

Trane Building Advantage

# Adiabatic Cooling

TRANE  
TECHNOLOGIES

# Enhance your equipment reliability and efficiency

Trane Building Advantage customized service solutions for building owners address operating performance, energy efficiency and environmental concerns. Adiabatic cooling reduces the temperature of the air entering the coil, facilitating improvement of equipment reliability and efficiency.

Operating equipment outside design parameters may significantly reduce reliability and efficiency.

**Reasons for such exposure may include:**

- Units located in places of higher ambient air temperatures.
- Non-conformity with installation clearances between units, leading to air recirculation.
- Units retrofitted with R404a facing ambient air limitations.
- Aggressive outdoor conditions such as sand and dust storms.

**Consequences include:**

- Frequent nuisance equipment trips or breakdowns.
- Increase in your electricity bills.
- Drop in equipment efficiency.

**Trane Adiabatic Cooling – the simple, reliable solution**

Turn to Adiabatic Cooling from Trane and the problems are solved. It's a unique system that

improves the performance of all air cooled equipment operating in adverse conditions. Without requiring energy use to provide its cooling effect, Trane Adiabatic Cooling improves reliability and efficiency.

**Benefits include:**

- Reduction of system power input: a 10°C temperature drop delivers a 13% reduction in power consumption, bringing immediate cost savings.
- Delivery of design capacity without interruptions when ambient air temperature reaches summer peaks above design.
- Enhanced compressor life due to reduced discharge temperature.
- Permits R404 refrigerant retrofit where ambient temperatures are high.
- The mesh placed in front of the coils provides shading which overcomes the solar radiation effect on coils.
- The mesh also acts as a self cleaning filter protecting the coils.



**How the system works**

The Trane Adiabatic Cooling concept is based on the natural thermodynamic properties of water.

Water is sprayed intermittently onto large non-metallic mesh panels installed in front of the heat rejection coils of chillers, remote condensers, rooftops, etc. The evaporating water creates the cooling effect, lowering the air temperature before it reaches the condenser coil.

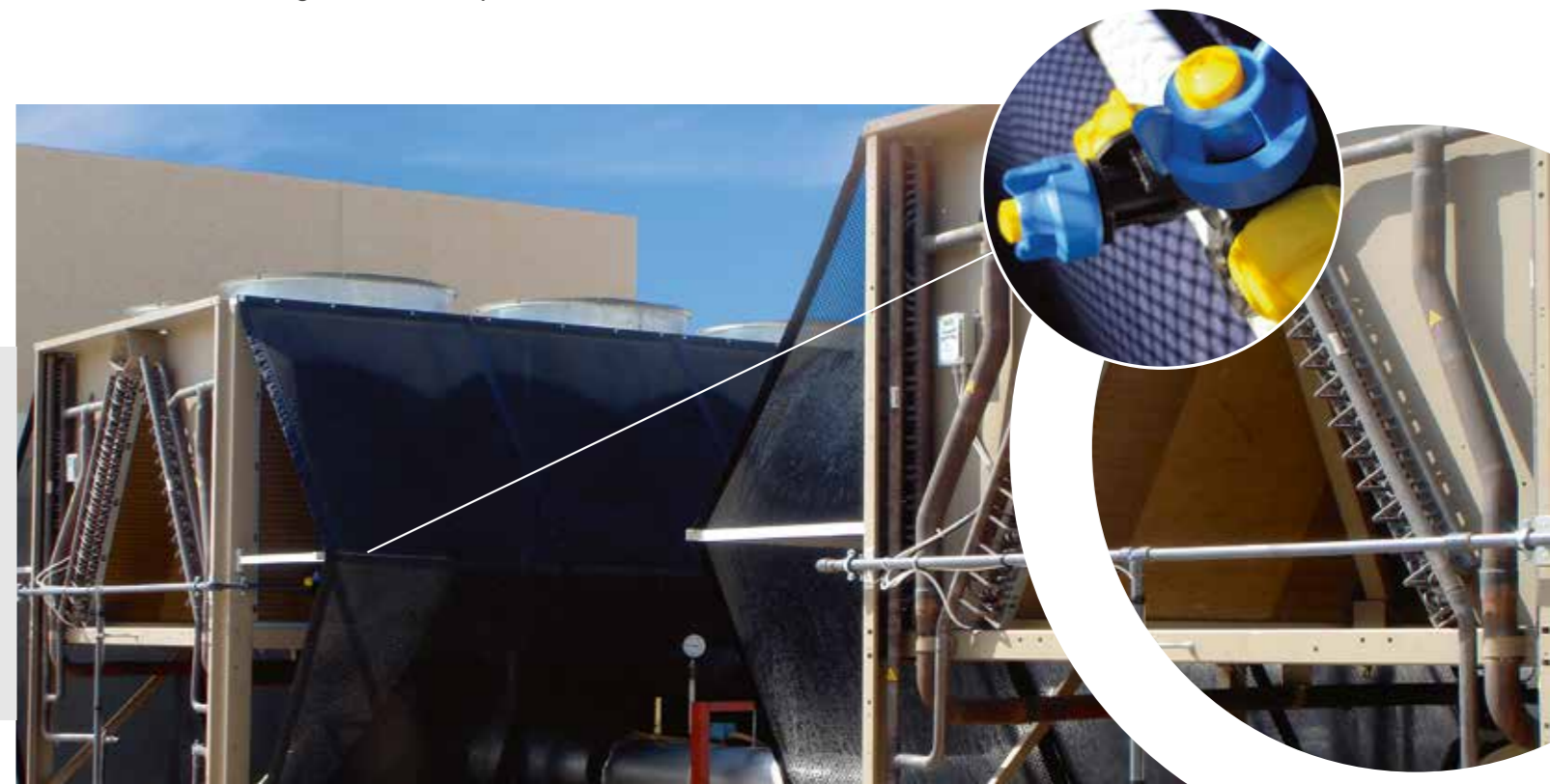
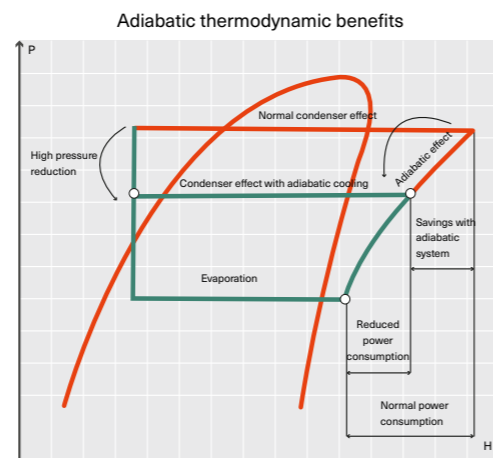
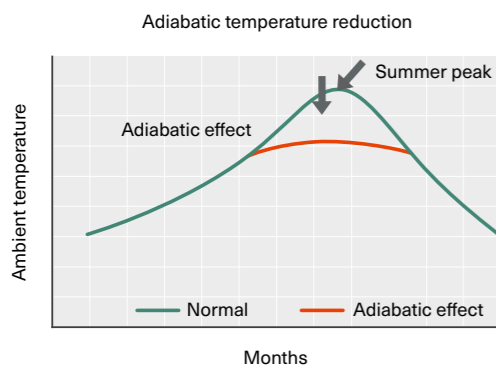
The air temperature reduction can reach as much as 20°C depending on the ambient air enthalpy conditions.

**System features**

The Trane Adiabatic Cooling system has been designed for versatility, simple installation and economical operation.

- Flexible design: Sectional mesh panels and coil clip suit every model from mini-split to large water chiller.
- Water system: Comprising pressure regulating valve, solenoid valve, and nozzles suitable for filtered water with a minimum of 2.5 bars. Soft water is required to avoid scaling on mesh.
- Controller: Initiates the solenoid valve according to pre-set ambient conditions.

The frequency and duration of cycles are carefully determined to match system requirements while minimizing water consumption.





# Trane Services

The real expertise of a manufacturer



- Systems approach
- Dependable installations
- Energy saving solutions
- Operating cost optimization
- Chiller plant management solutions
- Chilled water production solutions.

At Trane, we are committed to providing a comprehensive portfolio of HVAC solutions throughout your system lifecycle.



## Breakdown resolution

No one plans for breakdowns, but when they happen you need the right partner. Our expert Service Engineers use the latest diagnostic tools to guide you through your options to Repair, Renew, Replace or ReThink.



## Secure operations

At every point during the lifetime of your equipment - installation, commissioning, maintenance or breakdown - Trane can offer an effective solution with commissioning, first-aid kits and service agreements.



## System upgrade

Trane Building Advantage

Trane is committed to bringing the latest technological advantages to our customers through a wide portfolio of solutions which increase the Efficiency, Reliability and Sustainability of their HVAC plants. Our Service Engineers use their expertise together with the latest diagnostic tools to future-proof your system and make it “better than before”.



## Equipment rental

For special events, exceptional needs or when you want to ReThink HVAC management, Trane Rental Services have the right solution. With our extensive fleet of equipment, we can perfectly match your temporary heating and cooling requirements.



## Contact us

With over 1000 of the best trained sales engineers and service technicians in the industry, Trane is in the best position to serve your needs. Just call us and we will help you configure the right solution for your HVAC system.



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit [trane.eu](http://trane.eu) or [tranetechnologies.com](http://tranetechnologies.com).