Heating a steel mold for rubber seal vulcanization

Objective  To heat a steel mold evenly to 392ºF (200ºC) to be used on a press for rubber seal vulcanization

Material  Steel mold 13.4” (340mm) diameter, 2.16” (55mm) width, approximately 77.2 lbs (35kg)

Temperature  392ºF (200ºC)

Frequency  78 kHz

Equipment  • Ambrell 30 kW induction heating system, equipped with a remote workhead containing eight 0.3µF capacitors for a total of 0.6µF
• An induction heating coil designed and developed specifically for this application.

Process  Two thirteen turn pancake coils are used to heat both sides of the mold simultaneously for 170 seconds to reach an external temperature of 392ºF (200ºC). The power is continually decreased over the next 390 seconds to reach a uniform temperature of 392ºF (200ºC) ± 41ºF (5ºC) throughout the mold.

Results/Benefits  Induction heating provides:
• Repeatable and consistent heat
• Quicker process time, increased production
• Even distribution of heating
Side view of coil in position

End view of mold in between the two coils