

At last - water softeners officially recognised for energy saving benefits

Domestic water
treatment becomes
mandatory with all new
boiler systems

From 6th April 2007 it was necessary for all households, fitting a new boiler in hard water areas, to treat the feed water to reduce the impact of scale in heating systems. New build homes also came under this ruling published as part of the revised building regulations.

This was excellent news for the domestic water treatment industry as well as for consumers. For many years the domestic water treatment industry has trumpeted the huge energy savings and economies to be gained out of improving water quality in the home. Sadly, in the past, this message has

often failed to influence the public perception of the real value of water softeners, conditioners and inhibitors. With Government now supporting domestic water treatment it is hoped there will be a substantial increase in awareness about the importance of water quality. Currently only 3% of UK homes, in hard water areas, have a water softener.

The revised building regulations have come about through discussions between the water treatment industry and representatives of the Office of the Deputy Prime Minister, Sustainable Energy Initiative. This has been at the top of the Governments agenda since 2003.

Demand for water is forever increasing with 56% being used by households. Homes contribute 27% of the UK's carbon dioxide emissions through gas and electricity use. 70% of the country suffers with hard water resulting in scale and scum problems. It is estimated that a water softener will save an average family over £200 a year in energy and a reduction in product usage such as washing powders, soaps, shampoos, conditioners etc. It has been proven that a 1mm layer of scale can increase energy costs by 7.5%. The continued build up of scale on heat transfer surfaces can escalate this figure considerably eg. 12mm layer = 70%. In addition servicing and replacement costs increase proportionally. It is therefore hardly

surprising that the Government now views hard water as a major contributor to energy wastage.

Compliance Guide

The new regulations are set out in the 'Domestic Heating Compliance Guide' (published May 2006 by NBS for the Office of the Deputy Prime Minister). For those requiring more technical information, see article on Page 4.

UK and European trade associations formed

Aqua-Nouveau is delighted to be one of the founder members of a new UK trade association dedicated to water treatment. The UKWTA (United Kingdom Water Treatment Association) has a remit with specific aims to raise the profile of domestic water treatment to the home owner.



The UKWTA in turn has been involved in assisting in the formation a new trade association for Europe

In the UK our previous affiliation, within the wider water industry, had proved an uneasy alliance. With the domestic market changing so rapidly key players realised the need for a more cohesive approach to what was going on. The formation of the UKWTA was therefore a logical move.

The new organisation will embody the four main product areas - chemical products, drinking water systems, physical conditioners and water softeners. The association will also incorporate representation from appliance manufacturers, installers, merchants (wholesalers) and the utilities.

One of the fundamental problems of our industry is still the perception of the products, technology and benefits by consumers and the trade. We are therefore delighted that (cont. page 2)



The latest KINETICO 2020c water softener shown in an under sink location.



swet
INDUSTRY SPONSOR

See article on page 3

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there is to be a huge emphasis on providing information and helpful advice. Products will be performance tested and rated enabling customers to make an informed choice. There will naturally be a focus on energy efficiency as well as communicating the considerable importance of the new building regulations and British Standards. It is intended to publish fact sheets, a newsletter and a magazine. A new web site is now live at: www.ukwta.org

On the internal front there will be a drive to increase the knowledge, understanding and competence of operatives in the water treatment industry through the development and delivery of appropriate training, Standards and Codes of Best Practice.

In October 2008 the UKWTA along with AquaBelgica, AquaDenmark and UAE (the French trade association) registered the European Water Treatment Association - EWTA, with the relevant authorities in Brussels. It is hoped this organisation will rapidly become an international body focusing on the benefits, opportunities, threats and challenges of the POU / POE water treatment industry.

Testing time for scale reducers / water conditioners

When looking at methods to reduce scaling problems many householders are tempted to consider a scale reducer. Various magnetic and electronic technologies have been around for years including units described as 'wrap round wire' devices. These systems do not soften water but can assist in the control of scale deposition. Whereas water softeners have clearly defined and recognised performance standards, the 'success' of scale reducers is somewhat 'hit and miss'. This has led to significant bad press for some manufacturers. In addition, some product advertising has

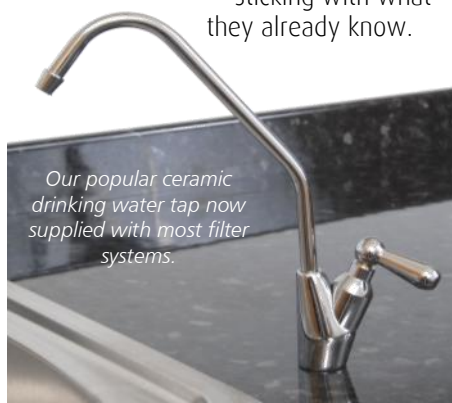
attracted the attention of the Advertising Standards Authority.

Currently there is no appropriate method of assessing scale reducers. Our trade association, the UKWTA, fully appreciates that potential customers should be able to access and accurately quantify the performance of scale reducers particularly related to price and competitive products, such as water softeners. However, equally important is overcoming the misunderstanding that exists between the actual benefits delivered and what the customer is expecting. The results from some scale reducers can be very disappointing. Aqua-Nouveau currently do not believe these products to be worthy of recommendation.

The UKWTA will be bringing together leading academic experts to develop a test protocol suitable for assessing the performance of all types of limescale reducers, irrespective of the technology employed. Aqua-Nouveau will be participating in what occurs out of this.

Plumbed-in filters and RO alternatives perplex bottled water and jug filter users

Most consumers turn to bottled water and jug filters when water 'out of the tap' is considered unpalatable. Those looking for a more permanent solution in the home have found they are faced with multi choices in water quality and a bewildering range of products and prices. Many are so confused they end sticking with what they already know.



Our popular ceramic drinking water tap now supplied with most filter systems.



A KINETICO RO system showing membrane module & separate pure water storage tank in under sink kitchen cupboard.

This is very disheartening when there are strong environmental and economic advantages of systems that can be plumbed-in. Most will fit easily under a kitchen sink and operate either through an attractive third tap (such as the one shown below - see separate leaflet) or via a tri-way tap. This makes an in-line filter or purifier very easy to use. Water is available in virtually unlimited volumes. This gives a high quality of water for cooking and baking as well as all aspects of drinking.

The main area of misunderstanding is the use of the term filter and purifier. Many view the term as meaning the same thing. This is not so!

Filters usually refer to products utilising activated carbon. All filters, from the simple jug filter to in-line systems, are based upon this media, which can improve most of the aesthetic aspects of water including taste, colour, odour (chlorine) and the removal of particulate matter. The result is a highly pleasing and fresh tasting water.

Purifiers usually refer to reverse osmosis (RO) technology. These systems use a membrane to provide an almost pure H₂O (95 - 97%) for drinking. Unlike filters the impurities are washed away down the drain. RO water is in a league of its own. The water is amazingly thirst quenching. Ice cubes can look like pieces of glass. RO is particularly popular in supplying water to ice making equipment and American style fridges.



This tri-way tap incorporates a separate drinking channel up through the spout alongside the hot and cold water. One lever controls the hot and cold water. The lower controls the drinking water.

January 9th - 'BBC South Today' reports on child with severe eczema which completely vanishes when a water softener is installed in family home

NHS funds water softener eczema trials

For more information go to: www.swet-trial.co.uk

As SWET comes to an end it is hoped that softened water can be officially recommended for atopic eczema in children

Since March 2007 Nottingham University, funded by the NHS and the water treatment industry, have undertaken a study (SWET - softened water eczema trial) to assess how the installation of domestic water softeners, in hard water homes, may improve atopic eczema in children. In hard water areas 15% of children, up the age of sixteen, are effected by varying degrees of atopic eczema.

It has been known for many years that soft water can reduce inflammation and itching both for eczema and psoriasis sufferers. Often children visiting a soft water area, such as Cornwall, would notice considerable skin improvement. This would then deteriorate after returning from holiday.

The cost to the NHS for emollients, steroids and other treatments runs into £millions and is on the increase. The current view is that softened water may not just cut medical costs but give a better quality of life to children with eczema.

The Centre of Evidence Based Dermatology, at Nottingham University, confirmed a hard water link with eczema in 1998. A report was published in *The Lancet* entitled, 'Epidemiological study linking water hardness with eczema prevalence'. Research in Japan gave similar results.

In 2002 the university research team and KINETICO undertook a crucial pilot study using water softeners in the immediate locality. This attracted positive media coverage and consumer interest.

SWET concludes in September 2009. It

has involved children in several hard water regions across the country. Over 300 children between 6 months and 16 years old have been evaluated over twelve week periods.

The setting up and operation of this study has involved many specialists both in the operation of the trails and evaluation of data. The final analysis will answer the following questions:

1. Does exposure to softened water improve the symptoms and severity of eczema?
2. Does softened water improve quality of life for patients and their carers?
3. Are water softeners a cost effective treatment for children with atopic eczema?
4. How quickly do the benefits of softened water become evident and how quickly are they lost once treatment is stopped?
5. Do some participants show a marked improvement in their eczema?

The results are looking good and certainly mirror the earlier pilot study. The final report should be completed in the spring of 2010. The water treatment industry very much hopes that what they have believed for many years will then become 'official' - softened water becoming recommended for both medical and energy saving benefits.

KINETICO –First to gain BS accreditation

KINETICO are outclassing their competition. Their products are the first in the water treatment industry to have passed **British Standard EN 14743:2005** which assesses water treatment systems within buildings including the testing of water softeners for performance and safety. Stringent independent tests including brine efficiency, flow rate and the quality of the softened water produced, prove that KINETICO equipment will

perform to the exacting standards published by the company.

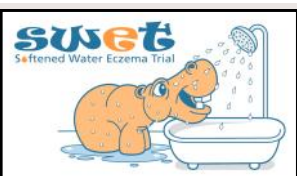
Website is packed full of data & information

Aqua-Nouveau's web site has now become a focal point of business with a specific emphasis on 'providing information' about domestic water treatment. Few home owners have general knowledge of the subject and even less are able to evaluate and compare products, particularly drinking water systems.

The site (www.aqua-nouveau.co.uk) has provided the company with a tool with which it can direct potential customers, giving them immediate access to all product literature and to a series of educational 'fact sheets'. The following are just a few of the 20 + available:

1. *Getting to know Aqua-Nouveau.*
2. *Reverse Osmosis purified drinking water systems.*
3. *Improving drinking water and the products available.*
4. *Drinking water system comparison chart.*
5. *Is installing a water softener really worthwhile.*
6. *Softened water and health.*
7. *Hints and tips for the first time user of softened water.*
11. *Softened water and aluminium boilers.*
12. *Softened water and septic tanks.*

The above are shown as thumb nail pdf files and can be downloaded and printed at any PC location. The site also has this newsletter and guidance notes on all the services offered by the company including installation and servicing.



Aqua-Nouveau is delighted that their logo design for SWET has been adopted by the University of Nottingham.

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Contact us for further information



Water treatment and the new 'Domestic Heating Compliance Guide'

A technical insight into the new building regulations and related British Standard

As highlighted on page 1, there is a requirement for all homes, fitting new boilers, to integrate water treatment protection as part of the installed heating system. For those requiring a more technical insight the following will hopefully be of interest.

The guide provides guidance on the means of complying with the requirements (of Part L_a) for conventional space heating systems and hot water systems in dwellings. It comprises four self-contained fuel-based sections and five specialist technology-specific sections. Each fuel based section addresses all the requirements applicable to primary and secondary space heating and hot water technologies for gas-fired, oil-fired and solid-fuel systems. The specialist technology-specific sections provide further guidance on the minimum provisions for specialised space heating and hot water technologies (community heating; under floor heating; heat pumps; solar water heating and micro-CHP units).

System preparation and water treatment

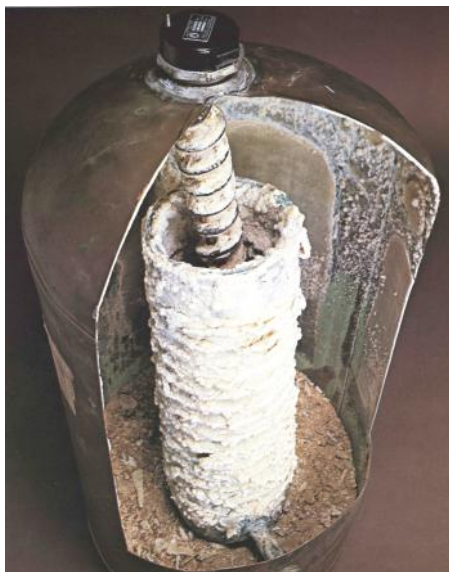
The 'Compliance Guide' states the following:

'Central heating systems should be thoroughly cleaned before installing a new boiler. After installation, water treatment should be added to the primary circuit to minimise the risk of corrosion and the formation of scale and sludge, which could impair the efficiency of the heat exchanger. Reasonable provision would be to follow the guidance on how to prepare and commission systems given in BS7593. Installers should also refer to the boiler manufacturer's installation instructions for appropriate treatment products and

special requirements for individual boiler models'.

In respect of the above it should be noted that BS7593 (revised 2006) states:

'To minimise the likelihood of corrosion, scale and sludge formation, the system water should be treated with an inhibitor' - this is usually a chemical inhibitor. BS7593 then goes on to highlight the cleaning procedures prior



A typical indirect hot water cylinder showing excessive levels of limescale.

to adding an inhibitor as well as future maintenance.

The 'Compliance Guide' also states:

'In hard water areas where the total hardness exceeds 200mg.l / ppm, reasonable provision would also include water treatment of the feed water to water heaters and the hot water circuit of combination boilers to reduce the build-up of limescale.*

In North Hampshire and the Thames Valley water hardness is usually around 300 to 350mg.l / ppm* of carbonate hardness. This highlights that the area has a much higher level of water hardness than in some other regions. Therefore the levels of problems, likely

to be caused by scale, will be proportionally high. BS7593 goes into considerable detail on the subject of water hardness (as well as corrosion) and its affect on home heating systems. It makes profound reading.

The water treatment required would involve either a physical conditioner or, more preferable, a water softener.

Concerns about corrosion in aluminium boilers

We are one of the few countries in the world where aluminium is used in the construction of boilers. Naturally soft and softened water have the propensity to corrode aluminium. Particularly with the latter, the advice from aluminium boiler manufacturers has been to bypass or remove water softeners. This uncompromising criteria has caused upset and confusion with many softener owners. Most do not want to loose their valued appliance or be faced with having the expense of replumbing their heating system.

We believe this to be totally unnecessary. Aqua-Nouveau would like to make it clear that aluminium boilers can be safely used in homes with a water softener as long as an inhibitor is used. Alternatively, there are boilers available that do not use aluminium. BS6798:2009 states:

'Waters supplied via a base exchange resin softener have an increased potential for corrosion, especially in central heating systems containing aluminium components, and if they are to be used in any central heating system a corrosion inhibitor specifically formulated for the purpose should be added and properly maintained'.

Please refer to our Aquafact sheet 11 for further information.

* ppm (parts per million) and mg/l (milligrams per litre) are equal measurements.

Useful web sites:

www.defra.gov.uk (more details)
www.bsi-global.com