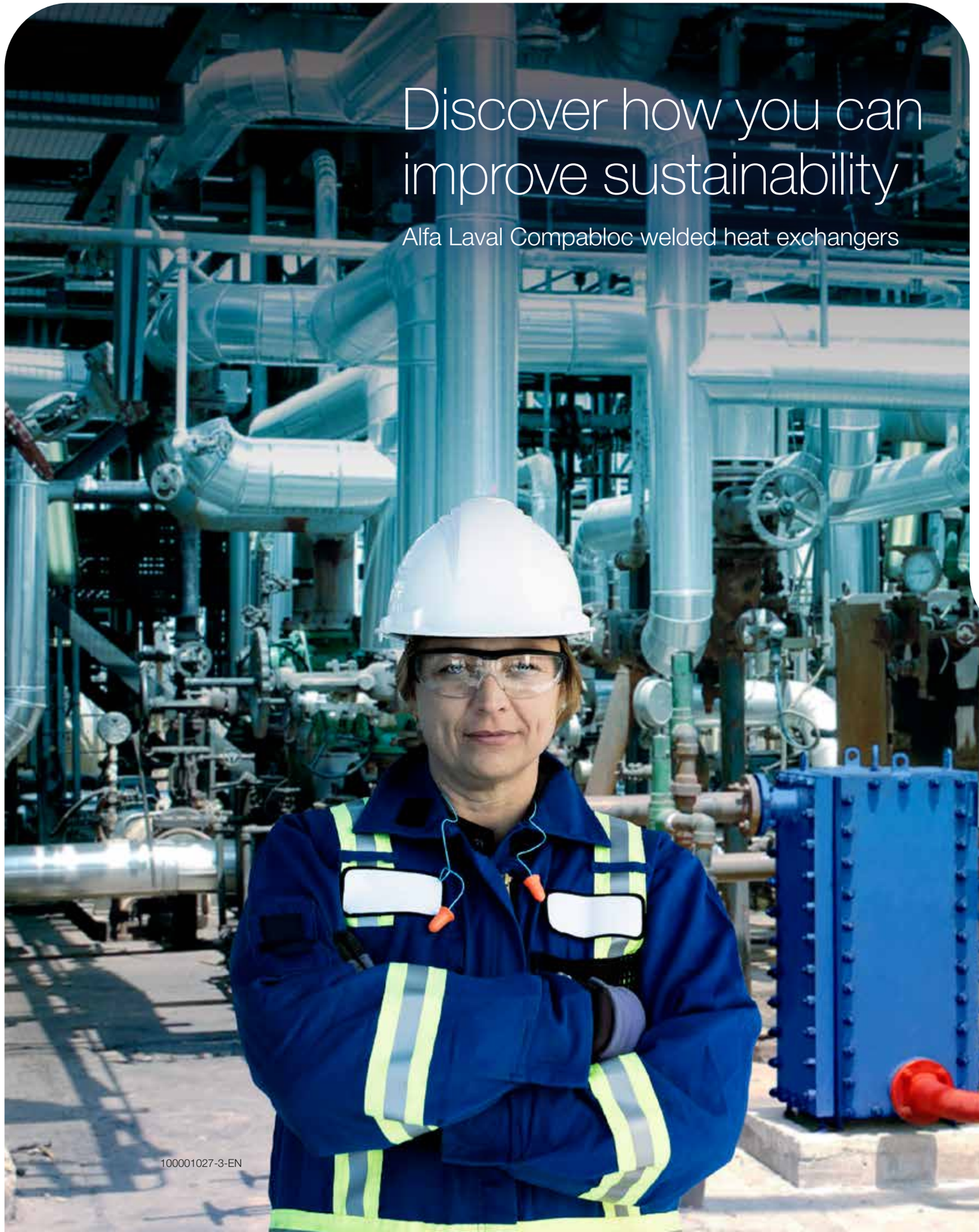
Alfa Laval in brief

Alfa Laval is active in the areas of Energy, Food, Water and Marine, offering its expertise, products and service to a wide range of industries in some 100 countries. The company is committed to optimizing processes and creating responsible growth. We drive progress, always going the extra mile to support customers in achieving their business goals and sustainability targets.

Alfa Laval's innovative technologies are dedicated to purifying, refining and recycling material. They contribute to enhanced energy efficiency, improved heat recovery, responsible use of natural resources, better water treatment, and reduced emissions. Thereby not only accelerating success for our customers, but also for people and our planet. Making the world better, every day. It's all about *Advancing better*™.

How to contact Alfa Laval

Contact details for all countries are continually updated on our web site. Please visit **www.alfalaval.com** to access the information.



Discover how you can improve sustainability

Alfa Laval Compabloc welded heat exchangers

100001027-3-EN

The champion of heat exchange

With over 30,000 units handling tough duties worldwide, the Alfa Laval Compabloc range is a complete family of heat transfer champions. Compabloc is the original bloc-type welded heat exchanger and has a proven reputation for reliable, efficient performance. Specially developed to handle aggressive media, high temperatures and high pressures, it's the perfect choice for challenging reboiler, condenser and liquid-to-liquid heat exchanger duties in chemical, petrochemical, oil and gas, and refinery plants.

Maximum reliability, maximum performance

Compabloc heat exchangers combine the temperature and pressure durability of shell-and-tube designs with the exceptional thermal performance of a traditional plate heat exchanger. Their compact design is simple to install and up to five times more efficient than a comparable shell-and-tube heat exchanger.

The robust Compabloc design translates to reliable operation with low overall maintenance needs. Service is typically fast and easy, and Alfa Laval's dedicated team of experts is always ready to help. All Compablocs provide maximum up-time even in demanding positions and applications, with Compabloc+ providing extra support for higher pressure duties. The total result is both lower capital and operating costs, along with increased production, creating new opportunities for long-term, sustainable profitability.

Custom built to meet your process needs

Because every process plant is unique, every Compabloc is custom built and configured to meet the specific conditions under which it will operate. Performance is therefore always optimized according to the intended duty, providing the best efficiency for your processes.

Alfa Laval's skilled engineers possess deep application knowledge and un-paralleled industry experience, which they use to help you find the ideal solution for your business needs. But it doesn't stop there. We support you at every step – from product design and commissioning to operation and service – making sure your Compabloc delivers as expected for a long time to come.

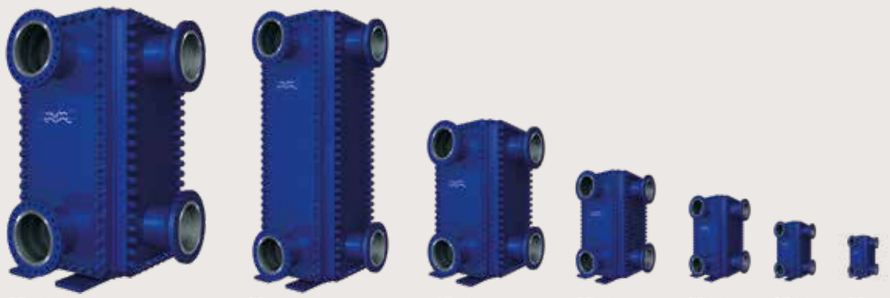
A proven solution for improving sustainability

Businesses around the world have chosen Compabloc for one simple reason: it just works. Alfa Laval's proven manufacturing methods provide high reliability and a long working life in some of the toughest applications. A wide range of design benefits also enable new ways to improve your process sustainability:

- High thermal efficiency saves energy, boosts performance and reduces CO_2 emissions
- Improved heat recovery with lower costs means very short payback time
- Compact design reduces installation costs and resolves bottlenecks for increased production
- Compabloc is fully mechanically cleanable, making maintenance simpler, quicker and more cost-effective
- Durable, laser-welded construction minimizes fouling and eliminates corrosion issues

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 m^2 (8,985 ft^2)
Maximum liquid flow rate per unit	6,000 m^3/h (26,250 US gpm)
Lowest achievable temperature difference	3°C (5.4°F)
Duties	Heat recovery, cooling, heating, condensation, partial condensation, reboiling, evaporation and gas cooling.
Performance	Low to high thermal length or NTU duty. Handles any corrosive medium.

For more product information, visit www.alfalaval.com/compabloc/plus



CP120 CP75 CP50 CP40 CP30 CP20 CP15

Compabloc range

Compabloc is an unrivalled champion that stands out among other heat exchangers – including other bloc-type designs. The difference comes from unique innovations that Alfa Laval have developed based on our decades of experience in heat transfer. These features enable more reliable and efficient performance, helping you to save energy and improve your sustainability.

C-Weld™
Superior cleaning and extended performance

End-to-end laser weld of the plates guarantees accessibility and protects against corrosion.

SmartClean™
Fast and efficient flushing of fouling material

Free-flow channel at all plate boundaries secures efficient removal of fouling.

XCore™
Advanced design for higher pressures

A high-pressure, cleanable plate pattern that increases mechanical strength to improve thermal performance.

ALOnsite™
Qualified support at your facility

True onsite service by skilled engineers, anywhere in the world.

The performance you expect – and so much more

With Compabloc+, duties with even higher pressures can now take advantage of the Compabloc family's well-known, efficient, cost-effective and reliable performance. It's all thanks to an innovative new sealing concept that enables safe operation up to 60 bar.

- Superior sustainability in a wider range of demanding heavy process duties, such as hydrodesulphurization
- The ultimate in reliability at high pressures thanks to the market's only design with a fully confined, graphite gasket
- Unique solution to resolve bottlenecks and increase heat recovery potential under high pressure conditions
- Optimized for minimized fouling with fully cleanable design to retain the original thermal performance
- Simple, cost-effective installation with the same compact footprint as equivalent Compabloc models

Design temperature	400°C (752°F), down to -100°C (-148°F)
Maximum design pressure	From 38 to 60 barg (857 psig)
Maximum heat transfer area	840 m^2 (8,985 ft^2)
Maximum liquid flow rate per unit	6,000 m^3/h (26,250 US gpm)
Lowest achievable temperature difference	3°C (5.4°F)
Duties	Heat recovery, cooling, heating, condensation, partial condensation, reboiling, evaporation and gas cooling.
Performance	Low to high thermal length or NTU duty. Handles any corrosive medium.

For more product information, visit www.alfalaval.com/compabloc/plus

Introducing +Seal™

Confident, long-term performance under pressure

The secret behind Compabloc+ is a revolutionary new sealing concept: +Seal. Unlike traditional flat gasket designs, +Seal introduces the first fully confined graphite gasket in a bloc-type heat exchanger. This prevents the risk of media leaks at pressures as high as 60 bar. It simultaneously simplifies maintenance by protecting against overtightening as well as gasket creeping.

Service that keeps you growing

All Compabloc units feature removable side panels that make service a snap. Whether performing routine maintenance yourself, or getting expert support from Alfa Laval's experienced technicians, most services can be done on location without moving the unit. It's all about maximizing uptime to keep your business moving — and growing!

Minimum fouling and easy-to-clean design

Because every Compabloc is custom-built according to the required operating conditions, you get optimized turbulence to keep fouling to an absolute minimum. And unlike other bloc-type heat exchangers, with Compabloc you can fully clean all channels since there are no dead zones. As a result, it's always possible to fully recover 100% of the unit's original thermal performance with either hydrojet cleaning or a chemical Cleaning-in-Place cycle.

ALOnsite™: qualified support, anywhere in the world

Like all Alfa Laval equipment, Compabloc is backed up by a worldwide network of service centres. We can connect you with an experienced local technician in your area for assistance with installation and commissioning, routine maintenance, and all other service needs.

And our ALOnsite™ feature means you can typically get a full range of support at your location. Our skilled field service engineers can handle cleaning, repair or inspection on site, even at short notice.

Unique expertise for improving sustainability

Compabloc is engineered to help businesses boost efficiency in demanding applications, but it goes far beyond the equipment. Alfa Laval has been working with bloc-type heat exchangers 25 years longer than any other supplier on the market, and we have been developing heat exchanger technology for more than 80 years.

It is this vast experience and wealth of expertise that really makes the difference when it comes to finding the right heat transfer technology for your processes. Our people are always at your disposal, with the knowledge to help you boost thermal efficiency – and your energy savings. Because continuously improving sustainability means having a partner who will be at your side today, and for every day to come.

To learn more about Compabloc, and our service and support offering, visit www.alfalaval.com/compabloc.

Taking on the toughest duties with a true champion

The Compabloc family offers a proven solution for taking on tough process duties in a huge variety of industrial applications. Built with a stack of corrugated heat transfer plates at the core, the fully-welded construction is more durable than traditional plate-type heat exchangers with gaskets, while also offering greater efficiency within a smaller footprint than shell-and-tube designs.

Compact design resolves space limitations

Their small size and low weight make it possible to install Compabloc units practically anywhere. Depending on the duty and available space, units can be configured vertically or horizontally and even placed at the top of distillation columns or suspended from support structures. Compabloc designs also have a much smaller service area than traditional technologies, with all welds and channels easily accessible for service and inspection via removable side panels.

Laser-welded plates for maximum reliability

An all-welded design enables Compabloc heat exchangers to reliably handle aggressive media while operating at high pressures and temperatures. Unlike other bloc-types manufactured with TIG welding, Alfa Laval uses a laser welding process. This creates a more accurate weld, reducing heat input and making the Compabloc range more reliable and fully field repairable.

Alfa Laval's end-to-end CWeld™ joint design eliminates dead zones where fouling deposits can collect and, consequently, the risk of crevice corrosion common to other welded heat exchangers. This design also reduces stress from thermal expansion. The combined result is a robust heat exchanger that is highly resistant to harsh conditions, providing a long and dependable working life.

Close temperature approach

Compabloc operates with a globally counter-current flow, enabling crossing temperatures within a single heat exchanger. As a result, the temperature approach can be as close as 3°C (5.4°F), maximizing the possibilities for energy recovery.

A small heat transfer area also makes it economically feasible to design your heat exchanger using highly corrosion resistant materials. This leads to higher reliability with reduced risk of unplanned stops due to corrosion, along with increased uptime and an extended service life.

Compabloc boosts heat recovery, reduces costs and cuts emissions at Dow Wolff

Challenge

Dow Wolff had a solvent recovery column equipped with two parallel shell-and-tube reboilers, one of which was broken and needed to be replaced.

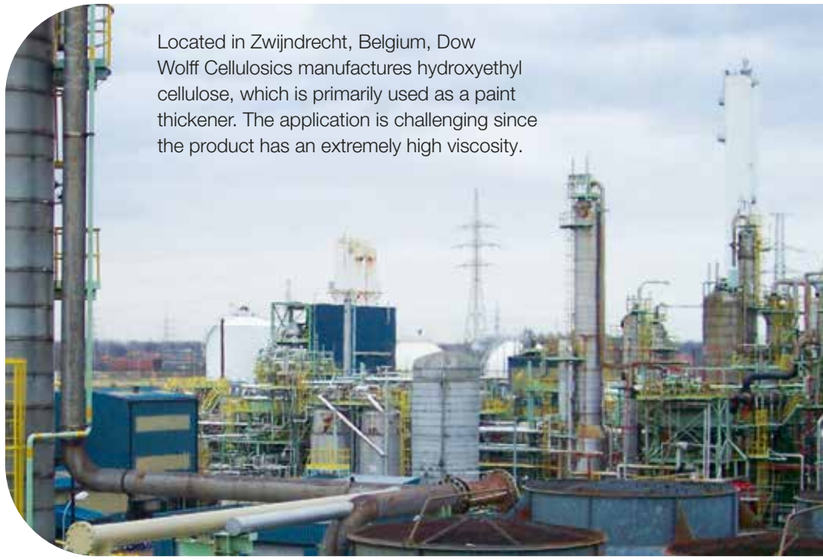
Solution

They replaced the old reboiler with one Compabloc unit and installed another to heat the process feed to the column at a close temperature approach. The increased thermal efficiency enabled improved heat recovery with substantial cost savings.

Result

Annual energy savings: 500 kW

Annual cost savings: €120,000



Located in Zwijndrecht, Belgium, Dow Wolff Cellulosics manufactures hydroxyethyl cellulose, which is primarily used as a paint thickener. The application is challenging since the product has an extremely high viscosity.

More capacity. Lower costs. More heat recovery.

Challenge

To expand their existing shell-and-tube solutions, the petrochemical company needed to invest in a new location, which would have meant high installation costs with low heat recovery potential.

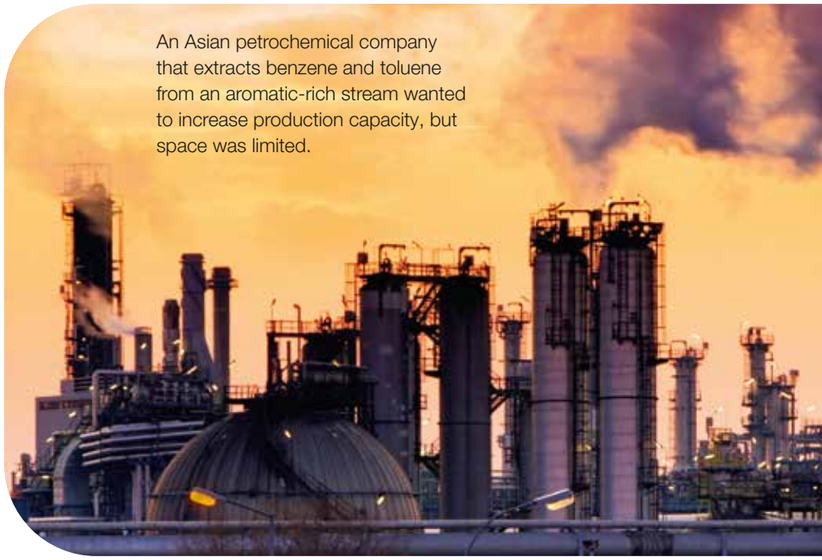
Solution

The company installed three Compabloc heat exchangers in parallel in the inter-changer position on the same platform as the old system. The compact design provided more capacity in a smaller space, as well as improved heat recovery with lower grade steam.

Result

Annual energy savings: 2100 kW

Annual cost savings: €480,000



An Asian petrochemical company that extracts benzene and toluene from an aromatic-rich stream wanted to increase production capacity, but space was limited.