

## Your drinking water



Your questions answered

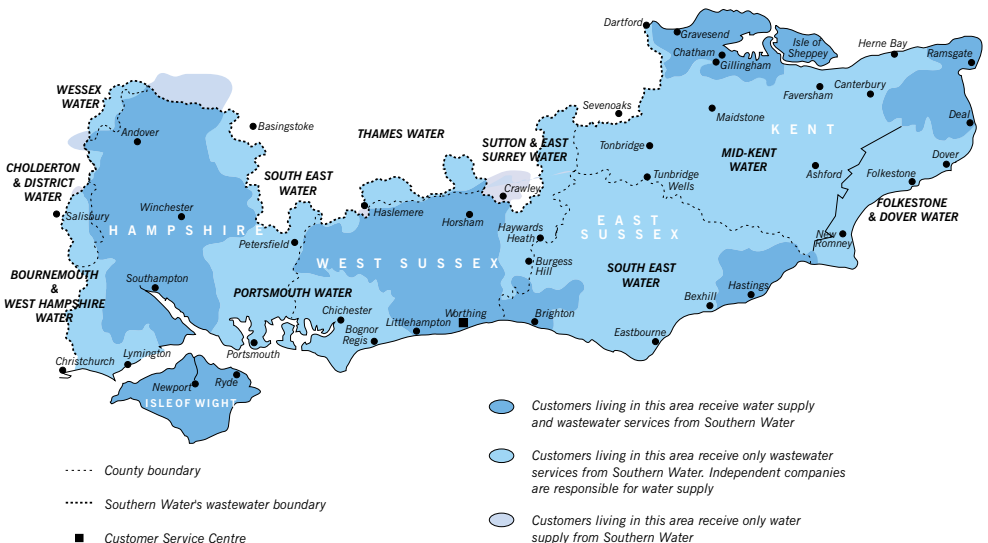
# Introduction

Southern Water supplies tap water more than two million people in Kent, Sussex, Hampshire and the Isle of Wight.

To ensure this water is safe to drink we carry out over 495,000 quality tests each year. Over 120,000 of these tests are measured against European quality standards and the results show our water quality to be among the best in Europe.

However, you may have a question or a concern about the water in your home. This leaflet gives details about water hardness, appearance, taste and smell. If you have any more questions or need advice please contact our Customer Service Centre at the address on the back page.

## Area of operation



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## Water hardness

**Most water contains dissolved mineral compounds which react with soap to produce scum. When you boil water, the minerals can also form fur or scale. How much scum or scale is produced depends on how hard the water is.**

This, in turn, depends on the type of source from which we collect the water. For details of the hardness of the water in your area contact our Customer Service Centre at the address on the back of the leaflet.

In the home, furring or scaling usually happens in heating systems and kettles. How much fur or scale builds up depends on the hardness of the water,

the type of system involved, the temperature to which the water is heated and how much water is used.

### Hard water and health

The scale itself is calcium carbonate (chalk) which has come from the water. It is not harmful.

The amount of calcium you get by drinking hard water is usually small compared with the amount in dairy products and bread in your normal diet. Hard water contains only a fraction of the normal daily amount of calcium you need for good health.

However, medical research has shown that people who drink harder water have better health records with regard to heart disease.



## Preventing scale

### Kettles

Using hard water in kettles has two effects:

- it produces scale or fur
- in plastic jug kettles it produces a film on top of the water because the scale cannot stick to the inside of the kettle.

Although scale does not increase the time it takes to boil water or the amount of fuel you need, we recommend you remove it regularly. You can do this by half filling the kettle with water, adding two tablespoons of vinegar to each pint and leaving it for four hours. Then empty the kettle and remove the loosened scale. Rinse and repeat as necessary.



Alternatively, you can buy a scale remover but be sure to follow the instructions exactly. Most scale removers are poisonous and strongly acidic so take care when you use and rinse the kettle properly afterwards.

### Water Softeners

Water softeners replace the scale-producing minerals (calcium and magnesium) with sodium, which does not produce scale. The process depends on a resin which becomes ineffective after a certain amount of water has been softened. Therefore, you have to renew it with common salt (sodium chloride).



Softened water will not react with soap to produce scum but it can cause rust on metal pipework.

It is not a good idea to use softened water for cooking. It is not as pure as the mains water supply and it often has levels of sodium which can harm your health. Never use softened water to prepare baby foods. If you have a water softener you must also have a tap at the kitchen sink which provides unsoftened water for drinking.

Softeners are often fitted for industrial reasons but they are not often necessary in the home as long as you have a modern plumbing system and, especially, where indirect heating systems are fitted. As well as the cost of the water softener, there are also charges for fitting and running the device.

Many dishwashers have a built-in water softener to provide rinse water. This will be free from hardness-scaling salts, which otherwise could be left on drained washing-up. These machines also need regular topping up with salt.

### Heating systems

There are two basic heating systems – direct and indirect.

- Direct systems are the traditional method of water heating. The water travels from a roof tank into the boiler where it is heated. The water then rises to the cylinder in the airing cupboard and stays there until you use it. With this system, the way to prevent scale is to avoid overheating. We recommend a maximum temperature of 60°C (140°F).

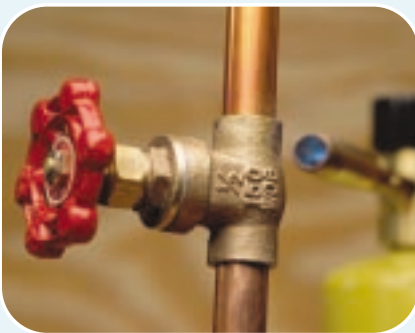
- Indirect systems do not usually produce scale because of the way they are designed. With an indirect system there are two circuits – the primary and the secondary.

The primary circuit contains the boiler, the radiators, a small expansion tank and a heating coil called a calorifier. The heating coil is in the hot water cylinder, which is usually found in the airing cupboard. This is the heat-carrying circuit.

Because the same water goes round the system and is not taken out only a tiny amount of scale is produced.

In the secondary circuit, the water is also heated in the hot water cylinder by the heating coil. This prevents overheating and so very little scale is produced.

You can reduce any scaling in heating systems by using a chemical scale inhibitor. There are various types of chemical scale inhibitors and some can be very unpleasant if they get into the drinking water system. We suggest you take advice from a qualified plumber.



### Immersion heaters

Scale often builds up on the heating element. Too much scale can stop the water circulating properly. You must, therefore, make sure that the thermostat is working and correctly adjusted. For most homes 60°C (140°F) is adequate - higher temperatures are unnecessary and expensive.

If you use your immersion heater a great deal you can make it last longer by using elements with special metal sheaths. In some cases it may be a good idea to use a chemical scale inhibitor. Again, we suggest you take advice from a qualified plumber.



### In the bathroom

In harder water areas natural soaps tend to produce a scum which sticks to sinks, baths and washing. However, synthetic detergents are less affected by hardness and do not produce a scum.

Baths salts may produce a cloudy appearance in hard water but bubble bath will work normally.

It is important to remove bath scum immediately because it tends to harden when it dries. It is best to use a liquid cleaner because abrasive materials will scratch the surface and make scum more difficult to remove in the future.

### Scale in toilet pans

You can remove chalky scale from toilet pans by using limescale remover, which you can buy from hardware stores and supermarkets.

If this type of scaling carries on then regularly clean the toilet pan with an acidic-type sanitiser.

Remember – do not mix cleansers and follow the instructions very carefully.

### Magnetic and electrical scale inhibitors

There are now many devices on the market which claim to stop scale and fur forming. Many have approval from the Water Regulations Advisory Scheme (Water Research Council) as devices that will be safe to use and will not contaminate water supplies. However, this approval does not guarantee that the device will work.

Your own plumbing design and other local factors may influence how well the equipment works. Before you fit it, get a written guarantee from the manufacturer saying that the device will produce the proper effect for several years, with a money-back clause.

## The taste and smell of water

**Water is classified according to its source. Groundwater comes from wells and boreholes underground in chalk or sandstone rock. Surface water comes from rivers, streams and lakes. About two-thirds of water supplied in Southern Water's region comes from underground sources.**

Surface water may sometimes have a flat, earthy taste and, in the warmer summer months, a distinctive smell. Treatment is in place at water supply works to reduce taste and odour associated with surface water.

Sometimes we may have to change the source of your water supply. You may notice a different taste, particularly if the change is from a groundwater to a surface supply.

There are a number of reasons why your water supply might have a different taste or smell. They have simple explanations and are no cause for alarm.

### **Musty or earthy tastes or smells**

In the past, various organic materials have been used in domestic plumbing systems, such as grease and fibre washers. Bacteria can grow in these if the pipework is warm and rarely has water flowing through it. This can cause musty or earthy tastes or smells.

### **Metallic tastes**

If domestic pipes or fittings containing copper or zinc begin to corrode it may increase the concentration of these metals in the water and produce metallic tastes.

Metallic tastes can be reduced by flushing the water to waste for a short period of time after water has been standing in the pipework for a prolonged period (e.g. overnight). These can be stopped by renewing the pipework in the property.

### **Chlorine, antiseptic or TCP-like taste or smell**

Chlorine is used to treat water to make sure it is safe to drink. Only very small

amounts are used, but, on rare occasions, a smell or taste may develop when the water flows through the water mains or while it is stored in underground service reservoirs.

Unusual flavours may also happen because the chlorine reacts with household fittings. Common examples are anti-splash devices on taps. A sure test is to ask neighbours if they are having the same problem.



These tastes may vary because they depend on how long the item has been in contact with the water. A good example is a TCP-like taste in the first cup of tea in the morning, perhaps caused by a faulty tap washer which has not been used

overnight. The short-term remedy is to run the tap before you use it and to fit a new washer as soon as possible.

### **Gas or fishy smells**

These occasionally occur in the hot water system. Dead animals or birds falling into the roof tank are a frequent cause so it is important to protect the tanks with an effective cover.

If this problem happens, clean and disinfect the plumbing system.

### **Lead pencil or graphite taste**

A variety of anti-oxidants are used in the manufacture of some types of plastic pipes. The only way to remove this taste is to replace the pipes.

### **Miscellaneous**

Some plastic pipes may be made of material that lets through substances which may affect the taste or smell of your water. Do not lay plastic pipes close to fuels, bituminous materials or floor sealants.

## Discoloured water

When the water leaves our supply works it is clear, bright and free of unwanted particles. We test it rigorously to make sure it stays this way. However, the water can become discoloured before it reaches your tap.

The two most common problems are when the water becomes brown or when it becomes cloudy and white. Both happen after the water has left the treatment works, either in the mains distribution system or in domestic plumbing.

### White discolouration

This milky, chalky or bubbly discolouration is caused by tiny bubbles of air. It is quite harmless and the water will clear if you leave it to stand.

Air can enter water in the distribution system but more often it comes in through a faulty fitting in your property, for example through part of the tap.

The air dissolves in the water under pressure. The pressure is released when you turn on the tap. The air then comes out of solution forming millions of tiny bubbles which give the water a cloudy, white colour. It is similar to what happens when a fresh bottle of lemonade is opened. These bubbles then rise slowly to the surface and the water clears from the bottom upwards.

### Brown discolouration

This discolouration is almost always caused by rust (iron oxide) which collects on the inside of iron water mains and customers' service pipes which run from the property



*Water goes through extensive treatment processes before it reaches your taps*

to the water main. Rust can be dislodged by a disturbance to the pipe, such as a burst main or rapid changes in the direction or speed of water flow. The rust temporarily gives the water a brown colour.

We work very hard to stop this discolouration with a programme of mains flushing, cleaning, relining and replacement.

### Stains on cutlery

Stains may happen after dishwashing where the detergent has not been rinsed off properly or they may be caused by the salt used to soften the water for rinsing. A rinse aid recommended by dishwasher manufacturers may stop the problem.

### Oily film

An oily film may form on the surface of boiled water if you have galvanised iron pipes and fittings. Very small, flat crystals of a zinc compound are formed and then float on the surface. These form a shimmering layer which has nothing to do with oil. However, they do show that either you are filling the kettle without first flushing the pipe or that the galvanised pipes in the property are in need of attention.

## Lead

Water from our supply works does not contain lead. However, lead can be dissolved in water if it comes into contact with lead pipes or materials containing lead, such as some solders. Properties built before 1970 may have lead pipes. Those built after 1970 are unlikely to have lead pipes. If you are concerned that you may have lead plumbing or would like the drinking water checked for lead then please telephone our Customer Service Centre on 0845 278 0845.

If you would like any further information, please contact:

**Customer Service Centre**

Southern Water  
Southern House  
Yeoman Road  
Worthing  
BN13 3NX

Telephone:

**0845 278 0845**

[www.southernwater.co.uk](http://www.southernwater.co.uk)

