Disinfection

After flushing, disinfection may also be required. However, this is not a task for the inexperienced and should always be carried out by someone with the appropriate skill and training. Nevertheless, it is important to gain an understanding of when and how disinfection should be carried out. Procedures are laid down in BS6700, which states in section 3.1.10.2 that systems shall be disinfected in the following situations:

"a) in new installations (except private dwellings occupied by a single family);

b) where major extensions or alterations have been carried out;

c) where underground pipework has been installed (except where localised repairs only have been carried out or junctions have been inserted);

d) where it is suspected that contamination may have occurred, e.g. fouling by sewage, drainage, animals or physical entry by site personnel for interior inspection, painting or repairs;

e) where a system has not been in regular use and not regularly flushed."

BS6700 further indicates, in section 3.1.10.4.1, that for an effective disinfection procedure the free residual chlorine concentration shall be 50 p.p.m. (50 mg/l) for a contact period of one hour.

Also, the free residual chlorine must be measured at the end of the contact period and if the value obtained is less than 30 p.p.m. the disinfection process must be repeated. This section of the standard also states

"after successful chlorination, the system shall be immediately drained and thoroughly flushed with cleaned water. Flushing shall continue until the free residual chlorine is at the level present in the drinking water supplied."

In order to avoid problems developing, both in terms of preservation of water quality and prevention of corrosion, care needs to be exercised to ensure that the above-mentioned strengths of free residual chlorine and related dwell times are not exceeded during disinfection. It is equally important to ensure that, after disinfection, systems are thoroughly flushed with fresh water, i.e. disinfection should be carried out strictly in accordance with the requirements of BS6700.

Stabilised chlorine dioxide is another oxidising disinfection that is gaining in popularity and can be used as an alternative to sodium hypochlorite.

For details of the different disinfection techniques, please refer to dataflow sheet No.3 'System Disinfection of Hot & Cold Water Services that can be found in the IoP members only area.

References

BS 6700 : 1997, British Standard Specification for Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

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