Compablocs ensure process stability in major Czech petrochemical company

Unipetrol RPA Ltd., Litvínov, Czech Republic **Case Story**

Unipetrol is the Czech Republic's leading refinery and petrochemical group. In 2007, at Litvínov, 13 Alfa Laval Compabloc all-welded plate-type heat exchangers in stainless steel were chosen by engineering and supply company Intecha Ltd. for a new benzene production unit. According to Intecha, the Compablocs ensure stable operation all year round, irrespective of changes in the temperature of the cooling water.

At Unipetrol RPA Ltd. in Litvínov, 13 Alfa Laval Compabloc heat exchangers in stainless steel are installed in the new benzene production unit.

Positive experience with plate-type heat exchangers

Michal Drebitka, Chief Technologist, Intecha Ltd., explains that initially traditional shell-and-tube heat exchangers (S&Ts) were selected for the project. "However, we decided to compare them with plate-type heat exchangers as we have had positive experience with this technology in the past. The main focus at the time was on making a price comparison."

Since the application involves flows containing aromatic substances – benzene, xylene and toluene – gasketed PHEs were not suitable. Also, the heat exchangers would handle cooling water and, to achieve high quality benzene, it was necessary to use stainless steel material.

Compablocs less expensive

Since S&T heat exchangers equipped with stainless steel tubes would have been more costly than Alfa Laval Compablocs with their smaller heat transfer area, the Compablocs were chosen.

While price was the initial criterion, Intecha later found that installing Compablocs saved space. "Although the steel structure was already designed, it was actually possible to build it one level smaller," says Michal Drebitka. "The space savings will also allow production to be extended or adjusted easily in future."

Efficient and reliable

Unipetrol Litvínov's Production Manager, Miroslav Malecký, relates that his company appreciates the efficiency

The Compablocs ensure stable operation all year round, irrespective of changes in the temperature of the cooling water, say Intecha.

and reliability of the Compablocs. "Their compact size is also beneficial in this application. The new benzene production unit, based on extraction technology, had to be placed inside a steam cracker in a very limited space. Compared to shell-and-tubes, the Compablocs occupy less space, they are easier to clean and they require less room for cleaning."

Good cooperation with Alfa Laval

Michal Drebitka, Intecha Ltd., is satisfied with the service his company received from Alfa Laval.

"They invi-ted us to visit their plate-type heat exchanger production facility where we participated in pressure testing the units we had selected. Alfa Laval personnel also visited the Unipetrol site when the installation was under construction."

During initial operation, some problems with corrosion arose in one of the Compablocs. Michal Drebitka: "We analysed the problem in cooperation with Alfa Laval and agreed on a solution which has been implemented successfully."

Stainless steel Compablocs were chosen to achieve high quality benzene.

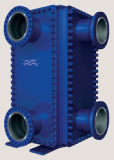
Customer
Intecha Ltd.
Based in Prague in the Czech Republic, Intecha, Ltd. is a design, engineering, procurement and trade company with a large scope of activities for the chemical and related industries. Intecha provides advisory, consulting and complete engineering services using its own technological resources and numerous contacts with domestic and foreign companies.

End-user
Unipetrol RPA Ltd.
Based in Litvínov, Czech Republic, Unipetrol is the leading refinery and petrochemical group in the Czech Republic and a major player in Central and Eastern Europe.

The Unipetrol Group has three refineries with a total annual capacity of 5.5 million tonnes, an integrated petrochemical plant, more than 330 filling stations and about 4,000 employees.

Since 2005 it has been part of Central Europe's largest refining and petrochemical group, PKN ORLEN.

Key Facts:



Design temperature
400°C (752°F), down to -100 °C (-148°F)
Design pressure
From full vacuum to 42 barg (600 psig)
Maximum heat transfer area
840 m² (8,985 ft²)
Material of construction
316L, SMO254, 904L (UB6), Titanium, C-276/C-22/C-2000

Duties
Heat recovery, cooling, heating, condensation, partial condensation, reboiling, evaporation and gas cooling.

Unique features
Compabloc is the champion of heat exchange thanks to unique Alfa Laval innovations that enable reliable, efficient performance, letting you save energy and improve sustainability.

SmartClean
Fast and efficient flushing of fouling material

C-Weld
Superior cleaning and extended performance

XCore
Advanced design for higher pressures

ALOnsite
Qualified support at your facility

Learn more at **www.alfalaval.com/compabloc**

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.