instatement ring must be used when fitting "Atplas" boundary boxes.

- **In-line meters**

| <b>Meter Size</b> | <b>Recommended size Pit</b> |
|-------------------|-----------------------------|
| 20mm              | <b>Stanton Mini Pit</b>     |
| 25mm              | 600mm x 450mm               |
| 30mm              | 600mm x 450mm               |
| 40mm              | 600mm x 450mm               |
| 50mm              | 900mm x 600mm               |
| 65mm              | 900mm x 600mm               |
| 80mm              | 900mm x 600mm               |
| 100mm             | 900mm x 600mm               |
| 150mm             | 900mm x 600mm               |
| 200mm             | 900mm x 600mm               |
| 250mm             | 900mm x 600mm               |

Where single meters are located in areas subject to traffic loading, a Stanton Mini Pit, or equivalent, is recommended.

If the footway cannot be excavated – and a meter must be fitted, a pit needs to be dug on the customers' property, such as within the drive or garden. The signature of the Landlord or / customer (whoever pays the bill) must be gained before the work is carried out.

All pits must have a base, this can be concrete, paving slabs or a purpose made base. All bases must be square and level. 900mm x 600mm pits must have sump holes.

The meter must be in the centre line of the pit where practical. Where this is not possible sufficient access must be allowed for maintenance and replacement.

Meters must be staggered, where more than one meter is fitted in any meter pit.

Meter pits must be between 300mm and 750mm deep.

Meter pits should be fitted in the footpath and be positioned so as to enable safe and easy access to read the meter.

It must be possible to read the meter from the top of the chamber at ground level.

The reading face of the meter must be upward facing.

Meters fitted in pits must be supported on the underside by clips or "Type 1" gravel from the base of the pit.

A stop-valve to BS5433 must be fitted within 500mm both upstream and downstream of the meter.

Drain valves must not be fitted below ground level.

Pits must be "back-filled" with "Type 1" and compacted as prescribed - in the HAUC specification.

Any bends/elbows should be fitted outside of the pit wherever possible.

An earth-bonding strap in compliance with BS7671 must be fitted to all installations except where the service pipe is MDPE, UPVC, HDPE or any plastic service pipe.

An earth-bonding strap shall be provided around external meter installations where plastic pipe has been inserted as part of the installation into an existing metallic pipe.

The customer should always be handed or delivered through their letterbox the earthing leaflet that explains the actions that we have taken with regards to earth bonding and what is required of them.

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