

SPIG™ Cooling Towers

Wet and Hybrid Cooling Solutions



RENEWABLE | ENVIRONMENTAL | THERMAL

Field-Erected SPIG™ Cooling Towers



Refinery in Saudi Arabia



Power plant in India



22-cell cooling tower under construction in Qatar



Wooden cooling tower for a power plant

Global Cooling Tower Expertise

Babcock & Wilcox Environmental (B&W), through our SPIG™ product line, operates globally supplying an extensive range of turnkey cooling systems. Since 1936, we have designed, engineered and installed many state-of-the-art cooling system projects for a wide range of industries including oil and gas, petrochemical, power generation, waste-to-energy, cogeneration and combined cycle, and district heating and cooling, to name a few.

Our experience includes wet, dry and wet/dry hybrid cooling solutions as dictated by site-specific requirements. We can supply both mechanical and natural draft systems and design for a wide range of project specifications such as high seismic loads, vibration control, corrosion, noise control, sub-freezing operation, and sea water use.

Cooling towers can be manufactured using fiber reinforced polymer (FRP), concrete or wood.

Fiber Reinforced Polymer (FRP) Cooling Towers

FRP cooling towers have gained acceptance as a smart alternative to wood, concrete or aluminum thanks to its outstanding properties. FRP cooling tower structures consist of a frame work made by structural shapes of fiberglass composite, stiffened with diagonal braces to transfer wind, earthquake and other live loads to the basin. A large area of the fan deck is walkable and designed to allow easy maintenance of the tower, accessible from ground level via stair/ladder and completely surrounded by handrails.



FRP cooling towers at a refining and petrochem facility in Saudi Arabia

FRP cooling towers are considered the preferred material for harsh and corrosive environments such as oil refineries and petrochemical facilities, offering high strength, weather resistance, long-term performance, light weight, dimensional stability, and noise and vibration absorption. Customers realize benefits from long life operation, minimized downtime and maximized plant performance and availability.

SPIG FRP cooling towers are flexible solutions, reducing assembly times and designed according to international standards (CTI, EN, DIN, ASTM).

With over a half century of experience, our installed and operating FRP cooling towers are cooling a noteworthy total water flow of about 6,500,000 m³/h.

Concrete Cooling Towers

The concrete design cooling tower structure is made with reinforced concrete and is suitable to resist aggressive waters. The precast concrete design has been implemented to meet stringent project deadlines.

The shell and structure is designed to resist wind loads as requested by local codes and standards. It can also be designed to resist seismic loads if required at the plant location. Calculations consider the dead and live loads of the complex while running at full capacity.



Concrete cooling towers

Wooden Cooling Towers

SPIG wooden cooling towers use pressure treated timber which is carefully selected and treated for cooling tower use.

Structure cladding is provided by means of FRP corrugated panels. The fan deck is made of M/F boards provided with suitable supports to withstand normal live and operation loads.



Crossflow FRP installation in Brazil



Hybrid wet/dry cooling tower



Pre-cast concrete cooling tower



Low noise FRP cooling tower

Hybrid Cooling Towers

Hybrid cooling tower technology (wet/dry) is available for visible plume abatement in cold or humid ambient conditions in proximity of inhabited places, such as airports. The hybrid wet/dry design has the additional advantage of saving water.

B&W's environmentally sound wet/dry technology avoids the environmental impact of coupling a wet cooling tower and a dry section (air-cooled heat exchangers) producing dry and hot air.



Hybrid pre-cast RCC installation in Italy

Sea Water Cooling Towers

Process industries located in coastal areas which use once-through cooling systems have a negative impact on the marine ecosystem when discharging the water back to the sea at a higher temperature. Stringent environmental regulations on industrial cooling water usage and discharge have made such once-through systems not environmentally viable.

Environmental standards now require that the process water is cooled before discharging to the sea to avoid thermal shock to marine life. B&W has executed many successful sea water cooling applications ranging from power plants, petrochemical facilities, smelting complexes, etc.



Seawater cooling tower at a 2 x 425 MW combined cycle plant

SPIG cooling towers for seawater applications are directly contributing to safeguarding the delicate marine ecosystem and reducing environmental impact. Our sea water cooling tower technology saves costly desalinated water, which also results in reducing the carbon footprint.

When using sea water as make up, material selection is very important. B&W uses corrosion-free plastic for the cooling tower structure and the main internal components, and the mechanical equipment is protected with suitable coatings to provide the highest degree of protection for salt water applications.



Wooden hybrid installation in the UK

Noise-Abated Cooling Towers

The noise generated in a cooling tower is mainly due to the fan and the water flowing through the tower into the basin.

After careful analysis, experienced B&W engineers offer suitable solutions to meet project requirements. Low noise or ultra low noise fans can often be used to provide reduced fan noise levels. To reduce the noise levels caused by the water falling, B&W has engineered a floating noise attenuation system which can be installed into the basin.

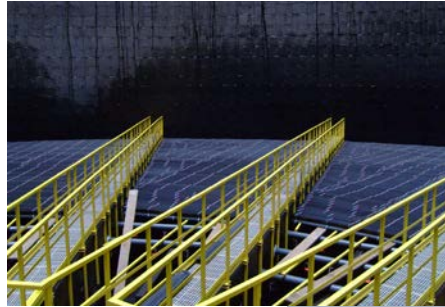
Additional noise control solutions may be specified, including inlet or outlet silencers, or sound proofing boxes to encapsulate the motors. We have extensive experience with such customized solutions with many successfully operating systems throughout the world.



Noise-abated cooling towers

SPIG Natural Draft and Forced Draft Cooling Towers

Our experience includes wet, dry and wet/dry hybrid cooling solutions. We can supply both mechanical and natural draft systems for a wide range of project specifications, including high seismic loads, vibration control, corrosion, noise control, sub-freezing operation, and seawater use. We also provide refurbishments, upgrades and quality replacement parts.



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Quality, Health & Safety, and
Environmental Management
System is certified by



Member in good standing
in the Cooling Technology
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Established in 1867, B&W is a global leader in renewable, environmental and thermal technologies and services for power and industrial applications.

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