Solution to Scale Problems for Tims Dairy

Tims Dairy at Chalfont St Peter, Buckinghamshire is a producer of own label and contract packed cultured milk products such as yoghurt and crème fraiche. The factory is situated in an area of extremely hard water and the company was having problems with limescale build-up and milk scale build-up on the plate pack (heat exchanger). They recently installed a number of Hydroflow physical water conditioning units, in three locations, to control limescale from the water feeds and one before the heat exchanger on a milk line.

The result has been savings in chemicals, time and lost production associated with cleaning of the system. Prior to the installation of the C45 Hydroflow unit on the milk line, operators had to shut down the line twice a week and clean it with phosphoric acid. Now, cleaning is only required once a week and then half the amount of acid is needed.

The patented Hydroflow system is a physical water treatment system that prevents the build up of all limescale deposits, including calcium carbonate. Hydroflow works by emitting randomly-varying electric fields throughout the system. This enhances the precipitation of the bicarbonates, from solution to suspension, by introducing clusters of ions in the water to act as seed for suspended crystallisation. The resulting suspension, therefore, does not adhere to pipework or internal surfaces, but is merely 'washed away' with the flow.

No other physical water treatment system operates in the same way as Hydroflow; it offers specific advantages such as treating the water both upstream and downstream of the unit. Uniquely, it also protects standing water and is not dependent on water flowing past the unit. There have been a number of installations in which Hydroflow has solved scale problems for companies where other physical water treatment systems have failed.

Limescale build-up, in pipework, boilers and heat exchangers, is a common problem for business and industry. There has historically been only one way of addressing the problem - chemical water softening.

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The problems with this method have been numerous and include corrosion and the cost of adding salt to the softening reservoir and the resulting effluent having higher concentrations of sodium. Another problem has been that softening does not remove existing calcium carbonate build-up or completely stop calcium carbonate build-up. This has to be removed by acid or scraping - a further cost in terms of material, operator time and generator down time.

If the water supply to boilers is not conditioned, scale build-up increases fuel consumption and the boiler deteriorates rapidly through the external overheating of the plates and tubes. If water is softened (ie treated chemically) sodium carbonate hydrolyses to produce free alkali that is aggressive to boilerplates and tubes.

Hydroflow is easily fitted to existing and new systems and the low operating costs will deliver payback in a very short period of time. There are benefits for the environment too - lower fuel requirements and a reduction in sodium that finds its way back to the watercourse.

Commenting on the installation Peter Timotheou, Director of Tims Dairy said, ***"Hydroflow has proved effective protection against our biggest production headache. I was so impressed with it, that I've had the domestic version fitted to my water system at home."***

This is the product featured in this case study

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