

BrightWater Environmental Scale Control Technology

Advanced Crystallisation Process (ACP)[™]

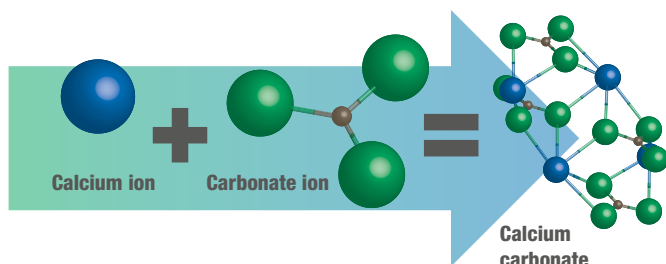


Building Services ACP Scale Control

The most advanced technology with a proven track record
of scale control with corrosion protection

Technology Driven

Non-chemical conditioning of water for scale control has been carried out for many years. It has been established that there are a number of ways in which this can be carried out with the most common being magnetic, electro-magnetic, electronic and electrolytic. With these technologies comes a wealth of jargon and explanations using words such as electrochemical, electrostatic and bi-polar etc.



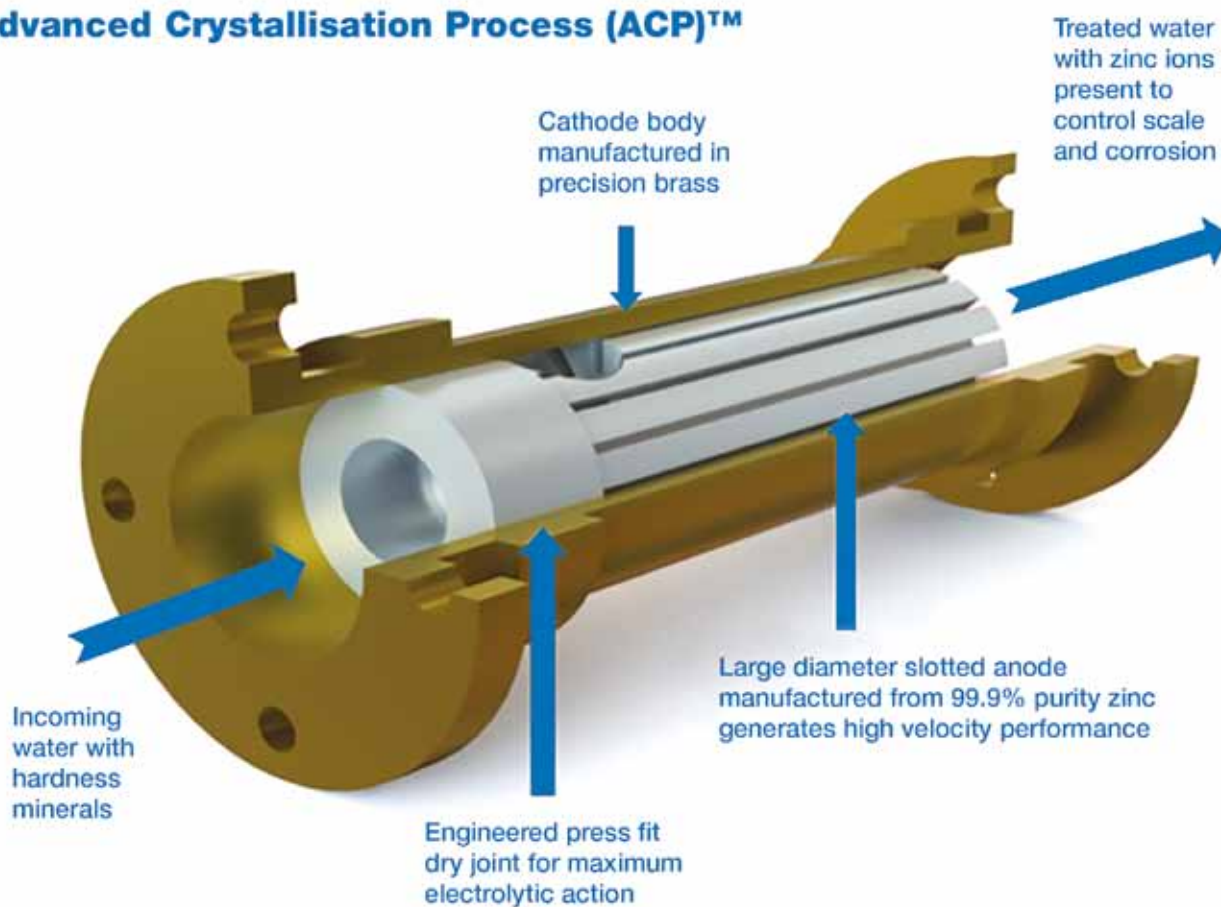
All Physical Water Conditioners endeavour to create the same non-chemical effect for control of the scale. They generate a seed / nucleation point that attracts the elements that produce scale and holds

them in suspension. This prevents the hardness minerals from forming on the internal surface areas of the water system, and are instead allowed to flow through the water system and out to drain.

At BrightWater our own chemists spent several years developing the Advanced Crystallisation Process (ACP). The system is based on what has already been scientifically proven in numerous independent studies that Electrolytic technology is the most effective. Electrolytic systems use cathode and anode – usually zinc – to release ions into the water stream. These ions act as the seed / nucleation point to keep the hardness minerals in suspension.

Zinc anodes have been used for many years in the marine industry for control of both corrosion and scale and it was with one of the world's largest marine anode manufacturers, MME, whom we worked with to develop the ACP. MME now also supply us with our own zinc anodes manufactured to 99.9% purity.

Advanced Crystallisation Process (ACP)TM



Features & Benefits

- Designed and manufactured in the UK
- Designed and manufactured to ensure optimum zinc ion release
- Effect is permanent
- Anode with an expected design life of over 10 years
- 10 year product warranty
- No power required
- Easy and low cost installation
- No maintenance required
- Controls both scale and corrosion
- Chemical free treatment
- Environmentally friendly
- WRAS approved
- Whole system protection
- No commissioning or control panel required
- No loss of conditioning effect over time

Specification: Hard Water Scale Prevention System

A scale control unit shall be fitted to inhibit the formation of scale in the water system.

The unit shall be self-activating and have no external power, BMS or control panel requirement.

The unit should be installed on the incoming mains water supply (before the CWST), where possible and sized on flow rate (line size is an acceptable alternative where flow rate is not known).

The unit will operate by means of an electrolytic design that generates an Advanced Crystallisation Process (ACP). To comply and ensure maximum treatment takes place the unit shall have a minimum zinc release rate of 50ppb at the manufacturers maximum flow rate.

The anode weight must be sufficient to last a minimum of 5 years at the manufacturers maximum flow rate whilst achieving the designated zinc release rate.

The pressure drop should be below 0.3bar at the manufacturers maximum recommended flow rate.

The unit shall comprise of a brass body fitted with a zinc anode. The joint between the Anode and cathode shall be factory sealed to ensure constant zinc release rates throughout the unit's operational life.

The unit is to be installed as per the manufacturer's recommendations.

The unit shall have a warranty of not less than 10 years.

The scale control unit shall be manufactured by Brightwater Environmental Ltd or equal and approved subject to a technical submittal demonstrating compliance with the above criteria.



Scientifically Tested and Proven



Multiple experiments, research papers and comparison testing have concluded that Electrolytic zinc release out performs all other tested methods of scale prevention in water services. BrightWater successfully demonstrated this to several government departments to receive a grant for final development of the ACP. The government funding also allowed us to work closely with the University of Surrey during final testing.

Reports for the ACP testing conducted on test rigs designed to simulate hot water service systems in a building environment clearly show significant reductions in the scale generated. Ongoing testing in progress at the University of Surrey is producing detailed profiles of the scale reductions in test rigs simulating varying site conditions such as temperature, water volume etc. This information will allow Brightwater's customers to better informed on the performance of the ACP for varying on-site conditions.

BrightWater's ACP Range

ACP Model	Pipe Size		Max. Flow Rate (litres/sec)	Connections	Dimensions		Weight (Kg)
	(mm)	(inches)			Length (mm)	Diameter (mm)	
ACP 15	15	½	0.3	½" BSP Female	150	26	0.40
ACP 20	20	¾	0.6	¾" BSP Female	190	47	2.20
ACP 25	25	1	1.2	1" BSP Female	275	52	3.75
ACP 32	32	1¼	1.7	1¼" BSP Female	320	67	7.40
ACP 40	40	1½	2.6	1½" BSP Female	350	73	8.80
ACP 50	50	2	4.2	2" BSP Female	425	81	13.70
ACP 65	65	2½	6.5	2½" PN16 Flange	427	185	29.90
ACP 80	80	3	10.5	3" PN16 Flange	512	200	39.00
ACP 100	100	4	18	4" PN16 Flange	512	220	62.00
ACP 125	125	5	28	5" PN16 Flange	516	250	124.00
ACP 150	150	6	40	6" PN16 Flange	516	285	119.00

Note: Pressure drop at maximum flow < 0.3bar

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