

ABSTRACT

Evaporative cooling is a process that carried out by connecting directly between air and water vapor. An evaporative cooler in this case to cooling the air in a stainless steel vessel. Evaporative cooling is a process that resulting a change from the sensible heat to latent heat because of allowed direct contact between the air and water vapor. The objective of this research is to know the influence of the difference beetwen incoming airflow direction to the heat absorption which occurs on water-cooling by utilizing the effect of evaporative cooling. This research was conducted by experiment on stainless steel vessel with 10cm of height, 10cm of diameter and 3mm of thickness which is filled by water and coated with wet cloth. The research variable is the direction of airflow with variation horizontally and vertically to water vessel. Wind fan speed is 3.3 m / s. The required data are water temperature and ambient temperature data. The data is used to calculate the amount of heat absorption that occurs in water. The results of this research shows that the direction of the airflow that enter the water vessel give an effect on the absorption of heat that occurs. In the direction of the airflow vertically to the water vessel, the heat absorption is 2,016 watt, higher than the direction of the airflow vertically to the vessel which has only 1,792 watt of heat absorption.

Keywords: *Evaporative cooling, indirect evaporative cooling, heat absorbtion.*