

have developed in the cistern can enter the system with the make-up water and produce debris. Such debris can cause blockages and is liable to foul the boiler heat exchanger. Under-floor heating and other systems which operate at lower temperature (below 60 °C) can also be prone to microbiological fouling. Even the high temperature in the boiler heat exchanger might not be sufficient to kill all micro-organisms.

Anaerobic bacteria can thrive in both open and sealed systems fouled with corrosion and other debris, beneath deposits where the temperature might be lower and there is an absence of oxygen. This can give rise to microbiological corrosion of ferrous metals.

5 Treatment of water

5.1 General

In most cases, the quality of the water used in the central heating system is determined by supply to the premises and this will vary across the United Kingdom.

Water treatment should be applied to all primary systems except for single feed indirect hot water cylinders.

Consideration should be given as to whether the water is hard or soft, as this might influence the approach to water treatment and the choice of proprietary product. Refer to the manufacturer's specifications.

5.2 External

Naturally soft waters of low alkalinity or those supplied via a base-exchange resin softener have an increased potential for corrosion and, if they are to be used in any central heating system, a corrosion inhibitor specifically formulated for the purpose¹ should be added and properly maintained.

5.3 Internal

To minimize the likelihood of corrosion, scale and sludge formation, the system water should be treated with an inhibitor. Before the inhibitor is added to the system, the first step should be to render the system in a condition free from foulants. Foulants in new systems can include corrosion debris, flux residues, grease, installation debris, metal swarf, solder pieces, stamping oil and welding rod. Existing systems might also contain black magnetite sludge and scale. If microbiological fouling is found within a system, (often detected by the presence of organic slime or a foul odour), the system should be disinfected using a proprietary disinfectant and a biocide added for ongoing protection.

6 Cleansing

6.1 General considerations

Before cleansing, the system should be examined to determine the system configuration and the age and overall condition of components, in order to ascertain the cleansing regime required. For example, the procedure could remove corrosion debris covering pin-holes in radiators and this could result in leaks.

¹ Check inhibitor product specification