

WATER-KING THE SOFTENER ALTERNATIVE AT RADISSON SAS.



Simon Pearson is Chief Engineer of two Radisson SAS Hotels, one at London Stansted Airport and the other in London's Portman Square. The Portman has a conventional ion exchange water softener; Stansted Airport relies on Water-King physical water conditioners. Simon is particularly well placed to judge the merits of the two methods of treating hard water.

The Portman has 272 bedrooms and uses about 40 tonnes of salt per annum for softening, at a cost of £6,800. Servicing adds a further £1,800 bringing the annual cost to £8,600. For cleaning and sterilising the shower heads, there is a rolling three monthly programme of removal, soaking in Sulphamic Acid and replacement.

The Stansted Airport hotel has 500 rooms and uses 48,000 cubic metres of water per annum with a hardness of 315 ppm calcium carbonate equivalent. It has two Water-King WK4 units installed on the 108mm boosted cold water service and a Water-King WK3

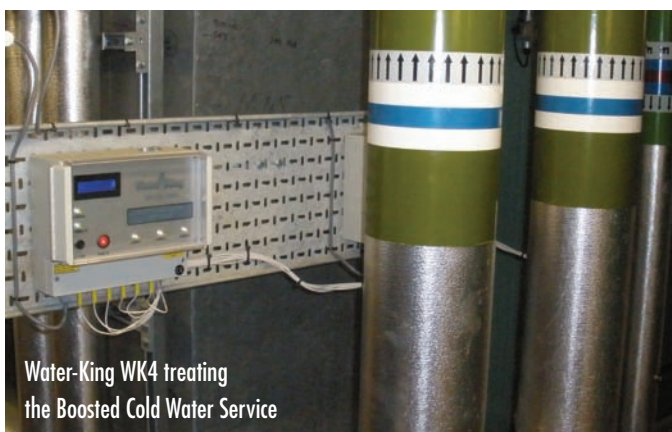
on each of the 54mm returns to the Hoval plate and frame heat exchangers. The total cost of these units when installed was £5,100. The annual running costs total £40.

Simon opens the heat exchangers annually for inspection and describes them as "spotless - the Water-King keeps them completely scale free".

The only scale related issue is with the shower heads. The Portman uses the same cleaning regime, so the costs at Stansted are comparable. However, occasionally towards the end of a cycle, some shower heads show a slight marking from scale encrustation. Simon describes the problem as purely "aesthetic". The showers work normally, the scaling is very light but it is visible so it cannot be described as perfect.

Given the cost and inconvenience of installing conventional water softeners in Stansted (an estimate of £45,000 has been received and the projected salt and

maintenance costs total £15,600), Simon is content to live with the minor aesthetic problem of the shower heads. He is extremely impressed by the cleanliness of the heat exchangers and grateful for the reduced environmental impact of the Water-Kings.



Water-King WK4 treating the Boosted Cold Water Service

CONTINUING PROFESSIONAL DEVELOPMENT

Physical Water Treatment is increasingly specified by Consultants but there is still considerable uncertainty about how well it works, how reliable and how effective it really is. At Lifescience we are specialists in this technology and have conducted a considerable amount of original research in the field. Some of this is published but much of it unpublished. Our face to face presentation gives us the opportunity to talk frankly about the best (and worst) of this technology and where it can be used effectively. It provides all the information a consultant needs to specify with confidence and contractors to install correctly.

The course has been assessed by the Chartered Institute of Plumbing and Heating Engineering as part of their Professional Development Programme. It has also been separately assessed by CIBSE and is included in their register of CPD providers. Lifescience is the only CIBSE and CIPHE accredited provider of CPD in the field of physical water conditioning.

There are a number of published articles available on our website www.waterking.co.uk which cover some of the ground and provide a flavour of the talk.

For further information and to arrange a date, please contact Jonny Seccombe or Darren Stacey on 01608 811707 or email sales@lifescience.co.uk



What is the main chemical constituent of Hard Water?

Is it:-

- A. Calcium
- B. Calcium Carbonate
- C. Calcium Bicarbonate
- D. Calcium Chloride



Can you answer this question, the first slide of the CPD? Most people get it wrong! To check the correct answer, call our technical hotline.

UK LEADS THE WORLD IN PHYSICAL WATER TREATMENT

Now that Part L has highlighted the energy losses associated with limescale in hot water generators, the treatment of hard water is no longer an optional extra. Water softeners may still be a "luxury" item of plant but an effective physical water conditioner is actually a necessity. The UK is the first country in the world to legislate in this significant area of energy conservation. Fortunately, the UK also leads the world in the development of new technologies for water treatment.

The mechanisms of physical water conditioners are less understood than conventional softeners but experience in the UK has highlighted a number of key factors that can either enhance or reduce performance. Passivity is now recognised as a major problem with corrosion inducing systems while pumps, cisterns and water heater design all have a major bearing on where water conditioners are located and how effective they are going to be. Many experts subscribe to the tactical approach of locating a water conditioner as close as possible to where the scale is forming. This thinking is replacing the traditional approach of using one big expensive piece of equipment located on the cold inlet to the building.

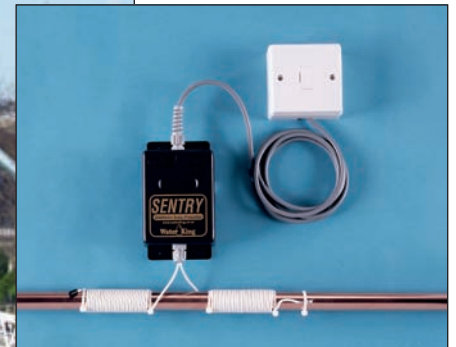
REVISED WATER-KING SPECIFIERS GUIDE PUBLISHED

Lifescience Products has revised the widely used Water-King Specifiers Guide. It offers expert technical advice, installation guides and product information in a concise and easy to use leaflet. The Specifiers Guide is a must have item for consultants and contractors involved in specifying or installing hot water systems. You can phone us at 01608 811707 to mail you a copy or download it directly from our website at www.lifescience.co.uk.

Cisterns, booster sets, circulation pumps and water heaters all have an influence over



The iconic "Gherkin" at 20 St Mary Axe in the City of London has sixty six point of use water heaters, each protected from limescale by a Water-King Sentry physical water conditioner.



water conditioner performance. To choose the correct unit and to specify where it is to be installed it is important to have a schematic drawing of the domestic water services with line sizes, and to know what type of water heater is to be used.

Whether it's advice on schematics, technical queries or problem sites, let us do the hard work for you. We are able to accept schematic drawings in CAD or PDF files or by post, and can give an instant response.

Specifiers Guide

Water Treatment

Water Conditioner & Electronic Water Softener

WK1

WK2

WK3

WK4

Introduction
Water-King is a non-invasive water conditioner that inhibits scale formation, removes existing scale deposits and partially softens hot water. It requires no plumbing and there is no need for ongoing maintenance nor servicing.

The technology explained
Water-King uses pre-programmed micro-chips to transmit pulses of electrical charge into the water at varying frequencies and amplitudes. These "signals" cause some of the salts in the water to form sub-microscopic clusters. When the water is then heated, the clusters act as nucleation seeds upon which the calcium carbonate (limescale) precipitates. Instead of the hard encrustations on pipes and heating elements that normally occur when water is heated, the precipitation takes the form of tiny calcium carbonate crystals that float suspended in the water. These invisible fine crystals are carried away with the flowing water.

Applications
Field trials conducted over the past fifteen years have demonstrated the effectiveness of Water-King in most applications where conventional water softeners would normally be used. Water-King is less expensive to install and maintain than ion exchange softeners. In larger applications it is also less expensive and simpler to install than inline magnetic and electro magnetic systems. Water-King requires very little space, no special plumbing, no water connection nor access for the supply of salt and it's storage. There is no head loss nor any additional corrosion problems.

How Is the Water Softened Without Removing the Calcium?
The clusters created by Water-King stimulate the conversion of more of the dissolved calcium bicarbonate in the water into crystals in suspension than would otherwise occur. The resulting hot water, with less calcium bicarbonate, is now chemically softer. Water-King is the only electronic device of its kind that has been proven by independent laboratory tests to produce softer water.

Drinking Water
Unlike ion exchange softened water, where minerals are removed and replaced by sodium, Water-King treated water is suitable for drinking. There is no need for a separate drinking water supply, no health risks and no salt effluent. The problems of head loss and increased corrosion do not occur.

Removal of Existing Scale Deposits
Water-King is very effective at eroding existing scale deposits from water heaters, calorifiers and pipes. Decalcification occurs within a few weeks. The scale breaks away in small plates as it loses adhesion to the surface that it is encrusting. In existing systems that are already badly scaled it may be worth considering fitting a filter on the hot flow from the water heaters to protect blending valves and other appliances.

Lifecycle Costs
Running costs of all units is less than £15.00 per annum. The design life is in excess of 25 years with a 5-year manufacturer's warranty. Water-King has a no quibble, 100-day money-back satisfaction guarantee, which is extendable, subject to negotiation.