

Hydrosmart and Scale

The Treatment:

Breaks molecular bonds

Scale occurs when minerals and chemicals bond together to form large crystals. The Hydrosmart computer generates a series of resonance frequencies that **stops bonding**. This has 2 effects:

Scale Prevention

The minerals are no longer bonding together and the chemicals are no longer reacting with each other and so **no scale is created**.

De-scaling

The bonds of any existing scale crystals collapse and the **scale falls apart**.

The resonance frequencies remain active in water for several days and progressively break down any existing deposits, **de-scaling all equipment** connected to the treated flow within 3 months.

There are **no flow restrictions** as the resonance frequencies are transmitted into the flow, via antennae, wound in tight coils around the treated water pipe.

Treatment is **un-effected by temperature or flow rate** making it the ideal treatment for boilers, autoclaves, steam ovens etc.



Heat Exchangers onboard the Norsky & Norstream vessels after 4 months operation.
The right one treated with Hydrosmart, the left one with no treatment.

Effects:

Efficient Equipment

The elimination of scale, corrosion and chemical treatments from any equipment brings significant **savings in maintenance, repair, downtime and energy costs**. Water heaters require their thermostats to be turned down as they de-scale and work more efficiently.

No chemicals need to be used for de-scaling.

Boilers & Heat Exchangers

Because no scale is forming on the elements or heating vessels they are **more efficient** and much less energy is needed to heat the water. This can give up to 25% **savings on electricity** or gas bills.

Kitchens

De-scales Dishwashers, Steam ovens, Coffee machines, Urns, Kettles etc.

Glasses wash better with **no streaking**.

Water Softening means **less soaps** and detergents.

Homes

De-scales your Hot water services, Shower heads, Bathroom tiles, Dishwasher, Kettle, Sinks etc.

Removes watermarks on bathroom and kitchen surfaces as well as stains on glassware, cutlery and shower screens.

With the now very **soft water** only a fraction of the amount of soap powder, caked soap, shampoos and detergents are required.

Swimming Pools

Removes scale or other deposits that have built up in the pool's circulating, filtration and heating system.

The scale free pool heating systems and hot water systems **require much less energy**.

Removing all scale and bio-films **removes the growing base for algae**, fungi and moulds and ultimately bacteria

Dairies

De-scales Milk Shed Apparatus and Hot water systems with **no chemicals**.

Removes Bacterial breeding grounds.

Cooling Towers

The automatic de-scaling keeps the heat exchanging at optimum efficiency.

Bacteria are reduced by removing Algae, Moulds, Fungi and Bio-films.

UV Treatment Systems

In situations with highly mineralised water supplies UV treatment becomes ineffective as the tubes rapidly scale up or become covered in biofilm drastically reducing the UV light transmission.

By breaking down the large particles which prevent the UV light from killing bacteria that lie in their shadow the problem of **bacterial shielding** is solved.

The **water clarity** is improved which makes the UV system even more effective.

Blockages removed

The resonance frequencies remain active in water for up to seven days and progressively break down any already existing scale or bio-films. Generally the first bonds to be broken are those between the pipe work and the scale, which breaks off in lumps.

Irrigation Systems

The need for **acid de-scaling is eliminated** providing chemical free scale prevention and de-scaling of any irrigation or water system to which it is fitted.

Drippers are unblocked and so don't need to be replaced.

Dissolved iron no longer oxidises and mineral crystals remain in the flow in a particle size that will pass through any dripper, filter or spray nozzle bigger than 4 microns.

The now tiny bit sized minerals freely travel up into and through the plant as nutrition causing **improved plant growth**.

Algae, Fungi, Mould and Bacteria removed

The majority of algae and fungal formations need a substrate like scale or bio-film to form on or anchor to, or mineral deposits suspended in the water that are large enough to form on.

Hydrosmart removes the bio-films along with the scale deposits and changes the minerals in the flow into tiny sub 4 micron particles. Consequently the algae and fungal formations **lose their growing base** and cease to feed or breed.

Food Production

Scale, bio-film, algae, fungi etc are the breeding grounds for bacteria. Their removal results in exceptionally **low bacterial counts** at food production facilities and **prolonged shelf life** of the food products (from 10-17days).

Homes

Both **bio-films and stains** are trapped by the mineral deposits (scale) that builds up on our sinks, pipes, ponds, and drains. By removing the scale there is no longer any substrate for stains and bio-films to adhere to.

Shower mould disappears taking with it the airborne spores that can trigger asthma attacks. There is a significant reduction in fungal related skin problems such as dandruff and athlete's foot.

Applications:

Boilers

Heat Exchangers

Irrigation Systems

Cooling Towers

Swimming Pools

UV pre treatment