



CASE HISTORY

COTT BEVERAGES
EVAPORATIVE
COOLING



When Cott Beverages Limited in Pontefract, Yorkshire needed to keep their production areas cool where they make and bottle soft drinks for Vimto, Sainsburys and Asda, their Chief Engineer, Chris Jones, contacted Celsius.

Problem

The production areas contain many heat emitting machines, sterilizers, pasturisers, Shrink Wrap Tunnels, bottling lines etc. These combine to produce a very warm internal environment, with summer time temperatures regularly exceeding 38Co.

Solution

After surveying the area Celsius determined the likely internal heatload and designed a suitable ventilation system.

The area contained very little existing ventilation equipment, there were only 3 no. high level existing extraction units. However, in the height of summer these proved ineffective against the warm external temperatures and plant heat. Additional cooling was required.

To provide the required additional cooling Celsius installed a system of 18 no. Evaporative cooling units, these were mounted on the roof and ducted into the area to discharge over personnel around the area.

Evaporative coolers reduce the incoming temperature during the warmer months by as much as 10Co, they also filter the incoming air thus maintaining the high hygiene standards throughout the area.

Evaporative cooling is the most cost effective way of cooling industrial premises and also the most environmentally friendly as each unit only uses 1.5KW of electrical power, a standard water supply and no refrigerant gasses.

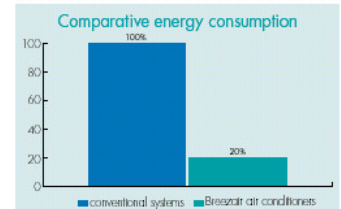


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ADVANTAGES OF EVAPORATIVE COOLING SYSTEMS



- Introduces 100% fresh and filtered air
- Doors and windows can stay open
- Maintains some moisture in the air, particularly beneficial to those suffering from allergies and asthma
- Reduce fumes, particles in suspension and odours
- Cooling capacity efficiency is increased as the outdoor temperature rises.
- Low consumption, up to **80% more economical** than conventional equipment
- Easy to install and minimum maintenance
- Reduces static electricity



Conventional cooling systems - disadvantages

- Largely recirculates the same stale air
- Doors and windows have to stay shut
- Dries the air, which is detrimental to people with respiratory ailments
- Recirculated air can carry germs, odours and environmental contaminants
- Its operating effectiveness is reduced as the outside temperature rises
- High energy consumption
- More complex and costly installation and maintenance



TYPICAL TEMPERATURE REDUCTIONS USING EVAPORATIVE COOLING

Outside ambient temperature °C	Percentage relative humidity						
	20%	30%	40%	50%	60%	70%	80%
20	12,0	13,0	14,5	15,5	16,5	17,5	18,5
25	16,0	17,0	18,5	20,0	21,0	22,0	23,0
30	19,5	21,0	22,5	24,0	25,0	26,5	28,0
35	23,0	25,0	26,5	28,5	30,0	31,5	32,5
40	26,5	29,0	31,0	32,5	34,5	36,0	-
45	29,0	32,5	35,0	-	-	-	-



- **Perfect for:**
 - large factories, industrial complexes
 - printing works
 - plastics and textiles industries
 - laundries
 - farms and glasshouses
 - factory units
 - research centres
 - foundries, etc.