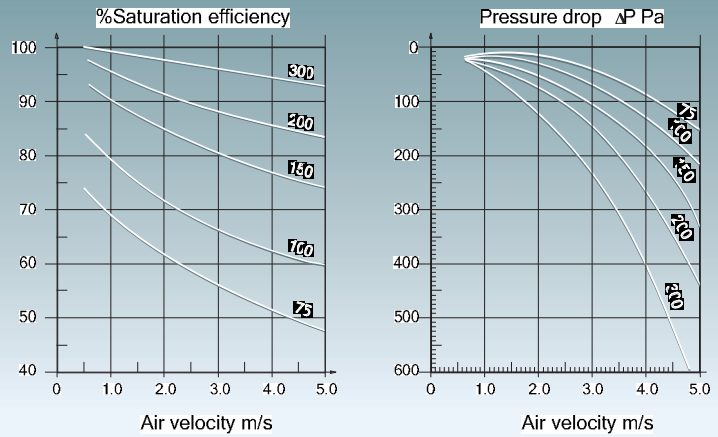
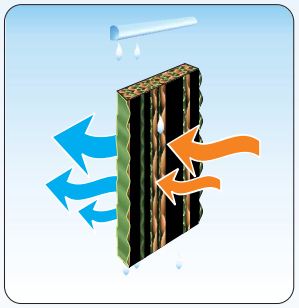
PERFORMANCE CURVE



PERFECT COOLING PACKAGE

ROOTS-dek is the finest evaporative cooling unit
and its humidification media is the finest cooling pad available worldwide.

The best way to get the maximum mileage from
evaporative cooling systems is when all the parts
of the cooling process are working in harmony - the design , the control systems, the fan configuration and the over all dimensioning.



ROOTS COOLING SYSTEMS PVT. LTD.

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e - mail: rcs@rootsdek.com, web : rcs-india.com

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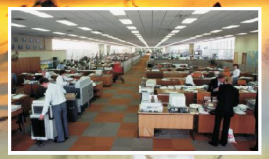
• Kolkata:e-mail:info@rootsdek.com • Coimbatore:e-mail:cmb@rcs.org.in

Double Skinned Airwashers and Ventilation Units



DOUBLE SKIN ROOTS-DEK® EVAPORATIVE COOLING MACHINES

High PERFORMANCE

Double-skin units offer the following advantages

- Robust construction
- High IAQ
- Flexibility
- Low Noise
- Energy Saving
- Higher cooling
- Aesthetically appealing

ISO 9001 : 2000 COMPANY

WHY USE EVAPORATIVE COOLING ?

Evaporative cooling is nature's own way of adding moisture. Hot and dry air is passed over the wetted surface where it picks up moisture. The highly absorbent cellulose based media ensures a very large contact surface between water and air providing a simple and reliable method of humidification.

THE IMPORTANCE OF BLEED OFF

The bleed off rate is the water flow that needs to be constantly drained off to keep the mineral concentration in the water to an optimal level. When water evaporates and to avoid a build-up of insoluble minerals on the pads surface (scaling) some of its re-circulated water must be discharged and replaced with fresh water. This shall result in pads having long lasting durability with high performance & efficiency.

HIGH COOLING EFFICIENCY

The cooling pad is manufactured by bonding corrugated cellulose sheets with different flute angles. The paper is carefully selected to precise specifications. Then proprietary curing and gluing materials & processes are used which are critical to the end product. Each cellulose based pad meets the highest standards of performance and durability.

LONG LIFE

The impregnation stiffens the material enough to make it self-supporting. The pad is installed at an angle in such a way that it

CONSTRUCTION FEATURES

The framework comprises of extruded aluminum profiles and 3D corner joints. The double - skin sandwich panels are fabricated with high polymer polyester coated, pre painted, galvanized steel sheet with protection film on top. The panels are CFC free polyurethane foam injected with desired density and thickness resulting in high rigidity and sound attenuation characteristics. The unit is mounted on mild steel channels.

FAN-SECTION

The fan section is designed for double inlet double width forward curved blowers with medium & high static pressure. The centrifugal fans are belt driven and are isolated from the main structure with anti-vibration spring isolators and flexible canvass connection. This guarantees a minimum level of vibration and noise. Backward curved DIDW fans can also be supplied as an option.

HUMIDIFICATION SECTION

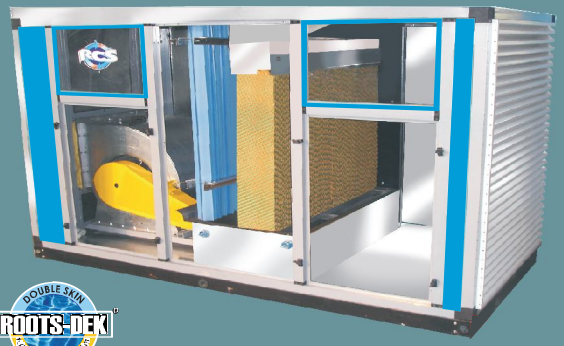
The humidification section consists of a fibreglass rein- forced plastic/stainless steel water tank with a fibre glass reinforced plastic distributor with medium class internal GSS/PVC piping. Alternately multiple slotted water supply trough is also available for ease of water distribution & maintenance. The cellulose based media attains 90% saturation efficiency at 500 fpm face-velocity with 200mm thickness. The internal piping is connected with a monoblock pumpset which is complete with all valves and fittings.

FILTER SECTION

A flat filter section is designed for 50mm

DOUBLE SKINNED AIRWASHERS GENUINE COMPONENTS

"Make a Difference"



COMPARISON OF ROOTS-dek COOLING MACHINE WITH OTHERS

Washer Type	Recommended Spray Water Flow Gpm /10,000 Cfm	Pump Hp. Per 10,000 Cfm 60% Efficiency {Head, Ft.}	Saturation Efficiency Percent	Washer Length In Direction Of Air Flow
Single Spray Bank	38	1..2{75'}	55%	48"
Opposed Spray Bank	81	2.6{75'}	86%	110"
Capillary Cell	90	2.4{75'}	98%	61"
P. V. CFill	40	2.0{30'}	65%	45"
Cellulose Fil {roots-dek}	7	0.25 {20'}	90%	30"
Wood Wool {as Per Pad}	5	0.10{10'}	70%	60"

Saturation Efficiency Can Be Pictured As The Ability Of The Charge The Leaving Air Quality To Approach The Saturation Curve On The Wet Bulb Line Of A Psychometric Chart.

$$\frac{DB\ in - DB\ out}{DB\ in - WB\ in} \times 100$$

{Information From "Evaporative Cooling For Comfort By Richrod G, Supple" Member Ashrae, As Given In "Ashrae Journal" August 1982}

Application Versatility

COMFORT COOLING AND VENTILATION

- Centralised residential units
- Retail shop and department stores
- Commercial kitchens
- Banks,Theatres and auditoriums
- School, colleges and universities
- Libraries and museums
- Airports and railway stations

INDUSTRIAL VENTILATION, PRESSURISATION AND DUST PREVENTION

- General shop floor cooling and ventilation
- Spot cooling of work stations and process lines
- Spot cooling of hot spot and hot zones
- Paint booths and paint lines
- Textile mills humidification
- Printing presses humidification and ventilation
- Laundries and Dry-cleaning Establishments
- Generator rooms and gas turbine inlets
- Warehouses and stores
- Pre-coolers for refrigeration compressors

AGRICULTURAL APPLICATIONS

- Poultry and livestock confinement buildings
- Greenhouse and livestock confinement buildings
- Hardening houses for tissue culture labs
- Agricultural produce storage buildings
- Hatcheries and egg rooms