

NEW PIPEWORK AND ASSOCIATED COMPONENTS PRE AND POST INSTALLATION CLEANING AND DISINFECTION PROCESS SPECIFICATION AND PRO-FORMA:

Legionellosis Management And Control PPM Program	
Task:	New pipework and associated components pre and post installation cleaning and Disinfection process
If the Maintenance Staff or appointed contractor cannot, at any stage, comply with any part of this Specification, then an alternative Specification shall be agreed which, both; meets the requirements of current legislation and the needs of the Site.	

SMALL SECTIONS - NEW PIPEWORK (LESS THAN 2 METRES) AND ASSOCIATED COMPONENTS PRE-INSTALLATION CLEANING AND DISINFECTION

- i. Thoroughly clean all new pipework to be installed.
- ii. Using a suitable vessel, safely prepare a disinfectant solution of sodium hypochlorite of 100mg/l (ppm) free chlorine.
- iii. Safely immerse all cleaned pipework and associated components in the disinfectant solution and leave to soak for a minimum of 30 minutes.
- iv. Remove pipework and associated components from disinfectant solution and rinse with fresh clean water for a minute and allow them to drip dry in a clean, cool dry place and install within 12 hours of disinfection.

MEDIUM SECTIONS - NEW PIPEWORK (MORE THAN 2 METRES) AND ASSOCIATED COMPONENTS POST-INSTALLATION CLEANING AND DISINFECTION

NOTE: All components must be cleaned and disinfected as described above, prior to installation.

- i. Ensure than new pipework is isolated from existing pipework with isolation valves and fitted with injection points at either end. Isolation valves must be locked-off until such time that the microbiological results indicate that the system is safe to use.
- ii. Using a suitable vessel, safely prepare a disinfectant solution of sodium hypochlorite of 50mg/l (ppm) free chlorine.
- iii. Using a suitable pump, inject disinfectant solution in the new pipework and allow to circulate for at least 1 hour. Measure level of free chlorine after 1 hour and ensure that it is at least 30 mg/l (ppm). If disinfectant level is below 30 mg/l (ppm) after 1 hour, repeat this step.
- iv. Thoroughly flush the new pipework with clean mains water until tests indicate that the residual level of free chlorine is no greater than 0.5 mg/l (ppm), or that present in the mains water supply.
- v. Using a suitable sterile containers, collect water samples and submits for biological analysis. The analysis shall measure the presence of contamination by general bacteria (TVCC).

NOTE: Samples to be collected no earlier than 48 hours following **disinfection**.

LARGE SECTIONS - NEW PIPEWORK (LARGE SECTIONS OF PIPEWORK AND NEW COMPLETE INSTALLATIONS) AND ASSOCIATED COMPONENTS POST-INSTALLATION CLEANING AND DISINFECTION

NOTE: All components must be cleaned and disinfected as described above, prior to installation.

- i. If CWS storage vessels are associated with the system, they shall be cleaned and disinfected before the new pipework is disinfected.
- ii. Any water treatment equipment shall be disconnected from the system. The pH of the water shall be measured and must be between 5.5 and 9.0 before chlorinating solution is introduced. If pH is found to be below 5.5 the system shall be drained, flushed and refilled with fresh water.
- iii. Treated water must then be used to charge the distribution system. If a storage vessel is associated with the system, the disinfectant solution must be prepared in and supplied by this vessel. If a storage vessel is not associated with the system, a portable vessel must be used to deliver the disinfectant solution as described above.
- iv. Sampling points representative of the system must be tested to ensure 50 mg/l (ppm) free chlorine throughout the system to start disinfection. The whole system must be allowed to stand charged for a minimum period of 1 hour; a representative number of samples must be taken from the distribution system and tested to ensure levels have been maintained above 30 mg/l (ppm) free chlorine. All test and sampling points must be identified and the results of each test recorded.
- v. The system shall be thoroughly flushed out with clean mains water until tests indicate that the residual level of free chlorine is no greater than 0.5 mg/l (ppm), or that present in the mains water supply.
- vi. Using a suitable sterile containers, collect water samples and submit for biological analysis. The analysis should measure the presence of contamination by general bacteria (Total Viable Colony Count – TVCC).

NOTE 1: Samples to be collected no earlier than 48 hours following disinfection.

NEUTRALISATION:

Disinfectant solutions of more than 3000 litres must be neutralised before disposal with sodium bisulphite (SB) or sodium thiosulphate (ST) at the rate of 350 gm SB/m³ or 525 gm ST/m³ of disinfectant solution.

NOTE: Ensure that for installations of large section of pipework and new complete installations the 'HAND-OVER PROTOCOL FOR NEW BUILD AND REFURBISHMENTS' and 'PERMIT TO OPEN WARD/AREA' protocols are completed before putting system into use. These records and associated certificates must be issued with 'hand-over