

Aquafacts No.9

'Domestic Heating Compliance Guide' - April 2007

A technical insight into the 2007 Building Regulations and related British Standards.

There is a requirement for all homes, fitting new boilers, to integrate water treatment protection as part of the installed heating system. For those requiring a more technical insight the following will hopefully be of interest.

The guide provides guidance on the means of complying with the requirements (of Part L2) for conventional space heating systems and hot water systems in dwellings. It comprises four self-contained fuel-based sections and five specialist technology-specific sections. Each fuel based section addresses all the requirements applicable to primary and secondary space heating and hot water technologies for gas-fired, oil-fired and solid-fuel systems. The specialist technology-specific sections provide further guidance on the minimum provisions for specialised space heating and hot water technologies (community heating; under floor heating; heat pumps; solar water heating and micro-CHP units).

System preparation and water treatment

The 'Compliance Guide' states the following:

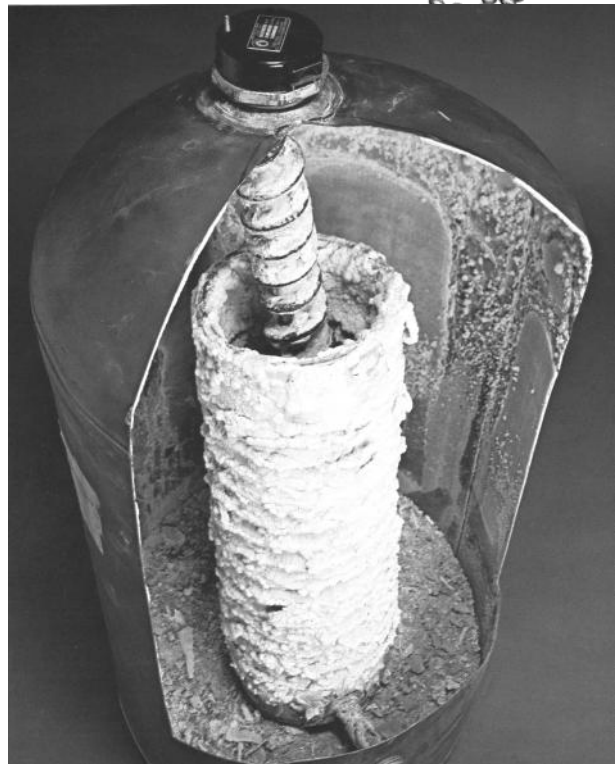
'Central heating systems should be thoroughly cleaned before installing a new boiler. After installation, water treatment should be added to the primary circuit to minimise the risk of corrosion and the formation of scale and sludge, which could impair the efficiency of the heat exchanger. Reasonable provision would be to follow the guidance on how to prepare and commission systems given in BS7593. Installers should also refer to the boiler manufacturer's installation instructions for appropriate treatment products and special requirements for individual boiler models.'

In respect of the above it should be noted that BS7593 (revised 2006) states:

'To minimise the likelihood of corrosion, scale and sludge formation, the system water should be treated with an inhibitor' - this is usually a chemical inhibitor. BS7593 then goes on to highlight the cleaning procedures prior to adding an inhibitor as well as future maintenance.

The 'Compliance Guide' also states:

'In hard water areas where the total hardness exceeds 200mg.l / ppm, reasonable provision would also*



A typical indirect hot water cylinder showing excessive levels of limescale.

include water treatment of the feed water to water heaters and the hot water circuit of combination boilers to reduce the build-up of limescale.


In North Hampshire and the Thames Valley water hardness is usually around 300 to 350mg.l / ppm* of carbonate hardness. This highlights that the area has a much higher level of water hardness than in some other regions. Therefore the levels of problems, likely to be caused by scale, will be proportionally high. BS7593 goes into considerable detail on the subject of water hardness (as well as corrosion) and its affect on home heating systems. It makes profound reading.

The water treatment required would involve either a physical conditioner or, more preferable, a water softener.

Concerns about corrosion in aluminium boilers

We are one of the few countries in the world where aluminium is used in the construction of

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boilers. Naturally soft and softened water have the propensity to corrode aluminium. Particularly with the latter, the advice from aluminium boiler manufacturers has been to bypass or remove water softeners. This uncompromising criteria has caused upset and confusion with many softener owners. Most do not want to loose their valued appliance or be faced with having the expense of replumbing their heating system.

We believe this to be totally unnecessary. Aqua-Nouveau would like to make it clear that aluminium boilers can be safely used in homes with a water softener as long as an inhibitor is used. Alternatively, there are boilers available that do not use aluminium. BS6798:2009 states:

'Waters supplied via a base exchange resin softener have an increased potential for corrosion, especially in central heating systems containing aluminium components, and if they are to be used in any central heating system a corrosion inhibitor specifically formulated for the purpose should be added and properly maintained'.

Please refer to our Aquafact sheet 11 for further information on aluminium boilers

* ppm (parts per million) and mg/l (milligrams per litre) are equal measurements.

Useful web sites:

www.defra.gov.uk (more details)

www.bsi-global.com