

Disinfection Procedure for New Mains Pipes

In order to safeguard water quality and public health, it is a requirement that all private supply pipes and private mains falling are disinfected and tested as detailed below, before a connection is allowed to the existing public water supply.

Procedure description

Flushing/swabbing

All debris and dirt must be removed from the pipe. Flushing at least two pipe volumes to waste, at sufficient flow to lift all sediment, can do this. Heavy sediment/dirt may require mechanical cleaning by forcing chlorinated swabs through the pipe before flushing.

Disinfection

The pipe, of which the length and diameter needs to be recorded, should be dosed to 50 mg/L of free chlorine and then held for one hour. The residual at the end of this period should be at least 45 mg/L. The pipe should then be flushed clear of all highly chlorinated water until background levels of chlorine are observed. All free and total chlorine levels should be recorded throughout the chlorination and flushing. The chlorinated pipe must be capped at both ends after testing. The date of disinfection must be recorded with the Bacteriological Test results (see below). If a disinfectant other than chlorine is used it must be listed in the Drinking Water Inspectorates List of Approved Products and Processes. Disinfection will be in accordance with the manufacturer's specifications and flushing must ensure removal of the disinfecting chemical.

A bacteriological test should be performed from a clean sample point at the end of the pipe. A pre-prepared sample bottle, specifically designed for this purpose, must be used. Chlorine residuals (free and total) must be recorded at the time of sampling and should be numeric mg/L values, to at least one decimal place. The use of 'greater than' or 'less than' approximations will not be accepted. The bacteriological sample should be analysed and reported for total coliforms per 100 mL, total E. coli per 100 mL, 48-hour plate count (also known as total viable count or TVC) at 37°C and 72-hour plate count at 22°C. The analysis should be carried out at a laboratory accredited for these tests. Unsatisfactory results for any of these tests will need the installation to be flushed, re-disinfected and further samples taken.

It is important to be aware of the restrictions faced when undergoing disinfecting and testing procedures. Once a pipe has had a bacteriological sample taken (which subsequently passes and is approved by the Water Authority) it must be either connected to the mains system, or flushed, within seven days. If only flushing is carried out, the pipe must then be connected in a further seven days or it must be re-chlorinated, sampled and the time period restarts.

For this reason it is essential that Developers liaise with the Water Authority to plan these processes, otherwise the connection may not be available before the sample results expire. The Water Authority will not connect a supply pipe until they have approved all test results.