Heating a steel grenade for a disposing application

Objective  To heat a steel grenade to 800 °F (427 °C) for a disposing application

Material  • Steel “dummy” grenade

Temperature  800 °F (427 °C)

Frequency  245 kHz

Equipment  • Ambrell EASYHEAT 10 kW, 150-400 kHz induction heating power supply with a remote workhead containing two 1.00 μF capacitors for a total of 0.5 μF.
• A single-position two-turn helical induction heating coil designed and developed for this application

Process  Temperature indicating paint was applied to the outside of the grenade casing. The grenade was then placed inside the coil and power was turned on. After two seconds the painted indicated that the part achieved 800 °F (427 °C).

Results/Benefits  • Direct, precise heating: Only heats the portion(s) that need(s) to be heated
• Repeatability: Induction is highly repeatable and easy to integrate into manufacturing processes
• Fast heating: Significantly faster than other techniques such as torch and oven heating
• Clean and flameless: Which makes it safer and more repeatable
The “dummy” grenade inside the helical induction heating coil.