Abstract

The application of mathematical modeling, together with practical designs and efficient fabrication methods, has had considerable impact on the improvement in capital costs of aluminum reduction over the last thirty years. This is particularly the case for the bus bar design, which represents 10-15% of the total pot line cost. Effective bus bar designs must also take account of the many practical needs, including optimization of the bus bar mass (current density), ease of fabrication, and safe electrical isolation. This paper deals with the energy balance equation. Solving the equation the temperature rise with respect to the ampacity of the load condition. Thermal time constant of the particular temperature to reach the steady state
are also discussed and tabulated. The Conductor materials such as copper and Aluminum are also compared. The performance of the feeder section has the good agreement between the experimental and calculated values.

References


Index Terms

- Computer Science
- Applied Science

Keywords

Energy Efficiency  Heat Transfer  Ampacity.