



11 years of non-stop AlfaVap reboiler performance

Marconnelle distillery, Marquenterre group of sugar refineries, France

case story

The Marconnelle distillery is part of the Marquenterre group of sugar refineries in France, and produces 300,000 hl of ethanol from beet juice annually. This takes place during the sugar campaign, which lasts 90 days. The distillery also produces ethanol from molasses during the off season.

30% savings with AlfaVap reboilers

The distillery was built on the Marconnelle premises in 1993, adjacent to the existing sugar plant. Following the recommendations of the technical manager, Mr Foulon, the company decided to use Alfa Laval technology for its reboilers, heat exchangers, condensers and evaporators.

Three AlfaVap cassette reboilers were installed for the wash column, the rectifying column and the methanol stripper, respectively, all working in thermosyphon mode without any need for recirculation pumps. Due to the compact design and light weight of the AlfaVap units, installation costs were kept to a minimum.

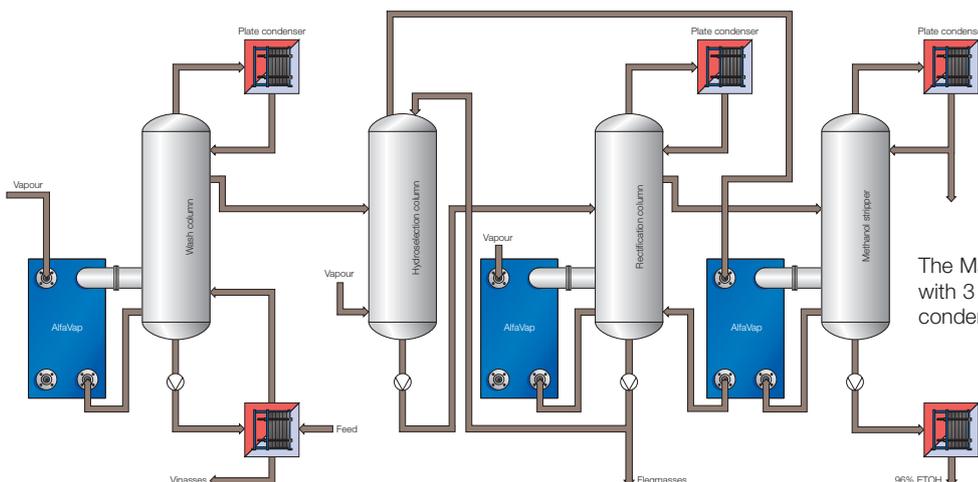
“Compared with shell-and-tube heat exchangers,” says Mr Foulon, “the AlfaVap cassette evaporators saved the company 30% in investment and installation costs. These reboilers are also at least 10% more energy-efficient. Maintenance costs are also kept to a minimum as a result of cleaning-in-place.”

11 years without having to change gaskets

The three reboilers are exposed to very corrosive vapour with a low pH. “We had two aims,” says Mr Foulon. “We wanted to be able to run the whole campaign non-stop. In other words, without having to stop for cleaning, and to only carry out cleaning-in-place (CIP) at the end of the campaign. This has been a great success. Carrying out a simple CIP procedure ensures reliable performance the following season, so we don't have to open the unit. In addition, we've managed to complete five



campaigns without having to change the gaskets on the wash column or the rectifying column reboilers. The methanol stripper reboiler was in operation for no less than 11 years before the first re-gasketing took place, and during all these years, we didn't open up the unit once. This technology has given us complete satisfaction,” he concludes.



The Marconnelle distillation line is equipped with 3 AlfaVap reboilers in addition to plate condensers.



Alfa Laval technology has given us complete satisfaction.

High thermal efficiency using AlfaVap

The different AlfaVap reboilers, with heat transfer areas from 170 to 260 square metres, operate with high heat transfer coefficients and vaporization loads of 5 to 10 t/h.

“The performance of these reboilers goes far beyond our expectations, and the coefficient values are twice those we can obtain using shell-and-tube heat exchangers,” says Mr Foulon.

Alfa Laval plate reboilers save space

“The AlfaVap has a very small footprint, so we've been able to install reboilers in parts of the factories that would otherwise have been impossible with shell-and-tube units,” says Mr Foulon. “The compactness of these plate evaporators has significantly reduced overcrowding our premises. The AlfaVaps only need three square metres of floor space, and they're less than three metres high. This means they take up half the amount of space compared with shell-and-tube units, and

extra space is very important in our Marconnelle distillery. The different AlfaVap units are installed where shell-and-tube units wouldn't fit, but are nevertheless easily accessible. If we ever need to increase our production capacity in the future, we can easily install more of these units. This is just one of the advantages of this technology,” says Mr Foulon.

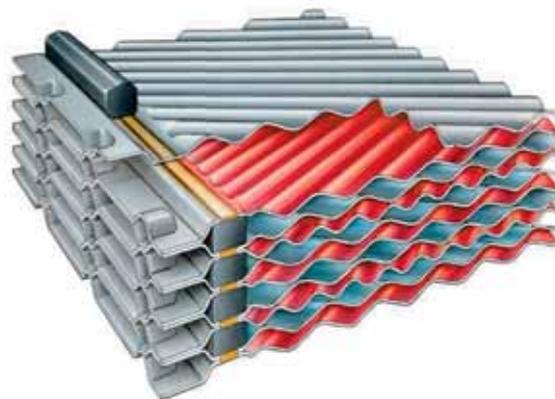
AlfaVap reboilers

AlfaVap reboilers are ideally suited for reboiler duties and are normally installed operating in thermosyphon mode. The plates are welded in pairs to form cassettes, separated by thick gaskets that are stable and durable even under high-temperature conditions. Condensation takes place in the welded channels and vaporization in the gasketed channels.

The standard plate material is AISI 316, but plates are also available in any other pressable material such as titanium, nickel, Hastelloy, etc. The special plate pattern, with a preheating area and an evaporation area, promotes turbulence that enhances heat transfer and minimizes fouling.

NonStop Performance - the Alfa Laval commitment

Alfa Laval is a leading global provider of specialized products and engineered solutions. Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.



AlfaVap plates are welded in pairs to form cassettes separated by gaskets that are stable and durable even in high temperatures.

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