



## From snail's pace to rapid pace

Jonny Seccombe, chairman of Lifescience Products, looks at the history behind the certification of physical water conditioners



A rapid scaling test is carried out with the help of a Lifescience Water-King device, an electronic physical water conditioner that inhibits scale formation in hot and cold water services and removes existing scale deposits

Back in the late nineties the rate of progress towards a UK recognised performance certification for physical water conditioners (PWC's) was snail like; in the noughties it perceptibly slowed. More recent initiatives might be changing the pace.

Some people in the industry may consider it surprising just how widely accepted PWC's have become without any form of performance certification.

From inexpensive "in line" dosing systems to more costly and sophisticated electronic or media based treatment systems, they've widely replaced traditional types of hard water treatment. Perhaps ironically this may in part be due to the introduction of new regulations.

The publication of the Part L recommendations in 2006 highlighted a need to treat hard water beyond the desire to avoid unsightly scale deposits on taps and surfaces.

### Limescale accumulation

It recognised for the first time that energy was wasted by allowing heat exchangers to scale up and established a need to treat hard water "to avoid the accumulation of limescale".

This loosely worded phrase encouraged existing technologies, none of which were performance certified in the UK, to be installed in hard water areas. It is obviously impractical and environmentally undesirable to use conventional salt based softeners to generate energy savings so PWC's in their various forms became the technology of choice, in spite of the lack of certification.

In the early noughties there was some flirtation with the German DVGW 512 standard, but fortunately sense prevailed as it was very easy to show that this protocol did little to reflect actual performance of products in the field over any realistic timescale.

In due course this fact was recognised even in Germany where recent events concerning motor exhaust transmissions have demonstrated how much variation there can be between laboratory certified and actual field tested products.

With increasing interest being shown in some form of performance certification from bodies such as the Energy Saving Trust, there is a new focus in the UK on getting something to work which actually has practical applications.

It may well be that a protocol called the Rapid Scaling Test (RST) could merit closer examination. Rather than trying to replicate normal water usage in a residential home over an extended timescale, the RST uses about a litre of water tested over a 23-hour period and compares scale accumulation on a standard water heater sheath with and without treatment by a PWC.

The test is repeated five times and the mean scale accumulation and standard error is then calculated. Using a single rig the whole test can be completed in a couple of weeks. Using multiple rigs, which are inexpensive to build and maintain, the test timescale can be substantially reduced.

### Laboratory testing

As well as getting quick results, the advantage of the RST is that only about 15 litres of water is needed to conduct the test, so different sources of water from various parts of the country can be collected and sent to the laboratory for testing.

PWC technology is complex and can be affected by many minerals other than calcium that are present in the water supply. Results can vary according to water quality so being able to test against a range of waters is a huge advantage when trying to relate laboratory results with actual field performance.

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