

### **SCALEWATCHER™ REMOVES AND PREVENTS THE ACCUMULATION OF CALCIUM DEPOSITS DURING THE MANUFACTURE OF FINISHED PLASTIC PRODUCTS**

*Cleaner heat exchangers improve the production process for manufacturing PVC pipes*

#### **Scalewatcher™ cuts maintenance shutdowns at Solvay Draka**

The production of plastic pipes at Solvay Draka's factory in Enkhuizen requires large quantities of cooling water. This water, obtained from nearby Lake IJssel, has a maximum temperature of 20°C. The cooling water has to ensure that the process water remains at a constant temperature of 180°C, so it is extremely important to have a reliable heat exchanger. The problem of temperature fluctuations caused by calcium deposits affecting the heat exchanger is something that Solvay Draka can do without.

The Solvay Draka plastic factory produces finished plastic products including many PVC pipes. Solvay Draka is a part of the Solvay Group, an enormous concern made up of 400 companies throughout the world that employ more than 30,000 people and had a combined turnover of 8.7 billion euros last year. This group is active in the chemical, pharmacy, plastics and finished plastic products sectors. The company in Enkhuizen falls under the last category.

#### **Huge quantities**

This company's production process uses huge quantities of cooling water every day. Tubular heat exchangers have been installed in the production lines specifically to handle all this cooling water. These heat exchangers have to keep the process water at a constant 180°C. This is controlled by means of sensors that measure the temperature of the process water on the cool side of the tubes, thus regulating the amount of cooling water allowed to pass through the tubes.

#### **Heavy deposits**

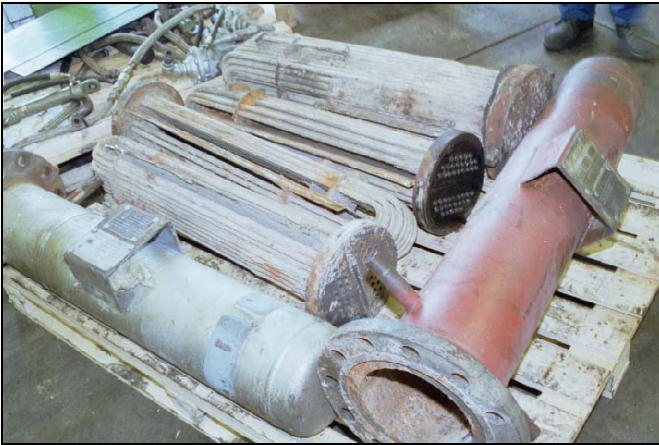
A problem associated with these large tubular heat exchangers is that they quickly become fouled. Research showed that this fouling was composed primarily of calcium and silicate deposits but also involved biological deposits and corrosion. These deposits are found mainly on the cooling-water side of the heat exchanger. It occurs because the dramatic difference in temperatures on either side of the tubes makes it easy for the substances in the cooling water to adhere to the exchanger. This fouling was requiring Solvay Draka to conduct regularly scheduled maintenance shutdowns of its production process – something the company wanted to prevent as much as possible.

#### **Good results**

To control or largely solve this problem, **Scalewatcher™** offered to install one of its electronic decalcifying devices within the production process. Solvay Draka agreed to a trial period of one year, and a **Scalewatcher™** model SW Industrial 2 EP was installed in the most heavily fouled cooling unit. This device was installed around a cooling water supply line having a diameter of 54 mm. Photographs 1 and 2 show the fouling on the tubular heat exchanger that had accumulated after a production period of about six months but before the **Scalewatcher™** was put into operation. Photographs 3 and 4 show the new tubes previous to their installation. Photographs 5 and 6 show how the heat exchanger looked after the trial period of fifteen months during which the cooling water was being treated with the **Scalewatcher™**. People at Solvay Draka were satisfied with the results. The maintenance staff confirmed that the exchanger now looked cleaner than it would have following normal maintenance service. The producer in Enkhuizen then decided to equip the cooling water facilities for all the other production lines with a **Scalewatcher™** Industrial model during the next maintenance activities.



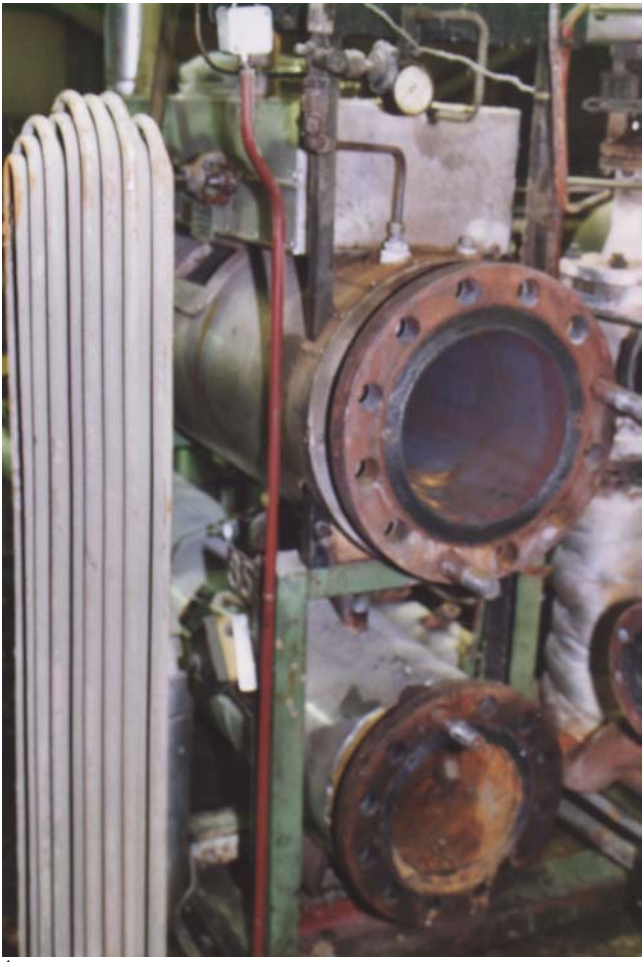
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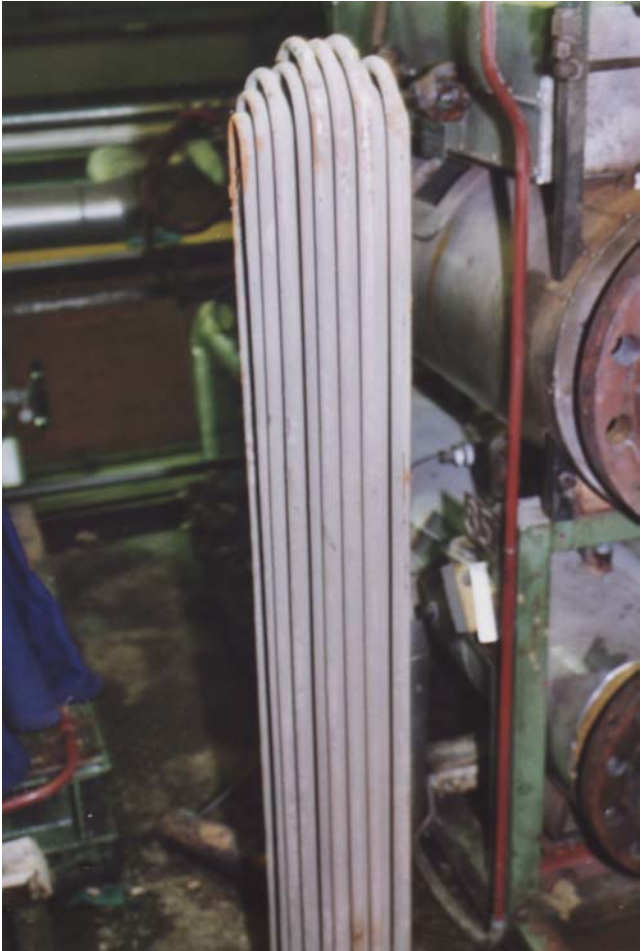
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