

Water Hardness

Hardness is a measure of the amount of calcium and magnesium salt that is present in water.

Rainwater is naturally soft because it has no mineral content. As it seeps through the ground it can potentially pick up minerals, such as calcium and magnesium. Very small particles of calcium and magnesium(ions) dissolve into water as it passes through or over soft rocks like limestone or chalk.

Hardness is made up of two parts: temporary (carbonate) and permanent (non-carbonate) hardness. When water is boiled, a portion of the hardness, the temporary hardness, forms a calcium carbonate scale, which can deposit on kettle elements as limescale. The permanent hardness does not do this when water boils and stays dissolved in the water.

Signs of hard water

As well as scaling inside kettles, other usual signs of a hard water supply include reduced lathering of soaps, washing up liquids and washing powders; 'tide marks' on basins, sinks, baths and toilets; a scum on boiled water and a decrease in the expected life of appliances that use hot water e.g. electric irons, washing machines and central heating systems.

Hardness is usually expressed in terms of the equivalent quantity of calcium carbonate in milligrams per litre or parts per million. However, it may also be expressed as Degrees of hardness in Clark (English degrees), French or German Degrees. There are no regulatory limits for water hardness. Several studies have shown that hard water provides some benefit to health, although the exact mechanism is unclear. For example, some studies have shown evidence of less heart disease in areas with a hard water supply.

What can I do if I prefer soft water?

The hardness of your water supply is largely governed by the geology / landscape of the area in which you choose to live. If you move to Snowdonia where most water comes from upland reservoirs you would expect the water to be soft. If you move to an area where your water has to be supplied from lowland lakes or groundwater sources the water is more likely to be hard to very hard.

For people who receive a hard water supply, there is the potential to make use of a water softener to remove some of the hardness. This is a matter of personal choice. A softener will improve the efficiency and increase the life of appliances using hot water. It will make lathering easier and reduce 'tide marks' on sanitary ware. Some people with skin conditions, such as eczema, have fewer problems if they use soft water for washing as it not so "drying" to the skin. Conversely, it is difficult to wash all traces of soap away with soft water and people with allergies to soap may prefer to wash with hard water.

If a water softener is installed, you may wish to consider maintaining a non-softened supply for drinking and cooking purposes. Many water softeners work by replacing the calcium and magnesium in the water with sodium. Too much sodium is a particular concern for babies, who have immature kidneys, and for those who are on a low sodium (or low salt) diet. It is recommended that softeners should be fitted after the drinking water tap to comply with the requirements of the Water Supply (Water Fittings) Regulations 1999. They should be maintained in accordance with manufacturers' instructions.

Where can I get further information?

Please call us first on our operational helpline on **0800 052 0130**.

One of our regulators, the Drinking Water Inspectorate, is responsible for ensuring the high quality of public water supplies. You can visit their website at: www.dwi.gov.uk