

The IAPMO IGC -335 RAPID SCALING TEST
A Performance Test Protocol for
Physical Water Conditioners
“No Salt Softeners”

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Whilst alternatives to conventional salt based water softeners, Physical Water Conditioners (PWC's), have been widely used in the UK and Europe for many years, their take up and adoption in the USA has been very slow. This is in spite of the obvious need for such water treatment systems to reduce chlorides in the waste water that is generated by conventional ion exchange softeners. (IES) For many years the established suppliers of IES have seen no advantage in supporting alternatives such as PWC's and have actively engaged in discouraging their adoption with such epithets as “Smoke and Mirrors”, “Snake Oil” etc. They have been helped in their endeavours by a complete lack of any US performance standard against which PWC's could be measured.

In 2007, IAPMO and WQA formed a joint committee with Industry representatives to develop a performance standard with the objective of ultimately delivering it as an AINSI standard. At an early stage it was decided to adopt the German standard DVGW 512, which has since been discredited, and to modify it for use in the USA. Over a period of ten years this standard has been modified, it has been made significantly more complicated and expensive, and, because it uses artificial instead of natural water, is no longer being promoted by those in the Industry.

The IAPMO IGC-335 has recently been ratified by the IAPMO Code Committee. It enables performance testing of PWC's to take place for the first time using a US performance standard. The protocol is based on the “Rapid Scaling Test” which was developed in the UK in the late nineties. It uses a small volume of water which is heated by an electric heater over 23 hours, after which the weight of scale on the heater is measured. Five such runs are made, with and without treatment by a PWC, and the mean reduction of scale is expressed as a percentage.

As the water required for the entire test is less than six gallons, different sources of water can be tested in a laboratory using a variety of PWC's, and this at very low cost, around \$2,000 per test. The temperature of the water at 180 °F and the use of an electric heater element means that the test environment is more demanding than that normally found in the real world. The results from the test can be viewed as being the worst possible case, with the expectation that real results will be significantly better.

Until now the lack of any performance standard for PWC's has discouraged water providers and utilities from recommending their adoption, in spite of the obvious benefit they can provide in reducing chlorides in waste water. IGC-335 can now release that

straitjacket and offers the opportunity to actively promote “No Salt Softeners” against a background of an IAPMO certified performance.