



AQUABION® Galvanic water treatment for limescale & corrosion **Frequently Asked Questions (FAQ's) June 2018**

Q 1: What is AQUABION®?

A: **AQUABION®** is a treatment for limescale in water systems consisting of a Brass plumbing fitting containing Zinc, Copper and Stainless-Steel components which is fitted into the incoming water main pipe of a house or a commercial/industrial property. It requires no electricity, salt or any other additive, requires no maintenance, is guaranteed for 5 years and will work for about 7-8 years on average(domestic).

Q 2: What does AQUABION® do?

A: **AQUABION®** protects hot water systems (pipes & appliances) from the harmful effects of limescale. Limescale can reduce the efficiency and increase the cost of running hot water systems and reduce the lifespan of appliances such as electric showers, emersion heaters, washing machines, dishwashers and kettles costing you hundreds, if not thousands, of Euro per year.

Q 3: How does AQUABION® work?

A: Put simply, it can turn aggressive 'hard' Limescale into non-aggressive less-adhering 'softer feeling' Limescale. The Zinc block inside the **AQUABION®** is very slowly releasing tiny amounts of Zinc which bond with the limescale in the water. More scientifically put, it is a galvanic process whereby an ion exchange occurs between the aggressive Limescale (CaCO_3 – or Calcite*) and the pure Zinc sacrificial anode inside the **AQUABION®** forming Aragonite (ZnCO_3 – or non-aggressive 'softer feeling' Limescale). This has the appearance of a white powder on your sink or shower which you can clean away much easier i.e. it does not stick as much to your appliances or require such aggressive cleaners as before.

*Calcite is the chemical name for aggressive Limescale. It means that when heated it attaches to pipe work and heating coils which causes all the damage to your plumbing appliances and increases the heating costs.

Q 4: The AQUABION® seems too small for an entire house, is it?

A: No, being neat is only an advantage as it takes up so little room, but that does not mean that it is less effective. Size doesn't matter!

Q 5: This all sounds too good to be true – is it?

A: No, **AQUABION®** was developed and patented by ION Germany GmbH IN 2004 and is based on the sacrificial anode principle – a well known concept in plumbing e.g. sacrificial anodes have been used commonly to protect Copper cylinders, for storing hot water, for many years. There are research papers and testimonials endorsing **AQUABION®** from Germany, UK, USA, Singapore, South Africa and all over the world going back many years which are available on www.aquabion.com or by contacting us. More than 150,000 non-chemical water treatment units have been sold by ION / **AQUABION** worldwide since 1990 including more than 50,000 **AQUABION®** units.

Q 6: So will I still have Limescale in my water after installing an AQUABION®?

A: Yes, but it will stick much less to the heating elements in your hot water cylinder, dishwasher, washing machine, electric shower etc. and it won't clog up the pipe work. In addition, it can also help to slowly reverse some of the old scale build up in your appliances.

Q 7: What effect will AQUABION® have on my kettle?

A: Your kettle heating element will have less damage caused by aggressive 'hard' limescale depending on your water quality from your water supply. You will still need to routinely clean out the newly formed Aragonite or 'powdery' scale which will coat some of the inside walls and base of your kettle but this will be much easier than with aggressive 'hard' scale. This will only require some brushing out and we supply a plastic brush with each AQUABION® for this purpose. Depending on the design of your kettle, it may still contain a layer of what appears like 'hard' scale on the plastic base of the kettle. This occurs due to the constant boiling cycle causing expansion and contraction of the plastic base, just above the concealed element trapping some of the 'powdery' limescale. This is normal and easily removed. There are also various methods of preventing the scale from pouring out of the kettle e.g. mesh filters on the spout, wire wool balls which trap scale etc. Don't forget some limescale in your drinking water is desirable for the calcium and taste of the water etc. and routine brushing out 'powdery' scale is preferable to using the chemical descalers necessary for untreated 'hard' limescale, which you should have in your drinking water source with the alternative of water softeners. DO NOT USE ANY ACIDS!

Q 8: What effect will AQUABION® have on my showerheads?

A: AQUABION® will noticeably reduce calcification occurring on the face of your showerheads and clogging of the pin-holes. However, as with your kettle, it is important to routinely clean out your showerheads of the 'powdery' scale which may settle in the layers within the showerhead. Brushing out or tapping out should do it or Vinegar for stubborn deposits rather than using chemical descalers. More importantly, the electric heating element will be much more resistant against hard calcification (scale build-up). If routine cleaning out is not carried out, in extreme cases, the 'soft' scale may back up into the heating element in electric showers causing failure. DO NOT USE ANY ACIDS!

Q 9: So will I still see Limescale on my shower doors after installing an AQUABION®?

A: Yes, but as I have explained already, the new formed 'powdery' scale can be cleaned away much easier in your routine cleaning of the shower i.e. less need for aggressive cleaning agents.

Q 10: How do I know what size AQUABION® to install in my home?

A: The AQUABION® brochure lists the various sizes and specifications for each model. The rule of thumb is that a 1-bathroom house requires an AQUABION® S-15 ½" (max. flow rate 400L/hour). However, if you have a pressurised water system, 2 or more pumped showers or 2 or more bathrooms, we recommend you install an AQUABION® S-20 ¾" (max. flow rate 1500L/hour) but there are a number of variables that affect which is best suited. Consult your plumber, an AQUABION® Dealer or call us directly for advice on this.

Q 11: My neighbour has a water softener and she tells me that she has no Limescale now on her shower door. Is that not better?

A: A water softener works by ion exchange like AQUABION® but is exchanging Sodium (from Salt) for Limescale which is in some ways replacing one problem with another i.e. higher Sodium levels in your water in addition to the other disadvantages of water softeners – depending on the water quality from your water supplier (see Q 13 below).

Q 12: But if I still have Limescale in my water, won't I be drinking it? I thought the whole idea was to remove Limescale from the water?

A: Limescale is basically Calcium and Magnesium - minerals which are good for your bones & teeth. It's just bad for your plumbing in its aggressive form. Water also tastes better with minerals – hence Mineral Water from the shops.

Q 13: I already have Limescale build up in my appliances. Can AQUABION® do anything for this?

A: Yes, fitting an AQUABION® can slowly reverse some of the the build-up, gradually breaking down the hard Limescale encrusted on your appliances' heating coils and internal pipe work in combination when enough water is flowing to support the erosive process.

Q 14: I have already paid for and installed a water softener; is it too late or costly for me to switch to AQUABION®?

A: If you have a water softener you are spending money annually maintaining it (topping up salt levels, electricity, higher water bills and servicing it). For the same annual cost (when you spread the one off cost of any AQUABION® over its life span of approx 7 – 8 years) you will have all the advantages of AQUABION® and none of the annual costs of a water softener.

Q 15: What are these trademarks of water softeners?

A:

- a) Drinking water: Water softeners use salt in the process to soften the water which results in Sodium being added to the water. If you are using a water softener you should not have that softened water supplying your drinking water tap. You should have a separate untreated mains supply for your drinking water because there can be health risks associated with the high Sodium levels in softened water.
- b) Water softeners also remove healthy minerals from the water e.g. Calcium
- c) You have to buy, carry and store bags of Salt to top up the water softener regularly which can amount to up to €100 p.a. or more – depending on your local water quality.
- d) You may have to service it every year or so that it does not become contaminated.
- e) Very high Sodium level in softened water can eventually cause damage to copper pipes and cause pitting and leaks.
- f) Damage to the environment – Salt based water softeners self regenerate i.e. they flush out water with higher Sodium and Potassium levels. This is an additional cost. In addition, this water gets recycled at municipal water treatment plants raising the level of Sodium in all of our mains water supply. This has already led to some bans and/or restrictions in some states in the USA (including Texas, California and Massachusetts).
- g) Water softeners can also interfere with septic tanks as the high Sodium levels can destroy good bacteria and diminish the drainage field's ability to absorb excess water should a tank overflow with backwash.

Q 16: Where in the house should the AQUABION® be installed?

A: Ideally, fit it to the water mains where it enters your home, either in the garage with pressure coming from your water supplier or underneath the kitchen sink when you have an attic storage tank. The AQUABION® unit does not take up much space in your kitchen cabinet, unlike a water softener, and is easily installed.

Q 17: There is not enough room under my sink; can I fit the AQUABION® outside my house?

A: Yes, but it must be frost protected – insulated - on the water mains either in a sealed service box below ground or lagged if above ground e.g. in a garage or shed. Ideally you would fit it inside the house.

Q 18: Can I install an AQUABION® in the attic?

A: Yes, but you may not be treating all of your water. Consult a plumber on where best to fit it or call us at 051 872615.

Q 19: Can I install an AQUABION® myself?

A: We would recommend the hiring of a qualified plumber. We have included an installation guideline within every AQUABION®, read the instructions carefully.

N.B Always fit the bonding wire included, even on plastic pipe where short lengths of copper pipe must be added to take the bonding contact strips (see instructions).

Q 20: I see that you have smaller units e.g. AQUABION® Mini – S for showers. Why would I need one for my shower and not need one for the rest of my house?

A: If you only have a flat / apartment with an electric shower i.e. no hot water tank, no other appliances that heat up water and wanted a solution for your shower only.

Q 21: I'm a plumber looking for a Part L compliant solution for Combi-boilers; can I use AQUABION®?

A: Yes, AQUABION®, as a galvanic scale inhibitor, is recommended under Part L. The AQUABION® D-10 is the minimum size we would recommend for protecting a Combi-boiler but we always advise whole-of-house protection is preferable using either an AQUABION® S-15 or S-20 depending on circumstances.

Q 22: My water is supplied by a private well; can I use an AQUABION®?

A: Yes, but as with installing water softeners you must get your water tested first to see what exactly is the problem with your water supply. AQUABION® is designed to treat Limescale only. If you have other issues with your water such as high iron content (above 0.2mg/L), you will need suitable filtration or iron pre-treatment. High Iron levels in your water may destroy the AQUABION® and will invalidate the warranty. This advice applies to water softeners as well as AQUABION® as neither removes Iron from the water to potable standard. If you have bacteriological contamination, e.g. Cryptosporidium or E-coli, you will also need a suitable filter for your drinking water which we can supply separately. Call us direct at 051 872615.

Q 23: I have a septic tank; can I use AQUABION®?

A: Yes, AQUABION® won't interfere with the proper functioning of your septic tank, unlike salt-based water softeners (see above).

Q 24: Does installing an AQUABION® affect the pressure of the mains water?

A: Not to any noticeable degree i.e. 0.01bar reduction.

Q 25: Does the AQUABION® have to be fitted in any particular direction?

A: No, but vertical is preferable- if a filter is installed AQUABION® will be installed AFTER the Filter.

Q 26: I have heard of limescale treatments that uses Polyphosphate dosing; how does AQUABION® compare to these?

A: Systems that use Polyphosphate dosing also require a regular top up with Polyphosphate crystals/liquid and maintenance, which can make them more expensive than AQUABION® in the medium to long-term. They may also become less effective over time e.g. dosing valves prone to clogging.

Q 27: I have heard of limescale treatments that use magnets and also ones that use electrical pulses; how does AQUABION® compare to these?

A: Magnetic and electrolytical systems are often incorrectly put in the same category as galvanic systems such as AQUABION®. Some of these may provide a short-term single appliance solution but are much less effective for whole-of-house limescale treatment. Aggressive limescale reforms in the water downstream of these units over time unlike the permanent change affected by AQUABION®.

Q 28: How do I know when I need to change my AQUABION®?

A: The average life span is 7 – 8 years, at which point the reaction within the AQUABION® will have been reduced to a level that is not as efficient any more. At this point you will begin to see again more hard scale forming on your kettle or your shower heads and this will tell you that you need a replacement.

Q 29: What determines how long it will last?

A: The lifespan of the AQUABION® depends on the volume of water that passes through it, the hardness of the water and also by the conductivity and PH of the water.

Q 30: Is AQUABION® only suitable for the home?

A: No, there are commercial and industrial sizes also available. For further information on commercial and industrial requirements please contact us directly on 051 872615.

Our brochure also contains more technical information on the AQUABION® range. For a copy, please log on to www.hwl.ie/aquabion or contact Highway Wholesalers directly. Further information available from; www.aquabion.com

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