



Heat a compacted litz wire bundle for stripping and then braze to a copper block for a motor

Objective To heat a compacted litz wire bundle for wire stripping then braze the litz wire bundle to a copper block for use in an automotive motor.

Material Compacted litz wire bundle 0.388" (9.85mm) wide, 0.08" (2.03mm) thick
copper bar 0.5" (12.7mm) wide, 0.125" (3.17mm) thick and 1.5" (38.1mm) long
braze wire & white flux

Temperature 1400 °F (760 °C)

Frequency 300 kHz

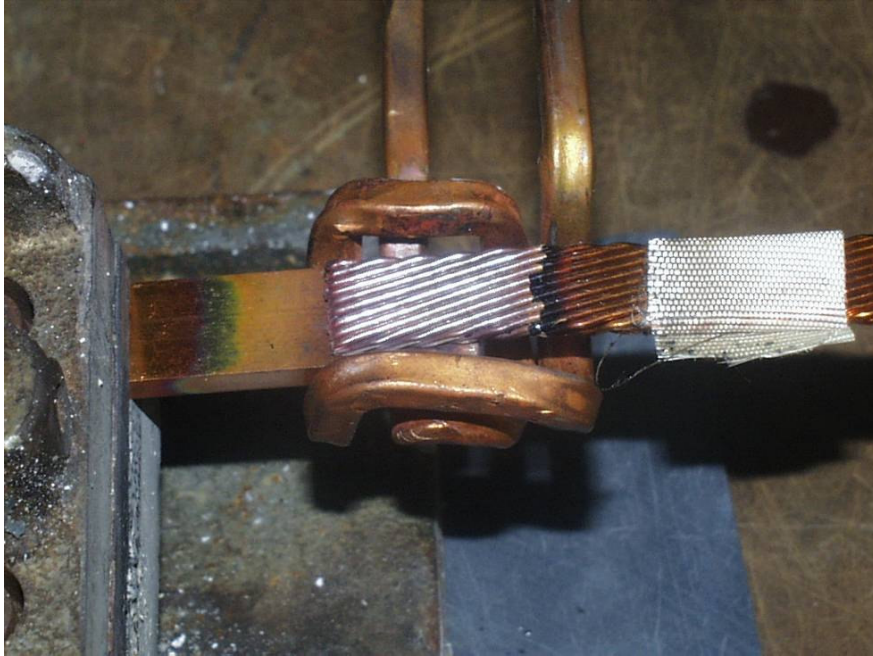
Equipment

- Ambrell 5.6 kW induction heating system, equipped with a remote workhead containing two 1.5µF capacitors for a total of 0.75µF
- An induction heating coil designed and developed specifically for this application.

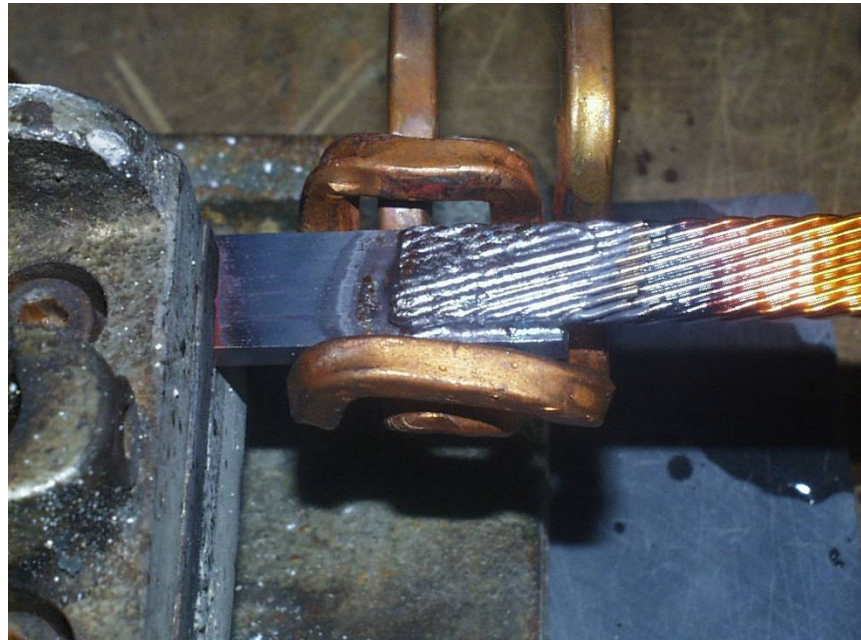
Process A three turn helical coil is used for the wire stripping process. The litz wire bundle is placed in the coil for 3 seconds to strip the lacquer 0.75" (19mm) from the end of the bundle. The wire bundle is then scraped with a metal brush to remove the burnt lacquer.
For the brazing process a two turn channel coil is used. The litz wire and copper assembly are placed in the coil and the braze wire is fed by hand. The braze is completed in 45-60 seconds.

Results/Benefits Induction heating provides:

- Consistent, repeatable results
- Faster process time, increased production
- Even distribution of heating



Litz wire bundle and copper block in coil



Litz wire and copper block brazed