

HEATBASE Ltd FACTSHEET 17

Hard water and Combi boilers

Version 3 September 2016

Can you use a combi boiler with spring water or borehole water?

Depending on where you live, the hardness of your water supply can vary enormously even if it is supplied through the water main. Some people have their water supplied by borehole or natural springs and it is common to find that this type of supply is higher in calcium carbonate and magnesium carbonate which can then deposit as lime scale when the water is heated.

Combi boilers are more likely to experience problems if the water supply is not suitable, due to the high temperature the water is heated to and pumped through small spaces in the plate heat exchanger where the lime scale can then be deposited reducing heat transfer or blocking the flow. Boiler manufacturers state various different levels of temporary water hardness that if exceeded means a water softener needs to be fitted. These levels vary between 120 ppm and 180ppm, but it is now a legal requirement that a water softener must be fitted if the temporary water hardness is 200ppm or more; this applies to Open vented and Mains pressure un-vented Hot water cylinder installations as well as combi boilers.

Due to the issues affecting combi boilers, many manufacturers will void the warranty on certain parts such as plate heat exchangers and thermostatic mixing valves if the water is supplied via a borehole or spring; even if a water softener is fitted. In some cases they will also void the warranty if the supply is from mains water so it is vital that you have this checked before installing a combi boiler or ensure that adequate and appropriate water treatment is installed.