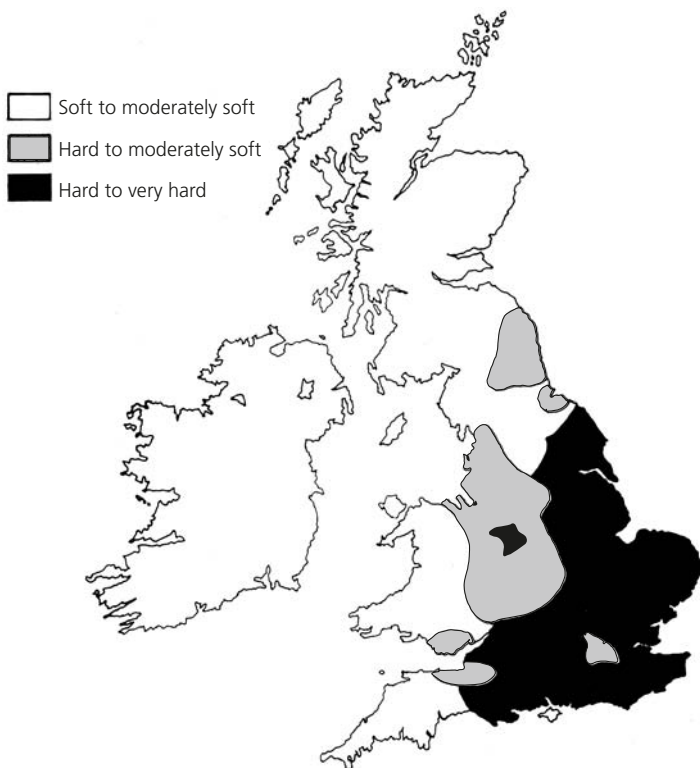


generally more energy efficient to connect them to both hot and cold supplies as the programme time will be reduced. However, in this case, the water supplied should not exceed 60°C.

Water treatment

Approximately 60% of the UK is supplied with *hard water*. The resulting limescale build-up on heating elements can considerably reduce heating and hot water efficiency. Corrosion can



Water hardness

occur beneath the scale, reducing life expectancy and scale particles will clog shower heads and mixer outlets, reducing flow and proper mixing of hot and cold water. It will also leave unsightly, but not harmful, limescale deposits round tap bases, plug holes, and water marks on stainless steel sinks and metal implements.

The hardness of the water can be obtained from the water company. It is usually classified as soft: 0–50 ppm (parts per million) to very hard: over 300 ppm.

The hardness is determined by the geology of the ground through which the rainwater runs. Water will pick up calcium or magnesium from chalk or limestone, but not if it passes through granite or peaty soils.

Soft water can pick up trace metals from pipework which may eventually cause leaking pipes and corrode copper cylinders.

Water softeners

Water softeners consist of a resin cylinder which is filled with sodium chloride (salt). They are plumbed into the cold mains supply inside the house. As water passes through the cylinder, calcium and magnesium are removed and are replaced by sodium salts.

Water softeners are usually fully automatic and only need periodic filling with salt.

They take up space typically about 300 × 450 × 800 mmh and need a drain connection for the hose waste and an electricity supply for a time clock.

Water softeners should be fitted after the mains supply of water to any drinking water taps because the taste of softened water is unpleasant and is not good for brewing tea. There is also some evidence that drinking soft water can aggravate heart conditions and may be unsuitable for people who require a low sodium diet.