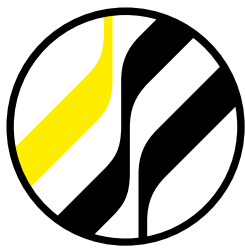


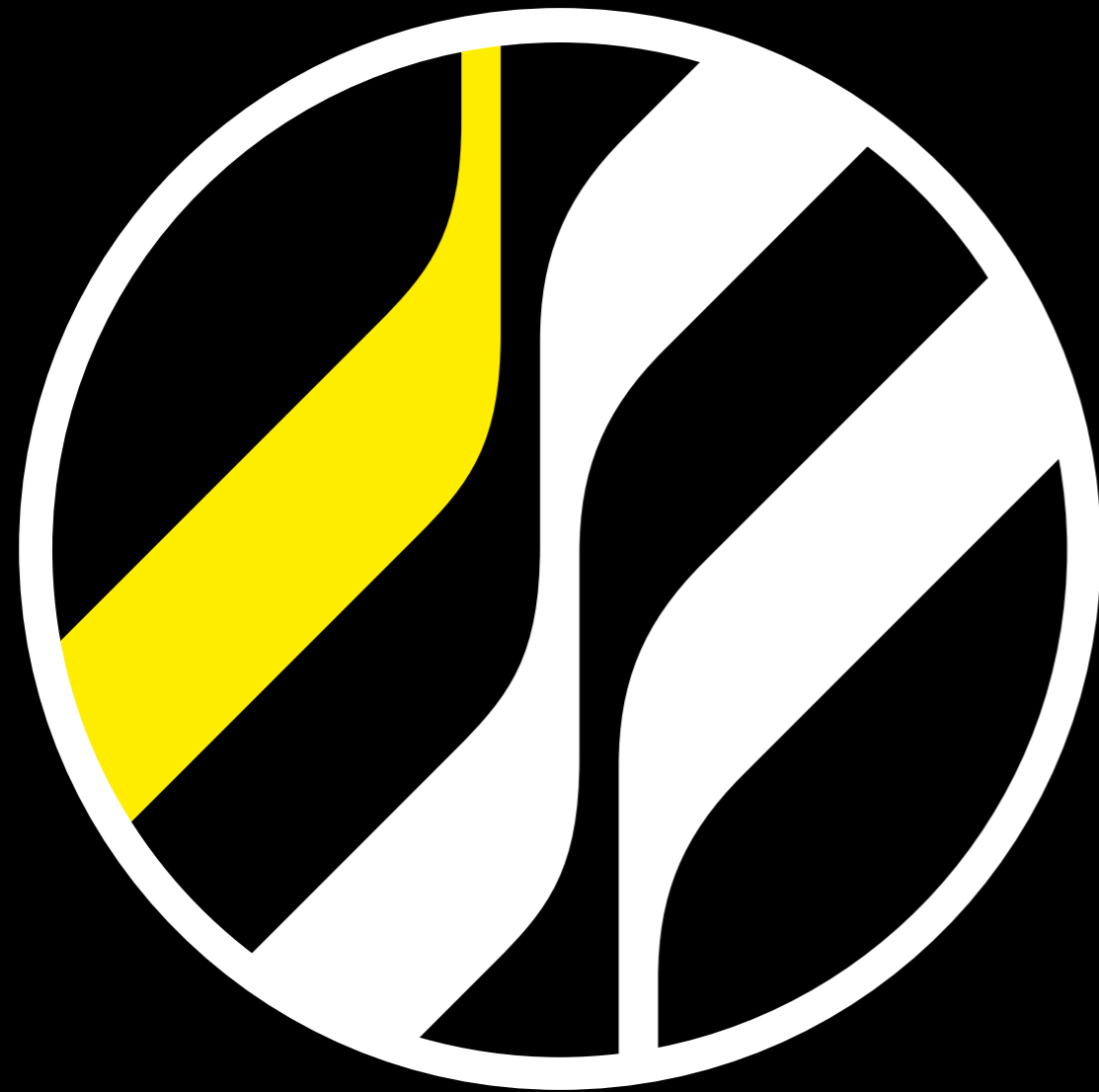
Kelvion



COUNTERFLOW COOLING TOWERS

POLACEL CMC SERIES





WE ARE KELVION – THE NEW BRAND IN HEAT EXCHANGE

GEA Heat Exchangers has changed: another new standalone company has been created out of the former Heat Exchanger Division of the GEA Group AG. The name Kelvion is new, but we continue as global experts in heat exchange. As always, we remain committed to earning your trust.

You'll still recognize us. We continue to develop our products, manufacture them with precision and distribute globally. We continue to offer one of the world's largest heat exchanger product portfolios: Plate heat exchangers, shell & tube heat exchangers, finned tube heat exchangers, modular cooling towers and refrigeration heat exchangers for a wide range of applications.

We operate in global markets for power generation, oil and gas, chemistry, marine applications, climate and environment, and food and beverages. From us, you can expect products with outstanding levels of efficiency, safety, and sustainability. More importantly, we care about your business, like close, trusted partners.

Customers rely on us to understand their needs, boost their performance, and deliver products that always get the job done. We compete for the toughest deals, in the harshest environments. But we're not too big to care. We're Kelvion – ready to take on the challenges of heat exchange. www.kelvion.com

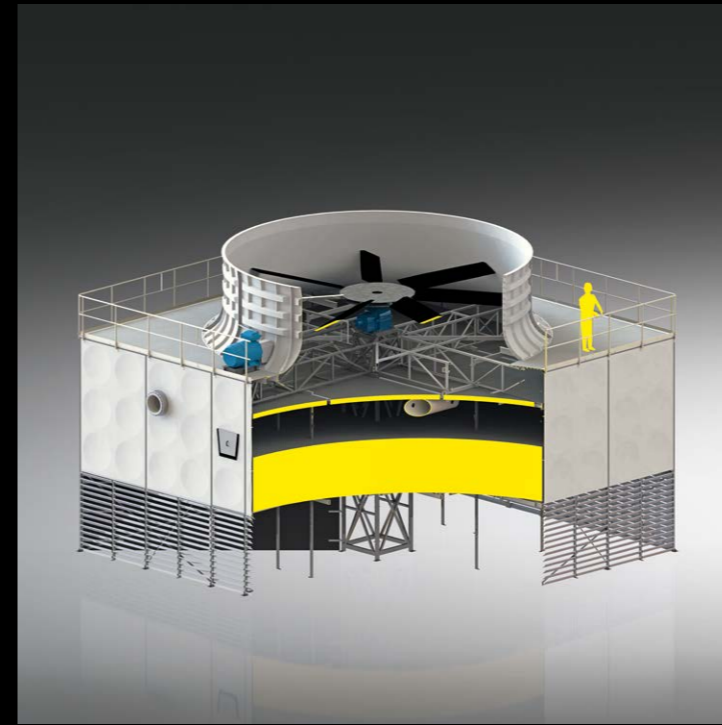
Experts in Heat Exchange.

CUSTOM-MADE OUT OF STANDARD COMPONENTS



Characteristics:

- Over 40 years of experience in the development, design, production, installation and maintenance of cooling towers
- Modular products available for all popular sizes
- Extreme durability through the usage high quality materials like stainless steel, glass fiber reinforced plastics and thermoplastics like polypropylene
- Over 500 models in both counter and cross flow certified in the thermal rating program of the Cooling Technology Institute (CTI)
- Customizable to your demands by our own sales engineers



POLACEL CMC COOLING TOWERS

Kelvion designs, manufactures and maintains cooling towers for process and climate cooling. Our energy-efficient and environmentally-friendly cooling water generators stand out because of the complete quality policy we employ.



The Polacel CMC systems combine a high cooling capacity with low energy consumption. The modules are supplied ready to use and they are easy to adjust to cooling requirements and the available space, whether they are used singly or in series. The cooling performance of these cooling towers is optimal and operation is problem free. With a 95%+ saving in water, the efficient Polacel CMC systems are the best choice for man and his environment.

The effect of counterflow

Polacel CMC cooling towers work on the principle of counterflow. This means that the water flows down while the air is pulled upwards by a fan. As the water flows further through the system, the air it encounters is fresher, in other words cooler and less saturated with moisture. Counterflow cooling towers can approach the wet bulb temperature better compared to crossflow cooling towers.

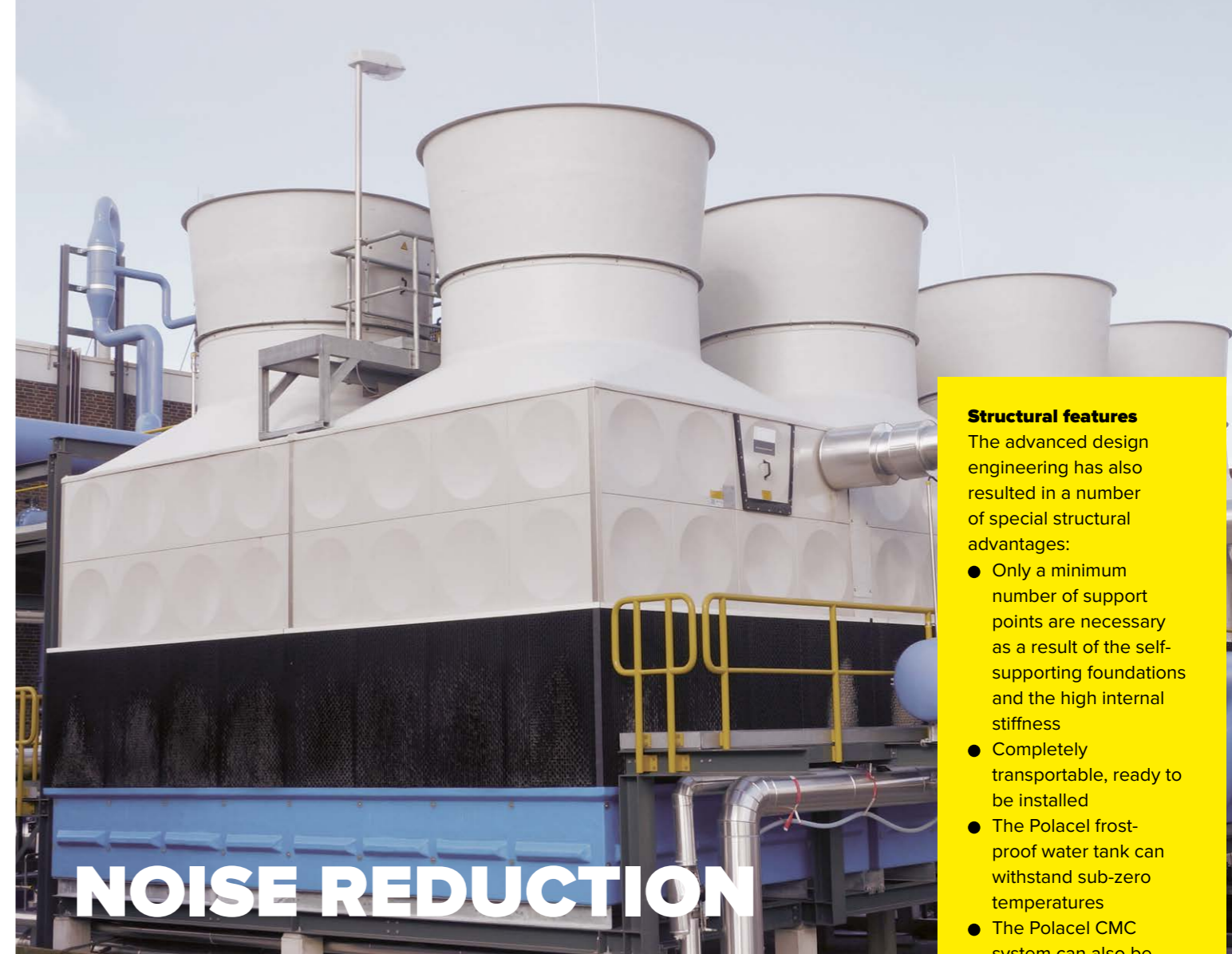


COOLING PERFORMANCE MEASURED: THE WET BULB

The wet bulb temperature is in fact the lowest temperature that can be achieved by air cooling in any particular set of circumstances.

This temperature can be measured by wrapping a glass thermometer in a piece of cotton that has been drenched in water and placing it in a stream of air. The water will evaporate and lose heat (sweating while taking exercise has the same function and makes a 'cooling tower' out of our skin). The wet bulb temperature is therefore lower than the ambient temperature.

Cooling towers try to approach this achievable minimum temperature using as little energy and as efficiently as possible. The Polacel CMC range succeeds in doing this and combines maximum efficiency with low power consumption, and therefore minimal costs.



Structural features

The advanced design engineering has also resulted in a number of special structural advantages:

- Only a minimum number of support points are necessary as a result of the self-supporting foundations and the high internal stiffness
- Completely transportable, ready to be installed
- The Polacel frost-proof water tank can withstand sub-zero temperatures
- The Polacel CMC system can also be installed on existing water basins
- The extendable modular system has virtually no limitations in terms of form and capacity
- All structural design premises are analyzed and tested by means of dynamic calculations and computer studies beforehand

MODULES TO SIZE



The cooling water temperatures (inlet and outlet), the wet bulb temperature, noise and the water load are the four most important factors in the selection of a cooling tower.

Kelvion makes an inventory of the requirements together with the client and uses this inventory as the basis of the design for a suitable solution. The modular Polacel CMC system can be extended, and there are standard solutions available for different capacity needs. Kelvion engineers make customized changes to meet special requirements.

As a rule cooling towers are outdoors, and usually on a roof or at the edge of the site. The noise produced by the cooling tower caused by, among other things, the fan, falling water, the electrical motor or geared motor, can therefore present a problem.

Kelvion has put a number of developments into practice that reduce the noise nuisance. Larger fans (lower speed, less noise and higher efficiency), floating silencers to reduce the noise of splashing and other noise reducing measures combat the different sources of noise.

Kelvion provides a detailed picture of the nature and level of the noise produced by means of detailed calculations. Kelvion can also make calculations for all cooling towers beforehand in relation to the requirements laid down in environmental permits.



KELVION ENGINEERING

The Polacel CMC design has a number of other special and exclusive features:

- The design of the fan section and the large fans ensure lower energy consumption and a substantial reduction in noise
- The Polacel CMC modules are supplied with a direct-drive or indirect-drive fan
- The water distribution system, the spray nozzles and the cooling modules can be geared to the water used and guarantee maximum contact with the air being drawn in
- The air inlet louvres optimize the air inflow and minimize water losses through splashing
- Floating silencers minimize noise caused by falling water
- The designs take into account the desired variations in capacity, appropriate measures during maintenance and other user wishes



The security of quality

Kelvion designs and manufactures cooling towers with long lifetimes and minimal maintenance needs. This is achieved through the materials used - stainless steel combined with glass fibre and plastic - the sound design and the experience of our engineers. 'Cheap and cheerful' solutions, such as a fan with a V-belt drive or painted panels, are avoided. The result is a cooling tower that is low maintenance, energy efficient and able to supply constant excellent problem-free performance.



Advice and service

Kelvion builds cooling modules that meet precise specifications. Our sales engineers give advice, analyze your wishes and take personal responsibility for delivery so that your order is completely in line with your instructions. Kelvion's own service organization specializes in cooling tower maintenance. Irrespective of brand or version, the maintenance specialists know all the ins and outs of the whole technical area and are involved in the latest developments. Kelvion has broad experience in cooling tower maintenance. We work in accordance with the requirements described by ISO, VCA, VDMA, CTI and Eurovent. The technicians can carry out the maintenance needed in virtually every location and in practically any time frame.

Kelvion B.V.

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