Heating Wires and Strips for Coating Removal

**Objective:** Removal of the coating on various wires and strips

**Equipment:** Ambrell EASYHEAT™ 4 kW 150-400 kHz induction heating system with a workhead and coil specifically designed for this application

**Frequency:** 380 kHz

**Material:** Various polymer-coated aluminum strips and enamel-coated copper strips and wires

**Testing:** A specially-designed single position multi-turn helical coil was built to generate the required heating for the application. Initial tests were conducted to optimize the power delivered to the parts.

It was observed that all parts coated with enamel heated as expected by the customer. The coating darkened to black when heated. It was then easily scrubbed off. The copper wires required between 5 and 10 seconds to heat the enamel coating sufficiently.

The polymer coating on the aluminum strips behaved differently when heated. Visually, the coating turned brown and bubbly when the aluminum strip was heated. To avoid overheating and melting the aluminum, the best way to remove the polymer coating was to heat it only to the point of being soft enough to scrape off with a utility knife. This heating can be achieved in 10 to 15 seconds.

**Benefits:**
- **Speed:** Both material types heated quickly to enable coating removal
- **Repeatability:** Induction delivers the same result time after time, bringing consistency into their process
- **Safety:** Induction does not present an open flame into the work environment like methods such as torch heating, resulting in a safer working environment
The large copper strip after heating and scrubbing.