

# Self-Lay New Mains / Services

## Water Quality Requirements

It's part of our  
Blueprint for Yorkshire



The Principles of Water Supply Hygiene state the following:

*'Where distribution networks are designed and installed by self-lay organisations (SLPs) water undertakers should ensure that these activities are carried out in accordance with the Code of Practice for the self-laying of water mains and services and relevant British Standards. SLPs should be members of the Water Industry Registration Scheme operated by Lloyds on behalf of Water UK and the Water Industry'.*

# Introduction

Designers, constructors, and operators of water networks should be alert to all the possible opportunities for contamination to enter supplies, and take all reasonable precautions to minimise the risk. They should equally avoid circumstances where water in the mains can deteriorate through stagnation or long contact with particular materials e.g. cement mortar pipe lining. The design and specification of the network can itself significantly reduce most of these risks.

Laying new mains and services requires personnel to hold registration under the National Water Hygiene Scheme. Ideally, relevant personnel should have current certification to at least NVQ level 2 in Network Construction Operations.

# Procedure

As part of the installation process for any new main or service connection, the SLP or Developer should adopt the following good practice:

- Pipes and fittings must be transported and carefully stored on site, off the ground, to avoid entry of dirt or vermin. All pipes must be supplied with close-fitting end caps where feasible and these must remain in place until the pipe is laid. All pipes and fittings (and in particular plastic types) must be kept clear of fuel oils, and any materials so contaminated should be discarded.
- All fittings and pipe ends must be sprayed with a solution of 1000 mg/l free available chlorine as they are laid.
- Care must be taken to prevent water, subsoil or other material entering a pipeline under construction. It must not be assumed that such material will be flushed out on commissioning. Additional cleaning measures (e.g.: swabbing) and inspection techniques (e.g.: CCTV) must be considered prior to commissioning on larger diameter mains.
- Swabs may be useful for clearing a new main of any dirt or debris that has entered and the use of a chlorinated swab may be appropriate if any form of contamination is suspected. However, a chlorinated swab is only an intermediate measure and is not a substitute for disinfection.

Following installation and prior to any connection into the Yorkshire Water distribution network the SLP or Developer should ensure that all New Mains, Service Connections and Service Pipes are disinfected in accordance with the code of good practice detailed in the Principles of Water Supply Hygiene Technical Guidance Note 2, as follows:

## New Mains, Service Connections and Service Pipes > 63mm OD and > 6m in length:

- After installation and before use, water mains must be flushed until visibly clear. They must be disinfected by charging with water containing sufficient free chlorine to ensure that a concentration of at least 20 mg/l has been maintained throughout the entire pipe length over a period of standing for at least 16 hours. The time is important to ensure adequate dispersion and contact of the chlorine with the water and the entire internal surface of the main and fittings. The main must then be flushed and left charged for a minimum of 16 hours, and sampled at appropriate points, including the downstream end. The number and location of samples required must be sufficient to ensure the suitability for supply of the entire length of main.
- Alternative disinfection methods can be considered that are equivalent to 20 mg/l for 16 hours (for example, spraying the full internal length with solution containing 1000 mg/l chlorine).
- No New Main, Service Connection or Service Pipe shall be brought into service until the contents of the main have been tested successfully for bacteriological, chemical, taste, odour and appearance. The SLP or Developer should ensure that the appropriate samples are taken and analysed in a suitable UKAS accredited analytical laboratory.

Chlorination certificates and certificates of analysis from the UKAS accredited laboratory should be emailed to: **PWINFO@yorkshirewater.co.uk**

The chlorination certificates and certificates of analysis must be assessed by Yorkshire Water's Information and Regulation Team. No New Main, shall be connected to the Yorkshire Water Network until approval has been granted by the Information and Regulation Team.

The criteria for passing new mains samples are as follows:

Parameter	Unit	Standard
pH	pH Units	6.5 - 9.5
Colour	Hazen	10
Turbidity	NTU	2.0
Coliforms	No. per 100 ml	0
<i>E. coli</i>	No. per 100 ml	0
NLF Bacteria	No. per 100 ml	20
Taste	Dilution No.	0
Odour	Dilution No.	0

If the New Main is not brought into service within 14 days of a satisfactory sample having been taken, the main should be flushed with mains water and re-sampled. If contamination is suspected then the main should be chlorinated and re-sampled.

## **Service Connections and Service Pipes 15mm - 50mm OD:**

All new service connections must, as a minimum, be pressure tested and flushed with mains water before use.

## **Service Connections and Service Pipes > 50mm OD:**

In addition, service pipes above 50mm in external diameter require disinfection, although water quality samples will not normally be required. Proof of disinfection must be provided and approved by Yorkshire Water's Information and Regulation team prior to connection to the YW distribution network.

Chlorination certificates should be emailed to: **PWINFO@yorkshirewater.co.uk**

No connection to the Yorkshire Water Network will be made until approval has been granted by the Information and Regulation Team.

If the disinfected Service Connection or Service Pipe is not commissioned and brought into supply within 30 days of completing disinfection, the disinfection process should be repeated prior to commissioning as it is considered that deterioration of water quality may have occurred within this period.

## **Service Connections and Service Pipes > 63mm OD:**

Further to above, service pipes 63mm and above in external diameter should be treated as a New Main and as such will require disinfection, and water quality samples, under the arrangements for New Mains stated above.

**The party that will undertake the connection of the New Main or Service must not do so until the SLP or Developer has provided proof that the correct disinfection procedure has been followed and satisfactory samples, where required, have been taken.**

**Documentation that details the results of samples taken and a formal approval from the Information and Regulation team that confirms that the results or samples meet the acceptance criteria is also required.**

**Yorkshire Water reserves the right, should the need arise, to contact directly any analytical service provider or chlorination company used by a developer or SLP in order to verify any documentation provided to the Information and Regulation team prior to any approval being granted for connection to the YW distribution network.**



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