SPIG

Cooling Towers

Cool and Clean, Forward

Field-Erected SPIG® Cooling Towers

Global Cooling Tower Expertise

SPIG® 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 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.

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.

Hybrid Cooling Tower in South Korea

Concrete Cooling Tower in Italy

FRP Cooling Towers in Saudi Arabia

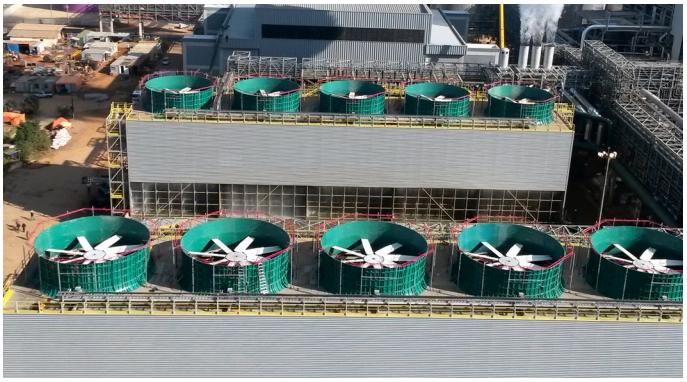
FRP Cooling Tower in Saudi Arabia

Induced Draft Counterflow CT

SPIG® induced draft wet cooling towers are designed for a wide range of project requirements such as high seismic and wind loads, vibration control, corrosion resistance, low-noise emission, sub-freezing operation and fresh, geothermal, sewer or sea water applications. Induced Draft Counterflow Cooling Towers are highly efficient systems where air is drawn vertically upward, counter to the downward flow of hot water. This design maximizes contact between the air and water, enhancing heat transfer and reducing water temperature effectively. By using fans at the top, these towers create a strong airflow that promotes quick cooling, even under variable load conditions. Additionally, their design minimizes water drift and allows for more compact installation, making them suitable for industrial facilities with limited space. Induced draft systems also tend to be more energy-efficient, providing operational savings while maintaining effective temperature control.

Induced Draft Crossflow CT

In crossflow cooling towers, water flows perpendicularly to the air stream, achieving high thermal efficiency through a unique distribution system.
Louvers enhance airflow direction, and the tower design is especially compatible with splash fills.
A fixed water distribution tray covers a large section of the fan deck area. Depending on specific thermal requirements, crossflow towers can provide a compact footprint compared to counterflow models. Additionally, the basin design in crossflow towers allows for easier access, making inspections more convenient.



Induced Draft Counterflow CT in Brasil

Crossflow Cooling Tower in Algeria

Natural Draft and Forced Draft CT

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.

SPIG® specializes in the service and refurbishment of Natural Draft Cooling Towers (NDCTs), which are large, hyperbolic towers that utilize natural airflow for cooling, eliminating the need for fans. Our team of skilled engineers brings extensive expertise to each project, ensuring that NDCTs operate at peak efficiency and reliability.

With a commitment to quality and innovation, SPIG® offers tailored solutions for maintaining and upgrading NDCTs, maximizing their performance and extending their operational lifespan to meet evolving industrial demands.

Natural Draft Cooling Tower revamping activities in UK

Hybrid CT

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. SPIG®'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 Cooling Tower in South Korea

Hybrid Cooling Tower in Italy

Since 1936, SPIG has globally provided advanced cooling systems, tailored to industry needs with specialized designs in seismic, corrosion, and sub-freezing environments. Our expertise spans 85 countries.

Noise-Abated CT

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 SPIG® 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, SPIG® 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.

Sea Water CT

Process industries located in coastal areas which use 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. SPIG® has executed many successful sea water cooling applications ranging from power plants, petrochemical facilities, smelting complexes, etc. 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. SPIG® 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.

Noise-abated Cooling Tower in Portugal

Seawater Cooling Tower in Spain

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

ISO 9001
ISO 14001
ISO 45001
BUREAU VERITAS Certification

Member in good standing in the Cooling Technology Institute since Feb 1993.

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