

Water Supply (Water Fittings) Regulations 1999

Guidance Note 4

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Disinfection of Water Pipework To New Water Service Pipework

It **MAY** be necessary to disinfect the pipe work depending upon the size, location, installation conditions, etc. Under normal considerations for a new domestic house Northumbrian Water would **NOT** usually require the service pipe or any internal plumbing to be disinfected.

Northumbrian 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-Northumbrian Water supply (e.g. springs, borehole or other source). Refer to Guidance Note 5.
- The new water pipe is of 50mm internal diameter or greater.
- The new water pipe is 50 metres or more in length.
- The water pipework has not been in regular use for some time (Installed and left or just isolated for a longer than 30 days).
- If suspected that contamination has entered the pipe during installation or has been installed in such a manner as to give concern by virtue of its location.

Typical Method of Disinfection (Sodium Hypochlorite)

Alternative disinfection agents can be used providing the same levels of effectiveness can be obtained and the disinfectant has been agreed by Northumbrian 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 50 ppm.
- When fully charged leave to stand for a minimum period of 1 hour.
- At the end of the disinfection period determine the concentration of the disinfectant. If the concentration is satisfactory and has not dropped below 45ppm - 10% drop, 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, sampling for bacteriological analysis should take place, 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 sealed until the connection is made to Northumbrian Water's main.

Samples must be analysed by an **UKAS Accredited Laboratory** and analysed for bacteriological satisfaction. A list of accredited laboratories can be obtained at www.ukas.com **The new supply connection can only be made after approval by Northumbrian Water Ltd.**

Bacteriological results should not exceed:-

A	Total coliforms	0 per 100 ml
B	E Coli (Escherichia or Faecal Coliforms)	0 per 100 ml
C	Colony counts @ 37° Celsius	50 per ml
D	Colony counts @ 22° Celsius	300 per ml

In addition free and total residuals must be measured as part of the sample and the results included on the test report.

E	Free Chlorine	mg/l
F	Total Chlorine	mg/l

If samples are clear the test results should be submitted to Northumbrian Water (**ON THE ACCREDITED LABORATORY'S TEST CERTIFICATE**). If the test results fail it will be necessary to repeat the chlorination procedure and re-sample.

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.