



Energy savings



Reduced emissions

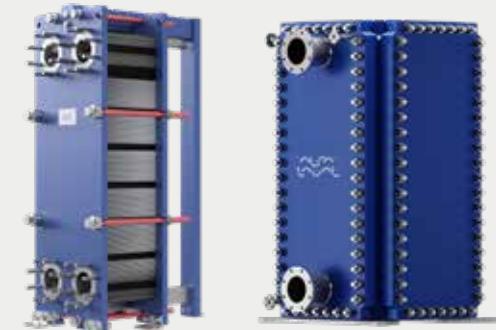


Improved uptime

Uninterrupted uptime between turnarounds

Case story – Dow, the Netherlands

During an inspection of the heat exchangers at Dow's Terneuzen site, technicians from Alfa Laval and Dow discovered that changes in operating conditions were causing excessive fouling in several units. Redesigning them to match the new process parameters effectively resolved the fouling issue and eliminated the need for maintenance stops between scheduled turnarounds.





The challenge

One of the plants at the Dow site in Terneuzen, the Netherlands, had been operating with Alfa Laval heat exchangers for many years. Over time, process conditions had changed, but the equipment had not been adjusted accordingly. The flow rates had been reduced, which caused excessive fouling and, in turn, lower energy efficiency.

Additionally, an undetected issue in the pump control software was causing negative pressure spikes, leading to cracking in heat transfer plates, posing a risk to equipment integrity and production continuity.

Our solution

In 2023, Alfa Laval initiated a structured service study at the Terneuzen site. The Alfa Laval team collaborated closely with Dow's staff and performed an on-site visual inspection of all Alfa Laval heat exchangers installed at the plant.

Several units were selected for detailed inspection, including physical checks and a Performance assessment where the current operating parameters were compared with the original design specifications. This revealed that most units were no longer optimized for their duties due to changed process conditions.

Alfa Laval redesigned the heat exchangers to match the operating parameters and reprogrammed the flow control for a duty where two units operated in parallel, effectively resolving the fouling issues. The pump software was also updated to eliminate the pressure spikes causing plate damage.

Implementation process

The service study involved:

- A visual inspection
- Selection of units for in-depth analysis
- Physical inspections
- Performance assessment comparing actual and design parameters
- Redesign of the heat exchangers to match the current operating conditions
- Software updates to resolve pump-related pressure issues

This structured approach allowed for targeted interventions without disrupting production.

Impact and results

Remco Harmse highlights several positive outcomes of the project:

"The service study generated a higher degree of awareness among Dow's engineers of the benefits of regular maintenance. They learned that fairly simple measures such as cleaning and Performance Assessments can have a major positive impact on the performance of the heat exchangers, leading to reductions in both energy consumption and CO₂ emissions. But the biggest advantages come from working with planning and maintenance predictions for the entire plant, eliminating the need for maintenance stops between turnarounds and lowering the costs for spare parts," he says.





“Expanding beyond just hardware to include services has been commercially beneficial, resulting in greater operational reliability, lower energy consumption, and reduced emissions.”

Mee Geok Liau
Sourcing Manager, Dow

A partnership with a holistic approach

Ron Faber, Sales Manager at Alfa Laval Benelux, explains the close collaboration between Dow and Alfa Laval has many positive effects:

“The key to success is the strong network and the connections between our companies. Thanks to this close collaboration, we can be more transparent and share information in ways that wouldn’t be possible in a competitive setting. We have an open dialogue where all types of questions can be asked, which allows us to leverage the knowledge from both companies to find the best solutions. That is the core of our successful cooperation,” Ron Faber concludes.

The collaboration led to:

- Improved heat exchanger performance
- Reduced energy consumption
- Lower CO₂ emissions
- Increased awareness of maintenance benefits among Dow engineers
- No unplanned maintenance stops between turnarounds



Want to know more?

Check out our service value calculator to discover how you can boost process efficiency with services from Alfa Laval.

Explore our heat exchanger service offering to learn more.



Related services

- Performance diagnosis
- Performance assessment
- Reconditioning
- Cleaning
- Redesign

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

