

Thermal Performance of Hollow Pin-fin in Natural Convection

Chandrakishor L. Ladekar^{1*}, Atharva Ghate², Sarang Gadewar³

^{1*,2,3} Mechanical Engineering Department, PimpriChinchwad College of Engineering, SavitribaiPhule Pune University,
Sector-26, Nigdi, Pune-411 044, India,

Abstract: Fins act as heat dissipating elements, selection of proper geometry plays crucial role in increasing rate of heat transfer. The work has been undertaken to investigate comparative thermal performance of solid and hollow pin-fin. An experiment was performed to calculate the temperature distribution, heat transfer coefficient and heat transfer through the hollow pin fin. Hollow types of pin fins which are subjected to natural convection of heat transfer was tested at varying heat input. The straight circular pin fin of equal length and external diameter was selected and were compared for their thermal performance analysis. The experimental results show that the hollow fins are more effective than the solid fins.

Keywords: Pin-fin, Hollow Pin-fin, solid pin fins, Natural convection, Thermal Performance

