Water hardness

Water quality factsheet 4

Water hardness depends on the amount of naturally occurring minerals that are dissolved in water.

This factsheet explains more about the nature of the water that we supply at Bournemouth water, which is generally 'hard' water.

We take water quality seriously at Bournemouth Water. This is one of a series of factsheets about water quality – you can find more factsheets at bournemouthwater.co.uk

What makes water soft or hard?

Rainwater is naturally soft – it contains only small amount of minerals. But as the water passes through rocks, such as chalk and limestone, minerals in the rocks are dissolved in the water, giving it its hard nature.

The dissolved minerals are normally calcium or magnesium compounds.

Water hardness measurements

There are several different measurements for water hardness. You may see any of these mentioned in the manuals for washing machines and other appliances.

Hardness category	Calcium (mg/l)	Calcium carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 20	0 to 50	0 to 3.5	0 to 5	0 to 2.8
Moderately soft	21 to 40	51 to 100	3.6 to 7	6 to 10	2.9 to 5.6
Slightly hard	41 to 60	101 to 150	8 to 10.5	11 to 15	5.7 to 8.4
Moderately hard	61 to 80	151 to 200	10.6 to 14	16 to 20	8.5 to 11.2
Hard	81 to 120	201 to 300	15 to 21	21 to 30	11.3 to 16.8
Very hard	Over 120	Over 300	Over 21	Over 30	Over 16.8



Bournemouth Water

Is the water supplied by Bournemouth Water soft or hard?

Most of our water supply can be classified as 'hard' (on a scale of one to ten this would be eight).

For more information on water hardness and test results from customers' taps in your area, please use the postcode search on our website at bournemouthwater.co.uk

All water supplied by Bournemouth Water has a typical range of between 201 to 300mg/l as CaCO₃

Do I need to install a water softener?

Some people living in harder water areas choose to install water softeners in their homes.

The Drinking Water Inspectorate recommends that people don't soften the water supply to the taps used for drinking water. This is because some softeners increase the levels of sodium in the water, which can be harmful for people suffering from high blood pressure.

Softened water can also be more corrosive to metal pipework, which can lead to higher concentrations of metal in the water.

What water hardness can mean for appliances and items within your home

ltem	Soft water areas	Hard water areas - applies to all Bournemouth Water areas	
Kettles	No special requirements May discolour over time	Avoid re-boiling the same water to reduce limescale build-up.	
Boilers and central heating systems	No special requirements	Set the boiler to below 60 degrees to avoid limescale.	
Irons	No special requirements	Use the lowest appropriate temperature to reduce limescale build-up.	
Washing machines	Use the lower amounts of washing powders and fabric conditioners recommended by manufacturers	May need more powder and conditioners. Limescale may build up over time.	
Soap and washing-up liquid	Relatively small amounts needed	May take longer and more to build up a lather.	
Dishwashers	Use the lower settings recommended by manufacturers	Use the higher settings for softening as recommended by the manufacturer. May want to use salt tablets.	
Bathware and fittings	No special requirements	Limescale likely to build up and may require regular use of anti-limescale cleaners.	



Bournemouth Water

Softening treatments

Domestic treatments such as jug filters, water softeners or conditioners all have pros and cons.

Jug filters

Jug filters are jugs that have a replaceable cartridge housed in a unit that fits on top. The two main types of cartridge available have either:

- an activated carbon media designed to remove chlorine and organics, or
- an ion exchange resin media designed to soften the water

The carbon cartridges don't chemically alter the nature of the water but simply absorb things like chlorine. If you find black deposits in the water or the top of the jug, they will most likely have come from these cartridges, rather than our water supply.

The ion exchange softening cartridges chemically remove the calcium and magnesium salts in the water and replace them with sodium. For this reason, we advise against using this water for drinking for people on low sodium diets. We also advise against using this water for making up infant feeds. These cartridges may leave 2 orange or white particles in the water.

It's important to maintain and replace both types of filters in accordance with the manufacturer's instructions. Old filters can cause a build-up of particles and encourage bacterial growth, which contaminates the water. Filtered water should be drunk soon after pouring, as water with the chlorine removed has no protection against the growth of bacteria.

Water softeners

These plumbed-in devices use salt to soften the water by removing the hardness salts (calcium and magnesium) and replacing them with sodium.

We strongly advise keeping a separate tap for un-softened water for drinking as water softened this way can contain higher levels of sodium, which is not recommended for people on low sodium diets, or for making infant feeds. It has also been suggested that people who consume softened water may suffer a higher incidence of heart disease.

Softened water is a lot more aggressive towards metal fittings. You may experience higher corrosion of pipework, and if a softening system is fitted to an older system there is a greater risk of pinhole leaking once the protective hardness layer has been removed.

Water conditioners

These devices are attached to the outside of water pipes. They do not alter the chemical composition of water, but impart some form of electric or magnetic field into the water as it passes through. In theory, this changes the crystalline structure of the hardness salts so that a hard limescale does not build up.

Despite manufacturers' claims, it has not been possible to find a unit that works in all circumstances. If you wish to try one, choose a manufacturer that offers a full refund after a reasonable trial period in case you are not satisfied.

