

Preheating a copper rod and a connector for an epoxy curing application

Objective To preheat a portion of the copper rod and a rectangular connector to temperature prior to epoxy curing during a manufacturing process for electrical turnbuckles

Material

- Customer supplied plated copper rod (12" x 2" x 1"/305mm x 51mm x 102 mm) and connector

Temperature 302 °F (150 °C)

Frequency 25 kHz

Equipment

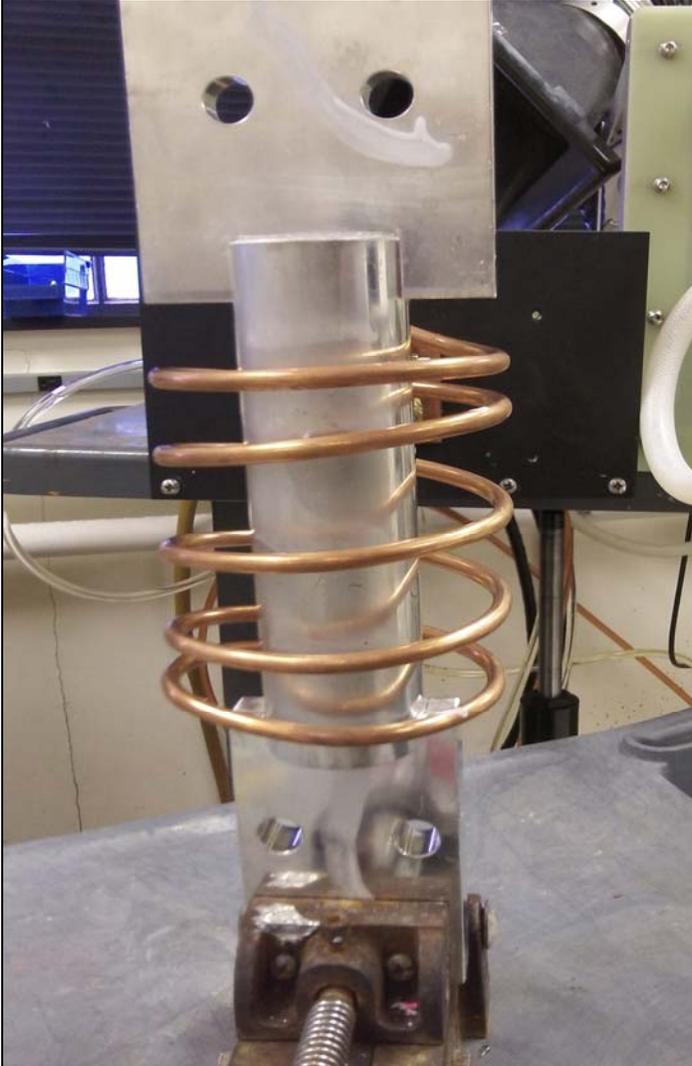
- Ambrell EKOHEAT 50kW 15-45 kHz induction heating system equipped with a remote workhead containing four 21 µF capacitors
- A single position seven-turn helical induction heating coil designed and developed specifically for this application

Process The copper rod and connector were placed inside the induction heating coil and the power was turned on. The part heated to temperature within 55 seconds. After being heated to temperature, the part was moved and an epoxy curing/molding process took place.

The client was using a large oven to preheat these rods, which was cost inefficient. Induction offers a faster and more cost-efficient heating method.

Results/Benefits

- Speed: Induction heated the part to temperature quickly
- Efficiency: Induction is a far more efficient method of heating these parts to temperature when compared to their large oven
- Precision: Induction made it possible to heat only the parts of the rod that required heating
- Footprint: The client was using a large oven, and now they save considerable floor space with the modestly-sized EKOHEAT 50kW/30kHz



The assembly inside the induction heating coil