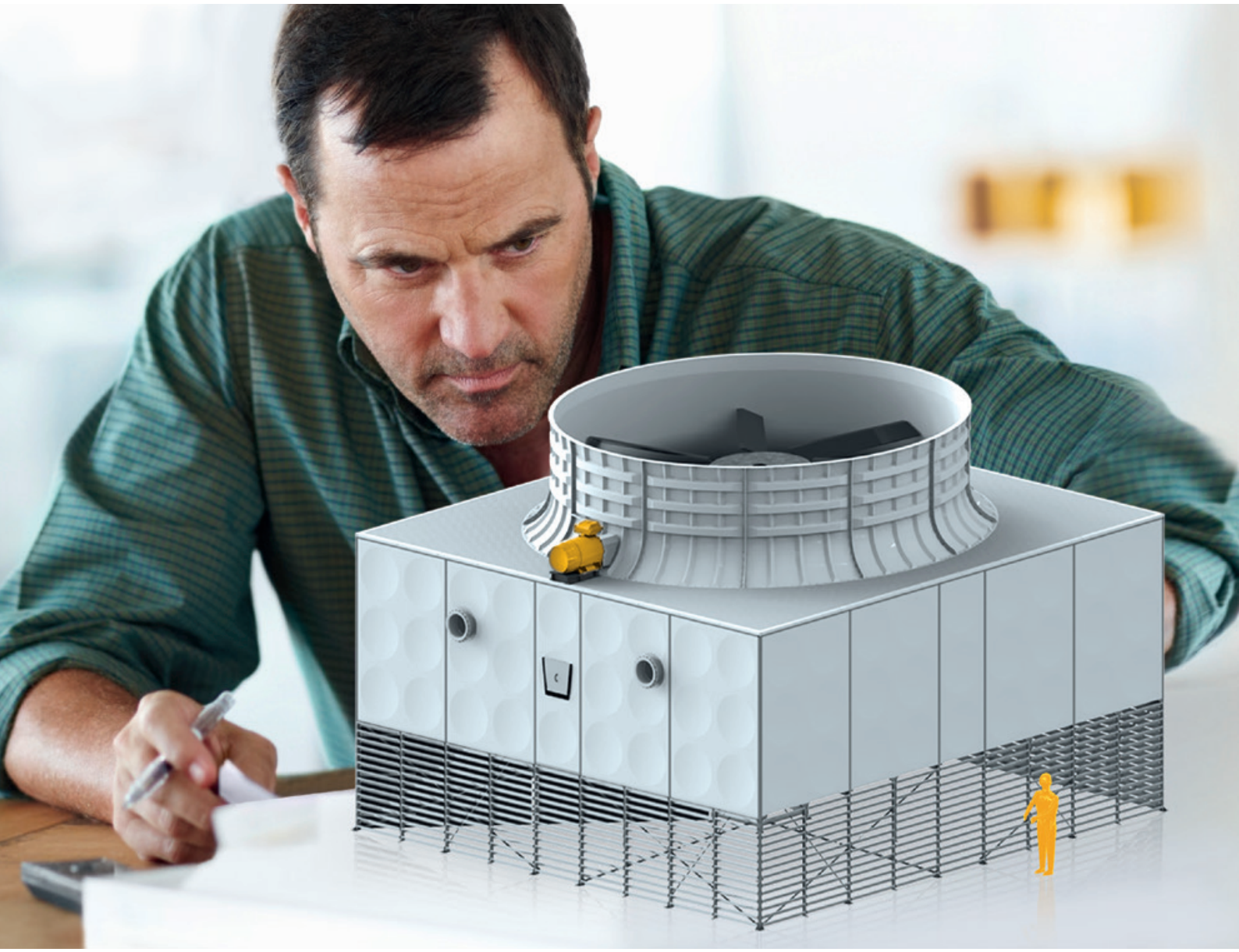
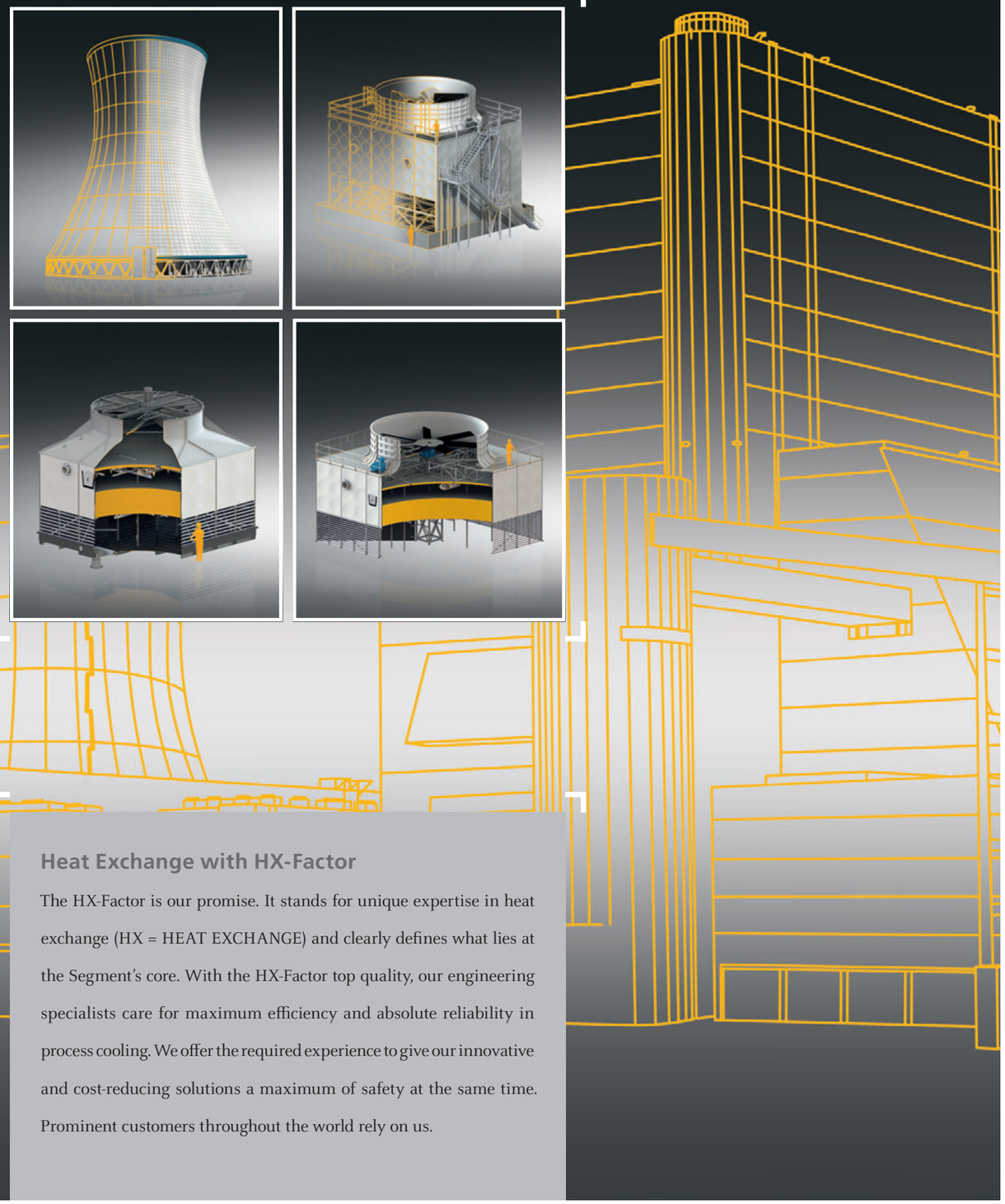


GEA Cooling Towers

Polacel CMDI counterflow cooling towers



Heat Exchange with HX-Factor

The HX-Factor is our promise. It stands for unique expertise in heat exchange (HX = HEAT EXCHANGE) and clearly defines what lies at the Segment's core. With the HX-Factor top quality, our engineering specialists care for maximum efficiency and absolute reliability in process cooling. We offer the required experience to give our innovative and cost-reducing solutions a maximum of safety at the same time. Prominent customers throughout the world rely on us.

GEA Cooling Towers

Efficient technology for high-performance solutions



Our companies under the roof of GEA Wet Cooling Towers offer the whole portfolio of cooling towers – from smaller, ready-to-install towers to large, natural-draft cooling systems. Our Research and Development Team and our manufacturing base ensure that we deliver wet cooling towers at the highest quality level.

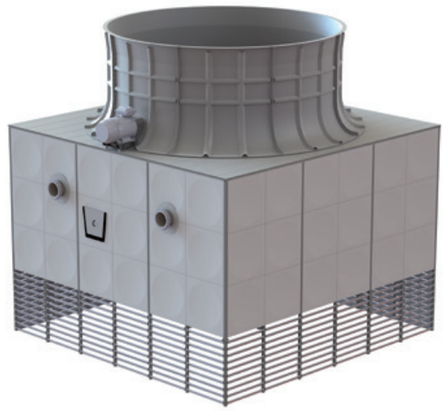
In Europe we have combined our activities for modular and large cooling towers. The experts of GEA Cooling Towers, together with their cooling tower colleagues at GEA Energietechnik (GET), make up one team with combined knowledge and expertise. Our customers greatly benefit from this important step.

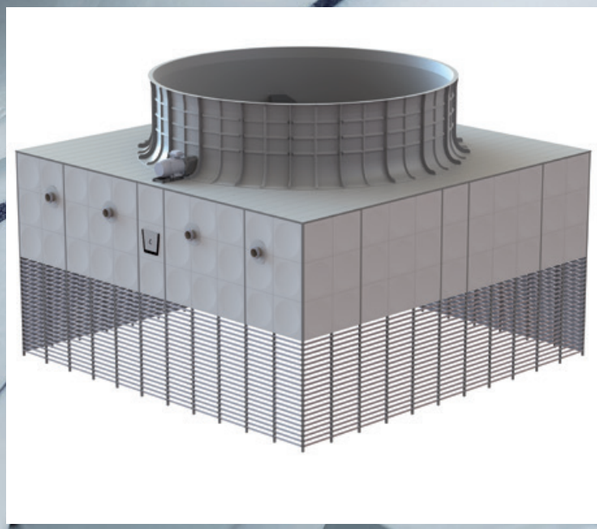
GEA Cooling Towers has its roots in 1967, when the Dutch company CELBOUW was founded. GEA acquired 50 % of shares in Polacel in 1989, and the rest of its shares, in 1991. GEA Cooling Towers technology offers a complete portfolio for the design, manufacture, and service of cooling towers, with components from GEA 2H. Its spectrum includes small modular cooling towers (for smaller processes), mechanical-draft cooling towers (for chemical companies), and cooling towers for large air conditioning facilities (for all sizes of commercial complexes). In collaboration with GEA GET, GEA Cooling Towers now also offers field-erected cooling towers and natural-draft cooling towers for large industrial and power applications.

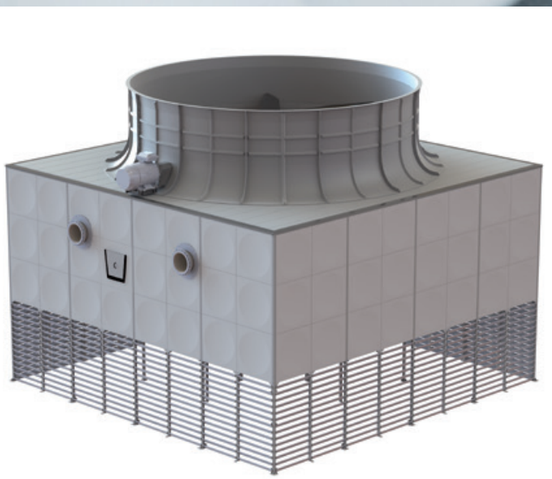
The history of GEA Energietechnik (GET) reaches back to the founding period of GEA, around 1920. In order to offer its customers the most cost-effective solutions for requirements in the area of re-cooling, the GET product portfolio was expanded in 1964 by adding wet-cooling technology. In 1965, GET built its first natural-draft wet cooling tower, for a 300-MW power plant in Niederaussem (Germany). Since then, GET has constructed a great number of facilities with both wet as well as dry cooling technology, to the full satisfaction of its customers.

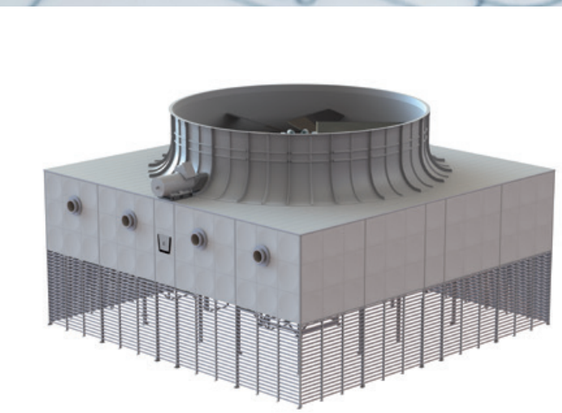


GEA Wet Cooling is among the largest providers of technology on the cooling tower market. It is one of the very few companies to offer all sizes of towers, including modular cooling towers, field-erected mechanical-draft cooling towers, natural-draft cooling towers, fan-assisted natural-draft cooling towers, and closed-loop cooling towers.









Benefits

- One contact person for all solutions
- Globally active in more than 40 countries
- Individual solutions
- Maximum availability, security of operation and system efficiency

GEA Polacel

GEA Polacel is a company of the GEA Group AG. The GEA Group, headquartered in Bochum, Germany, is a globally successful technology group with more than 250 companies in 50 countries.

The company now focuses on specialty mechanical engineering– especially process engineering and equipment. GEA Group technologies are applied in the food, chemical and petrochemical industries, the energy sector, air treatment and shipbuilding as well as the pharmaceutical and cosmetic industries. The GEA Group is one of the world's market and technology leaders in 90 per cent of its businesses.
GEA is a solid foundation for the GEA Polacel activities and it provides us with greater scope. Good contacts with affiliated organizations that are leaders in our field provide an ongoing stimulus to our own development. This is what makes GEA Polacel a leader in the introduction of technological improvements.

The Effect of Counterflow

CMDI 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.

GEA Polacel CMDI cooling towers

Polacel 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 CMDI system concept can process large quantities of water and it has a substantial cooling capacity. 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 CMDI systems are the best choice for man and his environment.



[Modular system]

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.

GEA Polacel 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 CMDI system can be extended, and there are standard solutions available for different capacity needs. GEA Polacel engineers make customized changes to meet special requirements.

Structural featues

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
- The GEA CMDI system can be installed on existing water basins
- The extendable modular system offers flexible solutions in terms of form and capacity
- All structural design premises are analyzed and tested by means of dynamic calculations and computer studies beforehand

[Flexibility]

Fast and flexible construction

GEA Polacel can build these cooling towers in a very limited time frame thanks to the structural quality and the flexible application options offered by the modular CMDI concept.

For example, the CMDI system can be assembled prior to a shut-down (alongside the existing operating cooling tower) and then be hoisted as a complete unit and installed on the existing water basin during the shutdown. This is why the construction time of a Polacel cooling tower always fits into your schedule.

GEA Polacel engineering

The CMDI 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.
- Several types of fans can be selected depending on preference, environmental conditions and capacity.
- 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.
- Also available with polyester water basin.
- The designs take into account the desired variations in capacity, appropriate measures during maintenance and other user wishes.



CMDI cooling tower type 2600
Project in Hungary



CMDI cooling tower type 840
Chemical Plant in Germany



CMDI cooling tower type 2200
Cooling system in Italy



[High standards]

The security of quality

GEA Polacel designs and manufacturers 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.

CMDI cooling tower type 1500
Paper manufacture in Sweden



[Silentness]

Noise reduction

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.

GEA Polacel 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.

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

[All around support service]

Advice and service

GEA Polacel 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.

GEA Polacel’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. GEA Polacel 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.







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Expect one-stop solutions

By concentrating various performance fields into a single, one-stop solution, GEA Heat Exchangers especially enables more effective control of the complex processes in heat transfer. It also speeds up order execution and simplifies preventive and remedial maintenance of heat transfer facilities. In this way, GEA creates clear and personally addressable responsibility for the entire process of project implementation. In a global, tightly meshed network, our highly qualified staff provides all key processes in industrial production and air treatment. GEA has set a new standard for efficiency, reliability, and availability in heat exchange. With production and service locations around the world, GEA Heat Exchangers offers a unique industrial network to provide excellence in engineering and expertise in local services and comprehensive support of our customers in a wide range of dedicated applications.

Excellence Passion Integrity Responsibility GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

www.gea-heatexchangers.com

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