

Water Treatment of Industrial/ Commercial Heating Systems – Quick Guide

This quick-guide is intended for designers, owners, insurers, managers, operators, maintenance personnel, competent persons or any other interested persons. The intention is to help in understanding the water treatment required for their plant and heating systems and to give guidance on how to achieve it.

Scope: All systems above 45kW and all parts of heat networks.

Assess

Competency – Do you have the competency to plan or carry out the work (Education, Training, Experience)? Note: The owner/controller of the project has the legal duty of care to prove competency.

Risk Assessment – Make an assessment of the situation and devise a plan:

- o Is it a new or existing system?
- o Are there indirect HIU's installed which will require both primary and secondary treatment?
- o Analysis of initial fill/make-up water.
- o How will the system be cleaned and flushed and dosed? Note: Different water treatment methods are available and manufacturers specific recommendations for their equipment must always be followed.
- o Are air and dirt separators or filters required?

Water Treatment Plan – following on from the risk assessment a site specific/system specific Water Treatment Plan should be produced.

Control

Commissioning – The water quality should be checked:

- o At commissioning of the system
- o 4 weeks after commissioning

Monitoring – Ongoing and regular monitoring of the system water should take place:

- o Every 3 months for the primary side
- o Annually for the secondary side of a HIU (refer to BS7593 for further details)
- o A corrosion monitor should be considered

The project risk assessment may require other timescales to be followed. In all cases samples should be taken from multiple points across the system.

Maintenance – System water quality is essential for the efficient functioning of a system and should be well maintained as such.

Prove

Logbook – Copies of equipment commissioning records, Benchmark records, water quality certificates, or records of any other work e.g. cleaning of filters etc., should be kept with the Water Treatment Log Book which should be retained on site or saved electronically.

Further guidance can be found in the following documents:

- Equipment manufacturers instructions and technical guidance must always take precedence and any recommended water treatment methodologies must always be followed.
- ICOM Water Treatment and Conditioning of Commercial Heating Systems Guide
- CEA BG02 Guidance on Safe Operation of Hot Water Boilers
- CEA and ICOM BG04 Guidance on Boiler Water Treatment
- BSRIA BG29 Pre-Commission Cleaning of Pipework Systems 6th edition (BG 29/2021)
- BSRIA BG50 Water Treatment for Closed Heating and Cooling Systems (BG 50/2013)
- CIBSE CP1:2020 Heat networks: Code of Practice for the UK
- BS 7593:2019 Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water systems
- BS 8552:2012 Sampling and monitoring of water from building services closed systems. Code of practice