

## Soldering Four Fusible Copper Strips

- Objective:** To heat copper strips of various sizes to 400 °F (204 °C) for a soldering application; the client was heating two fusible strips concurrently but would like to heat four concurrently with induction
- Frequency:** 175 kHz
- Equipment:**
- Ambrell EASYHEAT<sup>™</sup> 5 kW, 150-400 kHz induction heating system equipped with a remote workhead
  - A single position four turn double wound helical coil designed specifically for this application
- Material:**
- Copper strips
  - Solder
- Temperature:** 400 °F (204 °C)
- Process:** Initial tests were conducted to optimize the power delivered to the copper strip. Four parts were placed under the coil approximately 0.25 inches (6.4 mm) away from it. The power was turned on and after seven seconds the larger parts began to separate indicating that the solder had reached the flow point. A heating time of 10 seconds will ensure good flow. Placing the center of the coil turn over the center of the joint area offers the best performance for this application.
- Benefits:**
- Speed: It took 10 seconds (or less) to heat four copper strips concurrently, resulting in a boost in throughput for the client
  - Precise, repeatable heating: Induction is a highly repeatable process that heats just the area of the copper strip that requires it
  - Safety: There is no open flame with induction, which makes it safer than competitive heating methods



Four copper strips being heated concurrently with an induction coil.