



Cooling Towers

Cooling towers release internal building heat to the outdoors by evaporation, wherein hotter water molecules escape and cooler ones remain behind.

Biological Fouling

problem - All of the ingredients necessary for biological growth (warmth, moisture, sunlight or darkness, nutrients and food) are present in a tower. Microorganisms - algae, fungi and bacteria - cause biological fouling which can corrode metals, rot wood, “gum up” heat exchangers and generally make for a dirty, “fouled” tower. The challenge is to inhibit any visible growth, not kill growth which has already occurred.

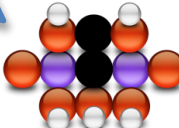
 **solution - Silver Ions** (released by the silver ion generator) are potent, broad-spectrum biocides which kill most micro-organisms, including *legionella*, but completely harmless to humans.

 **solution - QUAT** (supplied in the diffusion feeder) is a surface active agent or detergent. It reduces the ability of algae, bacteria and fungi to exclude outside materials from the micro-organism cell and interior materials from leaking out. Metabolism is disrupted and the organism dies.

Scaling & Corrosion

problem - Water evaporating from a cooling tower is pure, so the mineral concentration of the water left behind increases to the point of forming scale deposits.

solution - water and scale-forming minerals are “bled” out of the tower to the sewer at a controlled rate and concentrations are maintained within a safe level.

 **solution - HEDP** (supplied in the diffusion feeder) is a “denucleating” agent which alters the growth-pattern of scale crystals so they are small, distorted and structurally weak. These do not build up on tower surfaces, but leave the tower dissolved in bleed water.

