

## Scale Defender FAQs

### 1. Have I seen something like Scale Defender before?

There are other products that look similar but that are designed for LOCAL PROTECTION (such as boilers) rather than COMPLETE home solutions.

It is important you understand the difference as although these LOCAL PROTECTION systems may prevent damage to (say) a boiler, they cannot protect the complete dwelling (taps, appliances, showers, sanitaryware) AND also provide drinking water.

### 2. What is the advantage of Scale Defender compared to other water treatment systems?

Scale Defender has many advantages compared to other COMPLETE DWELLING systems. These are usually contained in a large white box and situated in a cupboard in the kitchen. Compared with these "water softeners".

Scale Defender ....

- Is easy to fit and requires no electricity.
- Does not waste water as it does not need to be flushed for regeneration
- Is cheaper to buy and to run
- Overall is more environmentally friendly
- Leaves important minerals available in the water for the body to use.
- Needs no separate drinking water feed as Scale Defender treated water is safe to drink
- Is easier to maintain as cartridges are easy to change.

### 3. Is Scale Defender difficult to install?

No, Scale Defender is easy to install. It simply fits inline after your stopcock with x2 Compression joints, both 15mm and 22mm are included. Also the unit is compact enough to fit almost anywhere.

### 4. How does Scale Defender Work?

Scale Defenders patented dosing mechanism adds a food grade (consumable) polyphosphate to the water with a maximum of 5 ppm (parts per million) and because of this the Calcium and Magnesium elements in the water receive a coating. This prevents the limescale sticking and thus a build up on the inside of pipe-work or in equipment or on sanitary ware.

### 5. What is polyphosphate?

Polyphosphate is a food-grade (consumable) product approved by the World Health Organization and Food and Agricultural Organization. It is widely used today in the food processing industry for cheese, meat, wine and other products.

It is 100% SAFE and suitable for the treatment of (drinking) water.

### 6. What does the Scale Defender system do with the Calcium in the water?

Scale Defender does not remove the Calcium or Magnesium from the water as these minerals are crucial to the human body (e.g. bone growth in the young). In fact in several countries Calcium is not allowed to be removed from the system by law for this reason. Scale Defender coats the Calcium so it cannot stick on the inside of pipe-work, equipment or on sanitary ware.

However when ingested by humans the coating is stripped away making the Calcium available for the body to use. By treating water in this way, your body will always receive enough of these important minerals. You will have the benefits of Calcium, but not the damaging effects in the home.

## **7. Will Scale Defender remove or eliminate Calcium from the water?**

Scale Defender seals the Calcium using a patented dosing system. This way Calcium remains available for consumption. The coating will be broken down by the human body when ingested.

Scale Defender uses food grade materials to achieve this and this makes its use 100% safe for drinking water and the environment.

## **8. Is Scale Defender safe?**

Yes! The Scale Defender technology is a completely safe way to treat water in the home (including drinking water) and is safe for human consumption according to the WHO\* and FAO\* recommendations and in accordance with the international norm for drinking water to the EC regulations, standard (EN 1212) and British Standard BS EN 1212.

## **9. What happens when the treated water dries on a shower screen for example, will it leave limescale marks?**

The treated Calcium will not stick to surfaces and can be removed very easily (even with a dry cloth) due to the Scale Defender coat which has been formed during the treatment. This way it will save a lot of cleaning work..

## **10. Do I still have to clean my taps and sanitary ware?**

Unfortunately Scale Defender cannot clean your kitchen and bathroom for you! However you will experience a difference! You will notice that cleaning is easier and quicker. Scale Defender protection film will make sure limescale cannot stick and can be removed within seconds, leaving you more time for other activities.

## **11. How often do I need to replace my Scale Defender cartridge?**

One replacement dosing cartridge will treat upto 40,000 litres (40 m3) of water. This is less than an average of only one cartridge per person per year.

## **12. How do I know when my cartridge needs replacing?**

There is a visual prompt of a high visibility red ball as explained in the instructions, but as an additional aid an empty cartridge will emit an audio alarm to remind you to replace the cartridge and “get protected” again.

## **13. Will the replacement cartridge work immediately after replacement?**

Yes, the new cartridge will immediately create a new solution and will work instantly. The powder will shrink, and the level of the powder will drop while the system creates the dosing fluid.

You might experience some mixed water/air coming from your taps during the first few litres but this is perfectly normal.

## **14. I have used more than 40,000 litres however the dosing cartridge is not empty yet.**

Don't worry! As long as the cartridge is not empty you can keep the existing cartridge in place.

## 15. Does Scale Defender also work with (boiling) water?

Yes, at higher temperatures Scale Defender protects against the build up of limescale.

Elements in boilers and heating equipment will be protected.

At temperatures above 100 Degrees Celcius, for instance when boiling water for food or drink preparation, the effectiveness will be reduced as water turns to steam.

The calcium will become visible again. However, it will remain easy to clean from surfaces due to the Scale Defender treatment.

## 16. Is Scale Defender Environmentally Friendly?

Yes, the Unit itself is 100% Recyclable as is the packaging. Also, it wastes no water when treating and uses no electricity. Unlike other water treatment solutions it uses zero salt and therefore doesn't contribute to increased sodium levels in the water table.

## What are the effects of Hard Water?

In hard water areas, limescale can buildup on the waterside of the boiler's heat exchanger. This creates an insulating layer, inhibiting heat transfer to the water. Limescale builds in hard water conditions at a rate of about 1mm a year.

British Water calculate that every 1.6mm or 1/16" of scale in a heating system causes a 12% loss in heating efficiency.

The Carbon Trust, which advises on energy efficiency, report similar findings: "A 1mm layer of limescale will cause a 7% increase in energy input to the boiler to meet the same heat demand."

Energy wastage is only part of the equation.

Scaling can cause premature failure of boiler heat exchangers - this part then needs to be replaced and often whole boilers are written-off and new units required.

Hard water corrosion also effects your home appliances like Washing Machines, Dishwashers, Kettles and Boiling Taps.

## What are the effects of Soft Water Corrosion?

It can be a surprise to learn that naturally occurring soft water can be harmful to your water system.

Natural soft water is water that contains very little natural minerals, and this 'pure' water is actually aggressive to metals and causes corrosion. The symptoms of such corrosion can be when the residue (caused by oxidation of the metal pipes) comes out of your taps, turning tap water brown. Left unchecked, such continual corrosion will cause pinholes in the pipe and leaks may be the result.

Natural soft water (sources from lakes, rivers etc.) is often low in pH (a term used to describe a scale of acid/alkalinity) making it slightly acidic. This acidity makes the water corrosive to metals.

Hard water can still be acidic, but certain minerals in the water have properties that prevent the chemical reaction of corrosion taking place - thus providing a level of protection for the metal. The drawback is that such minerals

can also build-up as limescale.