Evaporative Cooling Tower With Nylon Net As Filling Material

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Abstract

A cooling tower functions as a heat exchanger where water and air are placed in contact with each other to reduce the temperature of the water. Cooling water is one of the major constituent industry's annual electricity bills. This situation raise the need for research in techniques employed for functioning of cooling tower. The project undertaken for research is based on evaporative cooling tower with nylon as filling material. This paper presents how the energy consumption of evaporative cooling tower can be reduced without affecting the performance of cooling tower with the help of nylon net. For increasing the travelling length of circulation of water, used the different types of patterns of nylon net such as zig-zag pattern, full length zig-zag pattern, and vertical parallel pattern. The circulation fan which is generally used in most of cooling tower is totally eliminated results in saving of electricity consumption. The position of inlet hot water nozzle results in increase heat transfer rate due to more time circulation of water. The fabrication of direct spray type evaporative cooling tower has an advantage of simplicity in construction, portable and reduced maintenance because of elimination of PVC matrix required for induced draft type cooling tower.

Keywords

1. Evaporative cooling
2. Nylon net
3. Energy saving
4. Reduce maintenance

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