**Natural Convective Heat Transfer From Narrow Plates**

**Abstract**

Natural convection is a mechanism, or type of heat transport, in which the fluid motion is not generated by any external source (like a pump, fan, suction device, etc.) but only by density Differences in the fluid occurring due to temperature gradients. In natural convection, fluid surrounding a heat source receives heat, becomes less dense and rises. The surrounding, cooler fluid then moves to replace it. This cooler fluid is then heated and the process continues, forming convection current; this process transfers heat energy from the bottom of the convection cell to top. The driving force for natural convection is buoyancy, a result of differences in fluid density. Steady state natural convection from heat sink with narrow plate-fins having parallel arrangement mounted on inclined base was experimentally investigated. Aluminium heat sink with two different lengths viz. 200mm width 140 modelled. Fin thickness was kept constant at 5mm. Fin height was selected 20mm and 30mm for 200mm length of fin while it was Effect of fin height, fin length, inclination of base was determined. And also checking these results with different material properties. Finally we can conclude how the temperature and heat flux is varying while changing fins height and also which material is most suitable for these thermal boundary conditions.

Keywords: Temperature, Stress, Strain, Thermal barrier etc.