

One gasketed plate heat exchanger model cools an entire man-made island

The Pearl Qatar, located very close to the city centre of Qatar's capital Doha, is a man-made island spanning close to 4 million square meters. It is also the first international real estate venture in Qatar. Its integrated district cooling (IDCP) plant – supplying all residential, entertainment and retail areas on the island – is the largest of its kind in the world. Thanks to a solid, longstanding relationship with the country's leading district cooling supplier Qatar Cool, Alfa Laval was selected to supply the plate heat exchangers for this milestone project.



Zero tolerance for interruptions

The Pearl Qatar project is developed by the United Development Company (UDC) with the country's leading district cooling supplier Qatar Cool providing the infrastructure for cooling services. The area comprises a residential community, five-star hotels, marinas, a yacht club, schools, restaurants and lifestyle amenities. Since reliability and performance are paramount when it comes to district cooling in the Middle East, the decision to use Alfa Laval equipment was natural. The project was carried out in 2008 and 2009, and equipment performance has been spotless ever since.

A matter of trust

According to Mr Issa Quandeel, Project Manager at Qatar Cool, trust was a major decision parameter when Alfa Laval was selected:

"Alfa Laval offers high quality products at competitive prices, competent management and strong after sales support. We plan for a long-term relationship with Alfa Laval – provided that the same level of professionalism and service is maintained."

Issa Quandeel, Project Manager at Qatar Cool

Mr Issa Quandeel continues: "We expect ourselves working with Alfa Laval as long as Qatar Cool performs installations. So far – during six years of close cooperation – no single failure or underperformance of their equipment has been observed. Over a course of six years, this is obviously not something you can attribute merely to good luck."

One model – multiple benefits

For the Qatar Pearl project, the heat exchanger selected was T20B from Alfa Laval. Handling the whole range of cooling loads with one model of heat exchanger means facilitated



The building accommodating the cooling plant has an architecture brought into harmony with the surrounding buildings.

spare part supply and uniform procedures for operation and maintenance. Another basic requirement was a close temperature approach. With the T20B, a temperature approach condition of 1.1 °C is met. This means that the difference in temperature between the water entering the PHE from the underground district network and leaving it on the customer side is 1.1 °C. In this specific case, the network supplies 4.4 °C and the customer gets 5.5 °C.

Substantial energy savings

Substations located inside the buildings have efficient control functions allowing residents to use the cooling energy according to the actual need. This – along with the efficiency of the plate heat exchangers – means substantial energy savings in

comparison with traditional cooling systems. Customers are also offered significant reduction of noise and vibration in their premises.

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Products delivered

T20-BFG gasketed plate heat exchanger.

Number installed: 122

Technical data

- 17.2 bar design pressure
- Delta T 8.9 °C, 1.11 °C LMTD
- Stainless steel 316 plates, 0.5 mm thickness
- Insulation casing and drain tray

Fast facts

- The owner: The United Development Company (UDC) & Qatar Cool (utility provider)
- The scene: City of Doha, Qatar
- The task: PHEs for the world's largest cooling plant of its kind
- The challenge: A combination of scale, climate and zero tolerance for disturbance
- The result: Well-functioning system meeting the harsh standards of the demand specification



Energy
savings



Emissions
savings



Cooling
of homes



From the cooling plant, a pipe network provides the cooling for all the amenities – residential, commercial and sportive – for the entire man-made island of The Pearl Qatar.

Immaculate after sales functions

Mr Nikhil Bhatia, Regional Project Sales Manager, Alfa Laval, emphasizes the importance of the after sales functions when it comes to Qatar Pearl.

“Since undisturbed operation is an imperative, efficient after sales service is crucial. The maintenance work of one gasketed PHE can be undertaken while the others are kept operating. To ensure trouble-free operation, we have also developed an efficient model for swift spare part supply.”

Mr Nikhil Bhatia continues: “This is especially important when it comes to gaskets, since they have a limited shelf life in storage. We also keep considerably technical support resources readily available whenever they are needed.”



Contact Alfa Laval

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