Cooling Tower Upgrade

Fills Replacement

Cooling Tower Fills Replacement Solution by Daikin

Cooling Towers are a critical component in a chiller plant wherein heat from the airconditioned space is rejected to the atmosphere and a chiller plant cannot function without it. Cooling towers are also a major contributor to energy efficiency of the chillers they serve.
The most important component of a cooling tower is the fill. Its ability to promote the maximum surface area and the max contact time between air and water determines the efficiency of the cooling tower. It must promote the air-water contact and least possible restrictions to air flow.

Let our energy experts help you save energy and improve your cooling tower performance

- Assessment of your cooling towers
- Proposal with solutions to improve your cooling tower performance
- Fill inspection to see if replacement is required
- Suitable fill selections
- Supply and Installation of fills and startup

When to Replace Fills ?

- Increased Energy Consumption
- Uneven Water Distribution
- Sagging fill packs
- Damaged Support Grids
- Calcium Built-up
- Higher leaving water Temperature

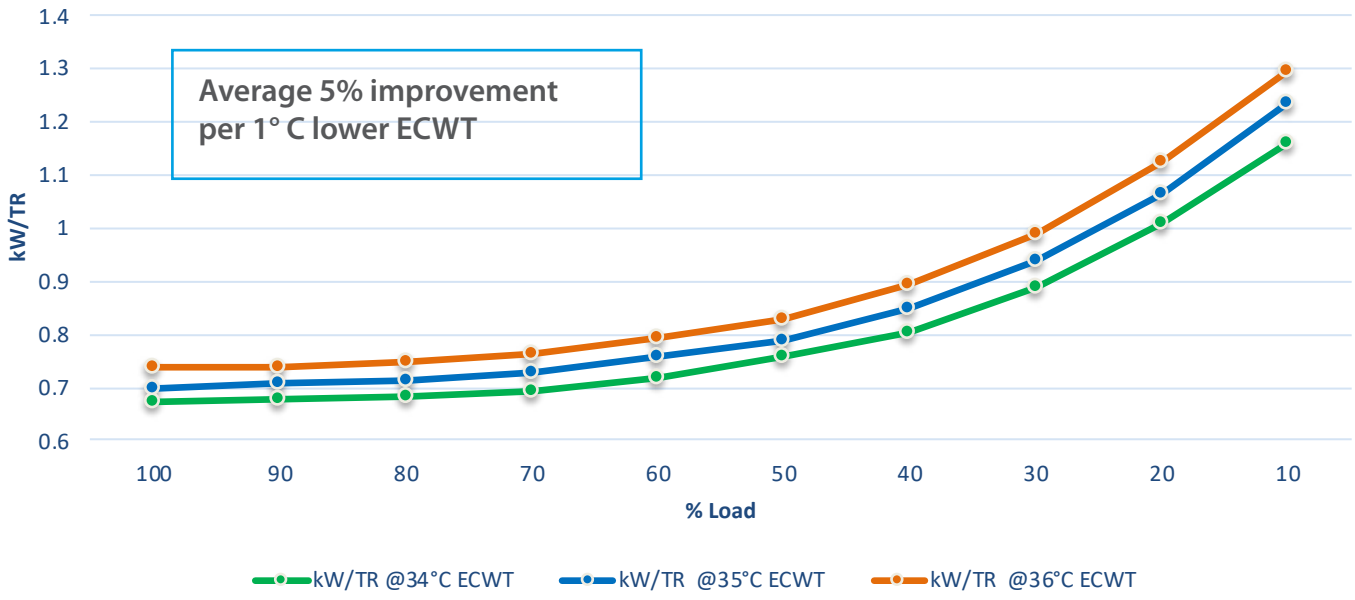
Impact of condenser water temperature on the chiller efficiency

Damaged cooling tower fills results in higher water temperature leaving the cooling tower. This has a direct negative impact on the chiller efficiency and on the cooling capacity of the chilled water plant.

Consider a situation wherein the chiller capacity is neck to neck with peak summer cooling needs. Deteriorated cooling tower fills will in most cases result in high cooling water inlet temperature to the condenser, thereby reducing cooling capacity delivery from chiller and increasing energy consumption and even leading to surging of a centrifugal chiller.

The below graph shows an example of the impact of higher condenser water temperature on chiller efficiency (kW/TR) for a new chiller. It could be worst in actual operation in an existing chiller.

Impact of damaged/inefficient fills on Chiller power consumption



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