

Code of practice for

Treatment of water in domestic hot water central heating systems

BS 7593:1992

Water supplied via a water softener should not be used in any central heating system unless a corrosion inhibitor specifically formulated for the purpose has been added. Base exchange softening tends to raise the pH of the system water, which is unacceptable where the system contains aluminium, and softened water should not under any circumstances be supplied to such a system.

5.1.2 Internal system water

To minimize the likelihood of corrosion, scale and sludge formation, and microbiological contamination, the system water may be treated with an inhibitor.

Whether or not it is intended to add an inhibitor to the system, the first step should be to render the system in a condition free from foulants. Foulants in new systems include corrosion debris, flux residues, grease, installation debris, metal swarf, solder pieces, stamping oil, welding rod, while existing systems are liable to contain black magnetite sludge and perhaps some lime scale.

5.2 Cleaning procedure

5.2.1 General considerations

Before any particular method of cleaning is instigated, consideration should be given to the age and overall condition of the system. Such consideration should be applied to the pipework and system components, and the primary water contained in the system now or in the recent past.

The manufacturer's specification and usage instructions for a chemical cleanser should then be studied and product selection made accordingly. Unless the manufacturer(s) state(s) to the contrary, products from different manufacturers or different products from the same manufacturer should not be

b) Drain down the system primary water, and if possible determine its volume.

c) Carry out any remedial work.

d) Fit or otherwise ensure that full bore drain off facilities are available to serve the system (see BS 5449:1990):

- 1) at all low level points of the system;
- 2) at the boiler.

NOTE 1 The drain down facilities on many systems are unsuitable for flushing purposes, as the valves fitted are of a type designed only for draining for frost protection, maintenance or servicing purposes.

NOTE 2 Where it is impossible or impractical to provide full bore drain down facilities at the lowest points of the system, e.g. where pipework is embedded in ducts laid in the floor screed, suitable arrangements or provisions should be made for the removal of all deposits, sludges and foreign matter by mechanical flushing, or reversed hard flushing, via a full bore facility elsewhere. This will necessitate the installation of a valve in the main circuit to allow water from an external source to be forced under pressure around the system in the reverse direction.

NOTE 3 Attention is drawn to Byelaw 14 of the Model Water Byelaws [1] for filling loops, i.e. the connection should be temporary and double check valves should be incorporated.

e) Refill the system with water and recirculate.

f) Again turn off or otherwise isolate the cold feed connection to the system.

g) Drain the primary system water at all low level or other full bore drain off points. If the boiler is at the low point and it has no drain off facility, provision should be made for flushing the boiler in accordance with note 2. In exceptional circumstances, it may be necessary to remove and flush the boiler separately.

5.2.4 Chemical cleaning

The recommended procedure for the chemical cleaning of the system is as follows.