

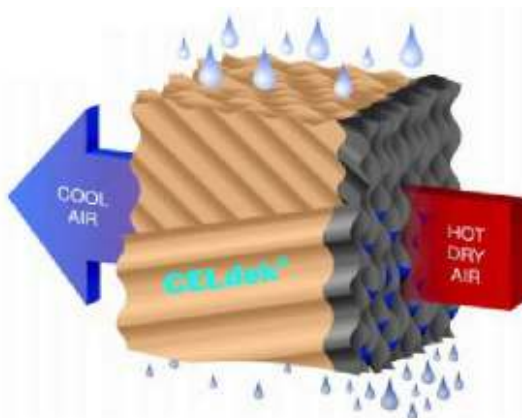


TECHNICAL BULLETIN 0640

Evaporative Cooling Performance

How Does Evaporative Cooling Work?

The principle of evaporative cooling is quite simple. Water is applied to the top of the media and allowed to trickle down. It spreads out over the extensive surface and mixes with the air, which is passed through the corrugations. When the water evaporates, it requires energy to pass from the liquid to the gaseous stage. The water vapour absorbs this heat from the air, thereby lowering the temperature of the air as the relative humidity is increased.



Supply Air Temperature Achieved By EcoCooling Coolers

Amb. Temp	Relative Humidity						
	20%	30%	40%	50%	60%	70%	80%
20°C	12.0	13.0	14.5	15.5	16.5	17.5	18.5
25°C	16.0	17.0	18.5	20.0	21.0	22.0	23.0
30°C	19.5	21.0	22.5	24.0	25.0	26.5	28.0
35°C	23.0	25.0	26.5	28.5	30.0	31.5	32.5

Temperature ↑ + Relative Humidity ↓ = Cooling ↑

Performance during a Hot Period

The graph below shows the performance of a unit during a hot period in the UK. The cooler gives the most cooling when the temperature is the greatest giving a smoothing effect. It can be seen that up to 45KW of cooling can be obtained from a single unit which consumes only 1.5KW of electricity

