DISINFECTION OF PIPEWORK FOR INDIVIDUAL WATER SERVICES

This document is intended for guidance for individual water services only - seek separate guidance for mains pipework.

Introduction

It may be necessary to disinfect the pipe work depending upon the size, location and installation conditions. Under normal considerations for a new domestic house, Essex & Suffolk Water would not usually require the service pipe or any internal plumbing to be disinfected.

Essex & Suffolk Water will however require the disinfection of new or existing supply pipes when:

- The new connection is to an existing premise domestic or otherwise that has been originally connected to a non-Essex & Suffolk Water supply (e.g., springs, borehole, or other source).
- The new water pipe is greater than 50mm external diameter.
- The new water pipe is 50m or more in length.
- The water pipework has not been in regular use for some time (installed and left or just isolated for longer than 30 days).
- Pressure tested, due to the potential that contamination has entered the pipe during installation.

Industry standards

The method of disinfection should be in accordance with BS8558 (2015), (PD855468: 2015), the following is a typical method acceptable to Essex & Suffolk Water.

Typical method of disinfection (Sodium Hypochlorite)

Alternative disinfection agents can be used providing the same levels of effectiveness can be achieved and the disinfectant has been agreed by Essex & Suffolk Water.

- The pipework being disinfected should be completely isolated from the incoming water main.
- The pipework should be flushed out to waste until the water is clear and free of air.
- Introduce a disinfecting agent, typically to 50ppm.
- When fully charged leave to stand for a minimum period of one hour.
- At the end of the disinfection period determine the concentration of the disinfectant. If the concentration is satisfactory and has not dropped below 30ppm, the system should be drained disposing the water safely, neutralising may be required if discharging to drain or sewer.
- If the concentration is not satisfactory, the disinfection procedure must be repeated until a satisfactory result is obtained.
- The pipework should then be flushed out with drinking water until the background of the chlorine levels are achieved to that of wholesome water.

- After flushing, seal the pipework and allow to stand for 24 hours.
- **Draw off samples for bacteriological analysis**. Samples should be sufficient in numbers to be fully representative of the distribution system (seek advice – typically one sample every 200m or for each take off).
- The pipe must then remain mechanically sealed (cap ends) until the connection is made to Essex & Suffolk Water's main.

Samples and certification

Samples must be analysed for bacteriological satisfaction, by an **UKAS Accredited Laboratory** and submitted on an official test certificate. A list of accredited laboratories can be obtained at www.ukas.com.

Note: Samples should be sufficient in numbers to be fully representative of the distribution system (seek advice – typically one sample every 200m of pipework or one for each take off branch).

On site free and total chlorine residuals (to two decimal places) must be measured at the same time the water sample is taken. The results should be reported together with the analytical test report. (This measurement is in addition to any made during pipe Chlorination and are related directly to the water samples taken for analysis.)

Free Chlorine measured in mg/l (example – 0.23mg/l)
Total Chlorine measured in mg/l (example – 0.27mg/l)

Bacteriological analysis requires the results should not exceed the following limits:

Total coliforms 0 per 100ml
E Coli (Escherichia or Faecal Coliforms) 0 per 100ml

Test results are to be submitted to Essex and Suffolk Water for approval. If the test results fail it will be necessary to repeat the chlorination procedure and re-sample.

THE NEW SUPPLY CONNECTION CAN ONLY BE MADE AFTER APPROVAL BY ESSEX & SUFFOLK WATER.

Note: The bacteriological sample results only remain valid for 30 days, after which the pipework will have to be re-tested. If the results from these samples are unsatisfactory the pipework must then be re-chlorinated and re-sampled.