Heating a coated copper wire for a stripping application

Objective

To heat a copper wire to temperature to enable stripping of a plastic coating; the client is looking for induction to expedite their cold hand stripping process

Material

- Coiled copper wire (0.01”/0.25 mm O.D.) with a plastic coating

Temperature

400 °F (204 °C)

Frequency

380 kHz

Equipment

- Ambrell EASYHEAT 2kW, 150-400 kHz induction heating power supply with a remote workhead containing two 0.33 µF capacitors
- A helical induction heating coil designed and developed specifically for this heating application

Process

The top 1” (25 mm) portion of the plastic coated wire was placed inside the helical coil and heating began. The top turn rapidly started to heat and the plastic melted after about 10 seconds of heating. Heating the top portion of the plastic coating on the wire enabled the remainder of the wire to be stripped.

Results/Benefits

- Speed: The client was stripping these coated wires entirely by hand, so using heat can save them considerable time
- Precise, controllable heating: With induction, a repeatable process can be created so the client will get a good, consistent result that will melt the plastic and not the copper every time
- Minimal footprint: EASYHEAT induction heating systems require a minimal amount of space, so it will easily fit into their manufacturing process

The coiled, plastic coated copper wire inside the induction heating coil

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