Annealing of stellite tips on saw blades

Objective Annealing of the affected zone of a saw blade after the stellite tips have been welded in place

Material C75 carbon steel saw blade with stellite tip 0.06" (1.5mm) thick with a blade height of 0.55" (14mm)

Temperature 1292 ºF (700 ºC)

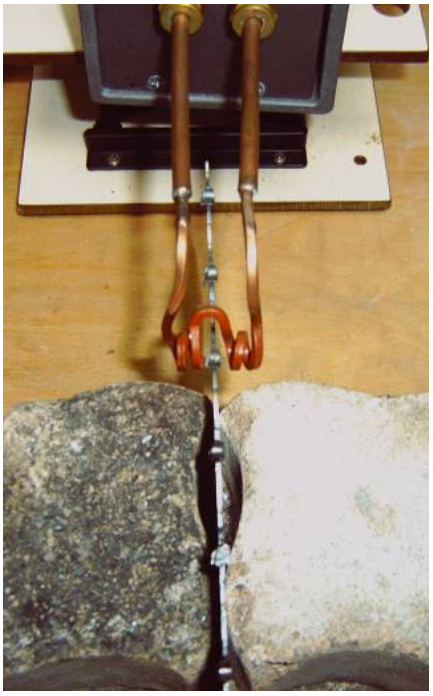
Frequency 390 kHz

Equipment
- Ambrell 2.4 kW induction heating system, equipped with a remote workhead containing two 0.33µF capacitors for a total of 0.66µF
- An induction heating coil designed and developed specifically for this application.

Process A split four turn helical coil is used so the blade can move evenly though the coil. Each tip of the blade is heated for 5 seconds as it passes through the coil to anneal the affected area.

Results/Benefits Induction heating provides:
- Repeatable, rapid and accurate heating cycles which are ideal for in-line production processes because induction can produce
- Hands-free heating that involves no operator skill for manufacturing
- Non contact and energy-efficient heat

Side view of tip in coil



View above coil

Finished blade showing heated zone