

Heating aluminum wire to create screens

Objective To heat aluminum wire to temperature for a wire coating curing application

Material • Aluminum wire (0.145"/3.7 mm)

Temperature 450 °F (232 °C)

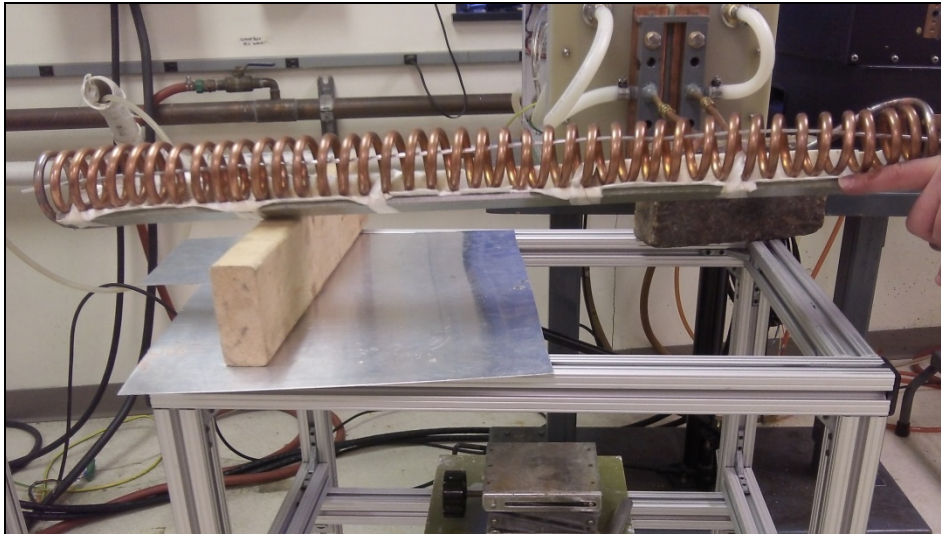
Frequency 18 kHz

Equipment • Ambrell EKOHEAT 50 kW, 15-45 kHz induction heating power supply with a remote workhead
• A single position, forty turn helical coil (2.5'/0.8 m long) designed and developed for this application

Process Temperature indicating paint was used to indicate when the wire met temperature. It took just 3 seconds for the wire to achieve 450 °F (232 °C). In production, there will be a coating which may require slightly more energy. Since it was not included during testing a precise number cannot be given, but heating time should be in that vicinity.

Results/Benefits

- Speed: Induction will double production due to more rapid heating than infrared lamps can offer; with induction 100 feet per minute can be run instead of 50 feet per minute with infrared
- Repeatability: Induction is highly repeatable and easy-to-integrate into manufacturing processes
- Working Environment: Induction introduces less heat into the work environment than competitive processes
- Applications Lab: This client was working with a competitor but decided to work with Ambrell due to Ambrell's superior responsiveness and expertise



The induction coil with the wire inside it.