

# Disinfection of Services

## 1. Introduction

To ensure we safeguard the highest standards of water quality it is a requirement for all service pipes, categorised below to be disinfected prior to their connection to our network.

### When is disinfection required?

- Pipework greater than 50mm outside diameter (OD)
- Pipework between 32mm OD and 50mm OD that is longer than 100m in length
- Any pipework that has been subject to ingress (such as visible contamination, flood water, sewerage etc) during the laying of the pipework. Pipework should be left capped to minimise the risk of this.

## 2. Procedures

The table below provides a description of each procedure. **Onsite tests should be conducted by a competent person using calibrated equipment.**

<b>Swabbing</b>	<p>Pipework should be clear from dirt and debris prior to chlorinated swabs being pushed through the pipework. Pipework should be fully charged to ensure all internal surfaces of the pipework are wet Swab to be pushed through the entire length of pipe. Upon exit they are to be checked for soiling and if found to be soiled additional swabs should be used until clean.</p> <p>(Swabbing is not appropriate for pipework less than 50mm OD)</p>
<b>Disinfection</b>	<p>Pipework should be injected with a chlorine solution with a concentration between 50mg/l and 60mg/l. Contact time should be a minimum of 30 mins. Pipework should be fully dechlorinated and then flushed 3x volume or until onsite turbidity below 1NTU.</p> <p>(If chlorine concentration drops more than 10% between injection and dechlorination disinfection should be redone).</p>
<b>Sampling</b>	<p>Water should be left to stand for 30 minutes prior to sampling. A sample should be taken from a clean sample tap at the end of the pipe. A pre-prepared bottle specifically designed for sample should be used.</p> <p>Diameter and length of pipe, chlorine residuals (free and total) should be recorded at the time of sampling, to a value of at least one decimal place.</p> <p>An onsite taste and odour test should also be conducted, and the results should also be recorded.</p> <p><i>Please see section 4 for information regarding the bacteriological testing</i></p>
<b>Pressure Testing</b>	<p>Pressure testing should be carried out on pipework above 50mm OD where jointing has been used. All HPPE/ MDPE pipes should be pressure tested to 1.5 times their pressure rating or 10 bar (whichever is greater). i.e., Pipes rated to 10 bar should be tested to 15 bar.</p>

In addition to the procedures defined above, this testing should be completed in accordance with BS-6700:2006 and the Water Supply (Water Fittings) Regulations 1999.

**Important note** - Please consider the source of water that is being used during testing and disinfection. The water should be taken from an adequate, mains fed system from our Affinity Water Network. Should you require the use of a tanker, please contact your Affinity Water representative to discuss the requirements in this instance, as using water from storage may obscure the results, resulting in non-acceptance and the need for further disinfection to take place.

### 3. Guideline Connection Process

Day Number	Action
	You complete the laying of the supply pipe, make payment and make the request the connection(s) to be made. <b>Please refer to our “5 steps to connection” document for further information on this process.</b>
0	When your request is accepted, we will plan & complete the laying of your service pipe. We will arrange for our pipe to be disinfected. <b>Please note at this stage we will not make the final connection to your premises</b>
1-8	You arrange for the disinfection of the supply pipe to take place, as outlined in this document. Once complete you submit the samples to your chosen UKAS accredited laboratory without delay.
9	As soon as you receive your sample analysis results back from the lab you forward these to us for review (see <i>Table 5</i> for required information).
10-12	We will review results and, if acceptable authorise the final connection. At this stage we will contact you to arrange a date
12-30	Affinity Water will make the final connection
31	<b>If the final connection is not completed within 30 days of the initial disinfection, the disinfection process may need to be completed again.</b>

Affinity Water cannot accept responsibility for any delayed connections that result due to failure to provide the required information, within the timescales specified above. Should you need assistance please contact a member of the team on 0345 357 2428.

### 4. Bacteriological Testing & Analysis



The samples collected from site should be analysed and reported for total coliforms, *e-coli*, 2-day and 3-day plate count (otherwise known as TVC) at 37 deg and 22 deg respectively along with other physical analysis. Laboratory tests must be carried out by a UKAS accredited lab, to a UKAS accredited method.

### 5. Information Required by Affinity Water

The below table is a list of the minimum information we require from you to progress your service connection. It is important we receive all this information as soon as it is available, in order to give us time to confirm the results & minimise delay on your final connection. **Please ensure laboratory reports & test certificates are sent in, and not simply a certificate of compliance.**

These samples provide reassurances that the highest standards of water quality can be upheld following the final connection. As such, Affinity Water reserves the right to request additional information, disinfection, testing or samples prior to completing the final connection.

Laboratory testing		Onsite (at time of sampling)	
Total Coliforms	Zero*	Odour	
E. Coli	Zero*	Taste	
2-day plate count (37deg C)	<no change>* significant	Free Chlorine	
3-day plate count (22deg C)	<no change>* significant	Total Chlorine	
Turbidity	< 1 NTU*	Turbidity	< 1 NTU*
pH			
Electrical Conductivity			

Table 5 – required information.  
\*acceptable parameter

If results are not satisfactory, we will provide detailed reasoning and support to ensure the next sample has the best chance of being approved.

**Following connection to the network, all services should be adequately flushed prior to use**

