

## Preheating a brass rod for forging

**Objective** To preheat a brass rod to temperature for a forging application; the client is looking to achieve faster heating than they were achieving with a torch

**Material**

- Brass cylinders (50 mm/2" long x 35 mm/1.4" outside diameter)

**Temperature** 1400 °F (760 °C)

**Frequency** 86 kHz

**Equipment**

- Ambrell EKOHEAT 15 kW 50-150 kHz induction heating system equipped with a remote heat station containing three 1.5  $\mu$ F capacitors
- A multiple-turn helical induction heating coil designed and developed specifically for this application

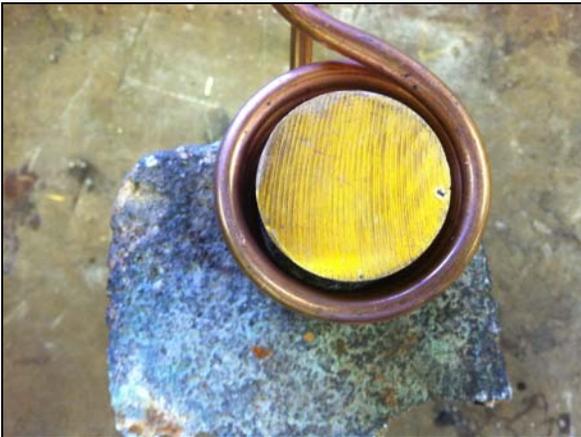
**Process** A thermal indicating paint was applied to the rod – when the rod turns red, the part has achieved temperature. The rod was inserted into the coil and the part quickly heated to 1400 °F (760 °C). The heat cycle time was approximately 45 seconds.

**Results/Benefits**

- **Speed:** The client wanted to cut the cycle time it was getting from a torch in half, and the Ambrell induction process was able to meet that goal.
- **Efficiency:** Induction is an energy-efficient medium of heating, so it enabled the client to not only save time, but money too.
- **Safety:** The client will benefit from a cooler, safer work environment thanks to induction heating.



The rod inside the induction heating coil.



The rod inside the coil as viewed from above with the thermal indicating paint applied.