ICS Cool Energy

Adiabatic Solutions

ics cool energy

ICS Cool Energy is a specialist in the sale, rental, servicing and installation of temperature control and HVAC solutions providing custom bespoke and packaged solutions to both industrial, comfort and HVAC requirements through a wide spectrum of proven heating and cooling systems.

> At ICS Cool Energy we are continually looking at innovative temperature control technologies that can help our customers reduce carbon footprints and save on both energy and operating costs.

Adiabatic Coolers provide a cost effective alternative to Cooling Towers. Designed to operate at optimal efficiency in high ambients and low water temperature applications, Adiabatic Coolers operate with fans only for a high percentage of the year with the spray system taking over in high ambients as required.

When the adiabatic cooling takes over, very tight tolerances are maintained to pulse the sprays giving minimum adiabatic cooling for a given load and ambient condition. This control minimises water consumption and running costs providing a long, fault free product lifespan.

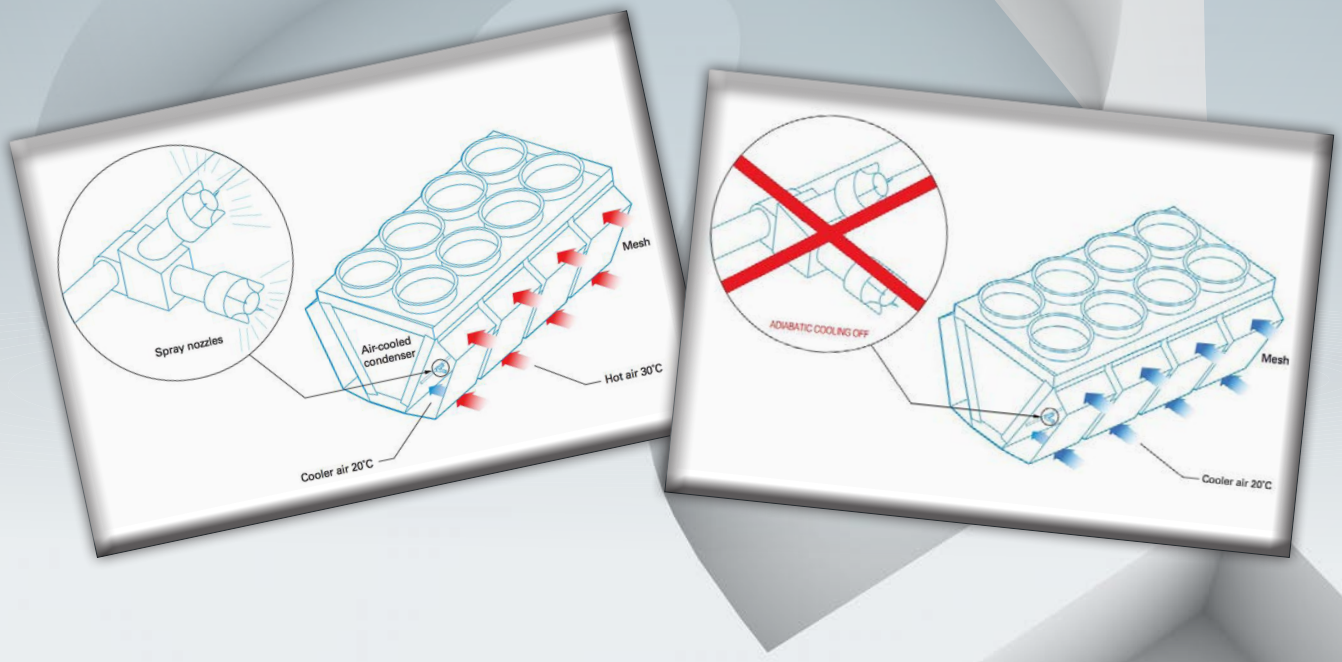
Q&A

How does an Adiabatic Cooler work?

Adiabatic Coolers are designed to pre-cool the air inlet stream into the cooling coils. By increasing the relative air humidity the temperature is lowered to achieve an effective air-on-temperature as low as 5°C above the wet bulb temperature.

The system operates by taking the heated fluid from a process through the cooling coil where for 95% of the year fans draw in cool air, reducing the fluid temperature and returning it at the required temperature to the process, where the ambient temperature is high.

Adiabatic Coolers utilise mains cold water by spraying a fine mist towards the incoming air which is being drawn over the cooling coils (through a UV filter to kill any bacteria) which in line with the air drawn in from the fans creates the required temperature for the process.



Q&A

How does Adiabatic Cooler operation compare to Cooling Towers?

Adiabatic Coolers utilise their spray cooling once the ambient temperature is too high to use ambient air alone for the cooling provision, whereas Cooling Towers use a continual spray of water to achieve its cooling effect.

What makes Adiabatic Coolers more environmentally friendly than Cooling Towers?

Adiabatic Coolers only use mains cold water when the high ambient temperature demands a higher level of cooling. Whereas, Cooling Towers by design continually use mains cold water to spray a fine mist to create the cooling effect. Due to the evaporation rates of Cooling Towers (1.6kg water evaporated for every **kW** of heat removed) the water and chemical costs to maintain the fluid chemical balance can quickly mount up to tens of thousands of pounds.

In contrast to this, Adiabatic Coolers only introduce water as required meaning that the capital cost of an Adiabatic Cooler and its first 25 years of water consumption is considerably less than the first year of water consumption of a Cooling Tower.

Save thousands of pounds in running costs

Conserve water

No further chemical treatment required

Uniquely Designed Solutions

"There were so many options available, we didn't know what would best suit our business needs and budgets. ICS Cool Energy gave us a solution that worked well and saved us money in the process."

ICS Cool Energy is a specialist in temperature control solutions and recommend the best piece of equipment for each requirement, industry and application, taking energy consumption, site activities and running costs into consideration. By looking at each site and application individually, maximum savings and efficiency can be achieved.

"We had previously used a Cooling Tower to manage the heat rejection from our air conditioning system but the operating costs were getting out of control. We switched to an Adiabatic Cooler and noticed immediate savings which equate to over £50,000 per year."

To effectively remove heat from a Cooling Tower, water and chemicals are continually added to maintain the chemical balance in the system. For every kW of heat removed from the Cooling Tower circuit 1.6kg of water is evaporated. The replacement Adiabatic Cooler doesn't require the same level of water replenishment as it utilises the evaporative system only when required (around 3% of the year). The water savings in this instance are estimated at well over £50,000 per year.

"We wanted a cooling solution that would support our green credentials and actively minimise the risk of developing and breeding legionella bacteria. An Adiabatic Cooler met this requirement and saved us thousands in the process."

Cooling Towers can facilitate the growth and spread of legionella bacteria; the water droplet size produced and the process temperatures are ideal to breed the bacteria, consequently regular servicing, chemical treatment and strict HSE guidelines need to be followed. ICS Cool Energy's Adiabatic Coolers produce smaller droplets of between 50 and 100 microns which cannot support the bacteria growth, also the system features a UV disinfection system as a failsafe to kill any traces that may make its way into the system, further minimising the risk to health.

Uniquely Designed Solutions

"We wanted a system that would effectively meet our cooling requirement and require minimal maintenance."

ICS Cool Energy's range of Adiabatic Coolers, in addition to their efficiency and water saving operation, do not need to be registered with the Health and Safety Executive as the risk of legionella is all but removed with the units' safety features. Unlike Cooling Towers, these systems also do not need to be shut down for an annual cleaning as the safety measures in place are so thorough. For example, during the majority of the year where no adiabatic cooling is required the ICS Cool Energy system has an auto drain down function to empty the system of water and once Adiabatic Cooling is required, a pre-purge facility flushes the system prior to adiabatic spraying.

"We wanted to work with a proven, reliable supplier who could manage every aspect of the installation and provide ongoing support."

Having managed customer installations for 25 years, ICS Cool Energy is able to support their customers with experienced, reliable recommendations and customised solutions including full installation and commissioning as well as ongoing maintenance and service packages. Many customers continually return to ICS Cool Energy as they pro-actively work with them as industry develops, ensuring optimal regulatory compliance and enhanced performance.

"We wanted to see the savings for ourselves before investing capital into a new system. ICS Cool Energy offered a rental solution which proved the saving and allowed us to budget for our own unit in our own time without any pressure."

As part of their European service, ICS Cool Energy, through their specialist hire division offer long and short term hire on all ranges of cooling and heating equipment to overcome shortfalls and support budgets, helping to manage cashflow as well as providing fast solutions with the latest 'class A' energy efficient solutions.

Want to know how much you could be Saving?

In order to fully understand your application and requirements a free no-obligation site visit is recommended.

This will allow your local Engineer to carry out an energy analysis to provide the most suitable solution for your application and also determine how much energy and money you could be saving by switching to an alternative temperature control solution.

No need to search for advice ... contact ***ICS Cool Energy*** *today*

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