takes CARE for LONGEVITY of your
EVAPORATIVE COOLING PADS

Spend little Save a lot
GENERAL MANAGEMENT TIPS TO IMPROVE EFFICIENCY AND LIFE OF EVAPORATIVE COOLING PADS

APPROPRIATE DESIGNING:

- Evaporative Cooling (EC) Pads should be installed with appropriate supports/frame.
- Avoid water absorbing material (such as cement) at EC Pads’ bottom guttering as such material exposes them to continuous humidity which shortens the life of EC Pads.
- Water Tank should be, properly, designed (divided into 2-3 portions) to avoid re-circulation of dirty water through the system which, gradually, keeps on clogging EC Pads. It would be of an additional significance, if capacity of water tank is kept in accordance with the requirements of circulating water, through the system. Proper covering of tanks is necessary to avoid surrounding contaminations to get in it.
- During construction of farm house, the side for the installation of EC Pads should be designed as to avoid their direct exposure to sunlight (as in a “EC Pads Room” or “Doghouse Plenum” or simply curtains, otherwise, in front at suitable distance from them) to prevent algae or bacterial growth. For directly exposed EC Pads, in farm environment, the installation of nylon net about 1 m before them is recommended to prevent small insects, dust, or unwanted particles to clog the air channels of EC Pads.

FLOW AND QUALITY OF WATER:

- Required Water Flow Rate, for 7 mm (0.28 “) flute height EC Pads, is 60 litres/minute/sqm (1.6 gal / min / sq ft) of top surface for up to 2000 mm (7.9 “) high EC Pads while Required Water Flow Rate, for 5 mm (0.2 “) flute height EC Pads, is 90 litres/minute/sqm (2.3 gal / min / sq ft) of top surface for up to 1000 mm high EC Pads.

  OR

- To supply water for EC Pads; water pump capacity should be around 5.5 litres/minute (1.5 gal / min) for 2000 x 600 x 150 mm (6 ½ ‘ x 23.6 “ x 6 ”) EC Pads (7 mm or 0.28 “ flute height) while the same for 1000 x 600 x 100 mm (3 1/3 ‘ x 23.6 “ x 3.9 ”) EC Pads (5 mm or 0.2 “ flute height).
- The proper water flow on the top and uniform distribution along the length of EC Pads would reduce the mineral build-up on them.
- Avoid operating EC Pads beyond range of pH of water between 6 and 8.
- Proper treatment of water is significant, on regular basis.
- Avoid water with high concentrations of calcium, bicarbonates or sulphates (more than 100 ppm). Proper bleed-off design and pre-treatment of water should be utilised to reduce the potential danger for the life of EC Pads.
- Avoid contaminating oxidising agents such as chlorine or copper compounds into the water.
- Allow EC Pads to completely dry, periodically (overnight), to reduce the bacterial/algae/fungus growth on them.
- Water tank and distribution pipes should be cleaned, on weekly basis.

BLEED-OFF CONTROL:

Bleed-off mode is designed not only to make up evaporated water from the system but it, also, supports in preventing the built-up concentrations within the water that could be harmful for the life of EC Pads. Bleed-off can, simply, be done by adding proper amount of fresh water into the circulating water. To control the proper bleed-off amount, the following is recommended.

1-pH Control:
- Water pH is the proxy of calcification residual in the water. The higher the pH, the lower the dissolvability of calcium and bicarbonates while the higher the concentration of residual in the water.
- The simplest way, to control the bleed-off amount, is that the pH of water, to be circulating in the system, is not exceeding 8.

2-Concentration Control:
- The analysis of ion-concentration (ppm) of water input such as calcium, bicarbonates, sulphates and water pH are necessary inputs for this method.
- The higher the concentration and the pH of water, the higher the bleed-off amount.
BLEED-OFF RATIO:

- General-rule-of-thumb is between 1-1.5 times of water evaporation, that is, if water is being evaporated at the rate of 100 litres/minute then the proper bleed-off amount would be 100-150 litres/minute (26 – 40 gal / minute)

CLEANING & TREATMENT OF EVAPORATIVE COOLING PADS

by

CID LINES’ Products

To keep Evaporative Cooling System, running efficiently, the water in the system must be treated with a wide spectrum biocide. The correct chemical(s) also increases its life and reduce the risk of contamination that could lead to a disease problem, as well. The recommendations of manufacturer(s) should be kept in considerations that the chemical(s), being used, should not damage the EC Pads/Systems. Check the water filters (if being used) and should remove sediments build-up, on monthly basis.

(I) Prior to Start-up of System:

Examine the EC Pads to determine if they are fouled with algae or heavy mineral scales.

To Clean Algae Build-up:

- Cool Clean @ 3.3 ml - 7.5 ml/litre (0.33 - 0.75 % or ½ to 1 oz / gal) of water.
- Allow the product to remain on the surface of EC Pads for 10 minutes.
- Flush/spray off with clean water.
- Repeat, if necessary.
- Drain the system and flush with clean water.

To Clean Mineral Scale build-up:

Choice of 2 methods;

(1) Add PHO CID to the system @ 7.5 - 15 ml/litre (0.75 - 1.5 % or 1 – 2 oz / gal) of water; Let this solution to circulate through the system until EC Pads are cleaned; Drain the system and flush with clean water.

(2) Foam or spray with TORNAX-S @ 30 - 45 ml/litre of water (3.0 - 4.5 % or 5 – 6 oz / gal) on the surface of EC Pads; Allow it to remain for 10 minutes; Rinse off with clean water; Drain the system and flush with clean water.

Refill the system with clean water.

(II) Initial Treatment:

Cool Clean @ 200 ml/1000 litres of water (0.02% or 1 oz / 40 gal) within the system as to acquire the desired results.

(III) Maintenance Treatment:

Cool Clean @ 55 ml/1000 litres of water (0.0055% or 1 oz / 150 gal) within the system, continuously, with the help of medicator or treat this way, in general, on weekly basis.

(Average consumption per US 22,000 broiler house is 7.6/3.8 litres/year (2 – 1 gal) while per 100,000 layer house 15.2/7.6 litres/ year (4 – 2 gal) respectively, for (II) and (III) combined)
With little EFFORTS and nominal EXPENSES;
Let’s assure you that you can save thousands on Evaporative Cooling Pads