



Heating a steel pipe to transport melted magnesium

Objective To heat a steel pipe to 1100°F (593°C) to transport melted magnesium

Material Steel pipe 14.5' (4.42m) long with a 3.5" (88.9mm)OD

Temperature 1100°F (593°C)

Frequency 9 kHz

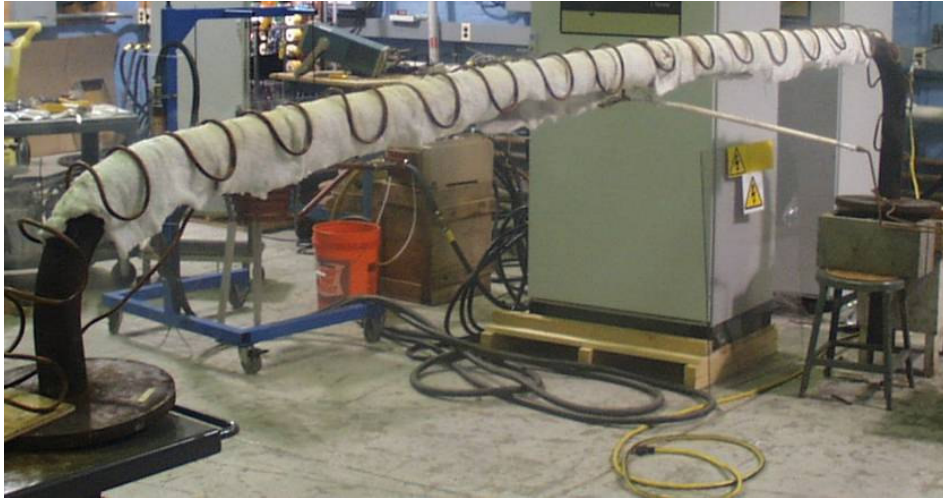
Equipment

- Ambrell 125 kW induction heating system, equipped with a remote workhead containing one 25μF capacitor.
- An induction heating coil designed and developed specifically for this application.

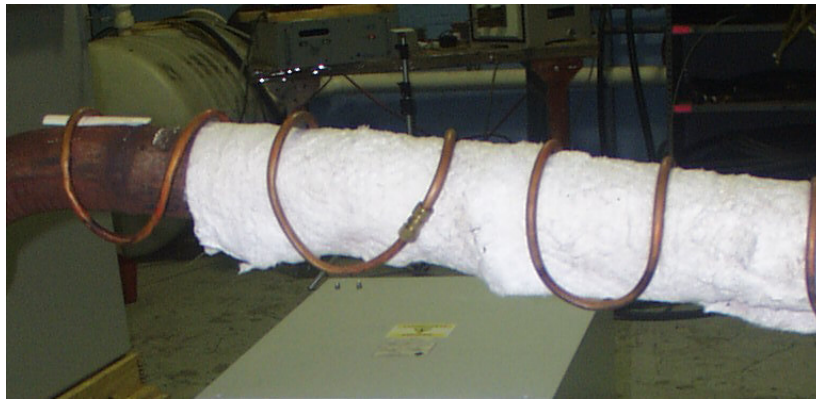
Process A specially designed double U channel coil the length of the pipe is used in this application. The pipe is placed inside the coil and power is supplied. The voltage is set and the power output is 100kW. As the part reaches the Currie point the power drops to 80kW and the voltage must be increased to achieve the 100kW. The pipe reaches 1100°F (593°C) in 20 minutes.

Results/Benefits Induction heating provides:

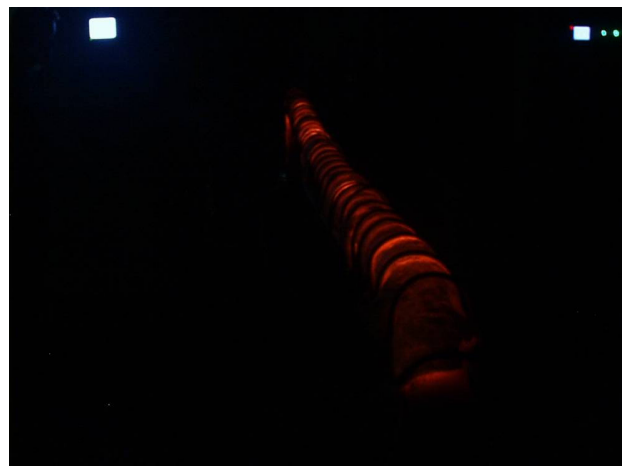
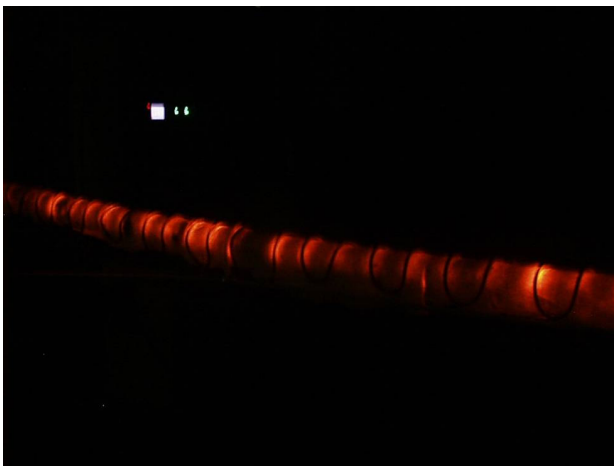
- Controllable and repeatable heat pattern that keeps material in liquid form
- Environmentally friendly
- Even distribution of heating
- Movable workhead that can be located away from the power supply



Pipe and coil set up for heating



View of coil wrapping around pipe



Pipe is heated uniformly so magnesium can flow through it