Hot forming a steel pipe

**Objective**  
To heat a magnetic steel pipe to the targeted temperature to enable pipe bending; the objective is to create u-bends in pipes for boiler systems.

**Material**  
- Steel pipes (2.5”/64 mm OD bent steel pipe)

**Temperature**  
2010 °F (1099 °C)

**Frequency**  
8.8 kHz

**Equipment**  
- Ambrell EKOHEAT 250 kW, 5-15 kHz induction heating power supply with a remote workhead containing eight 6.63 μF capacitors for a total of 53 μF.
- A single position six-turn channel induction heating coil designed and developed for this application.

**Process**  
The steel pipe was placed inside the induction coil, and it heated to temperature within 120 seconds with an Ambrell EKOHEAT 250 kW/10 kHz induction heating system.

**Results/Benefits**  
- **Speed:** A large steel pipe heated to the targeted temperature quickly.
- **Repeatability:** Induction is highly repeatable and easy-to-integrate into manufacturing processes.
- **Precise heating:** Induction is able to target the portion of the tube that requires bending while not heating the remainder of the tube.
- **Energy efficiency:** Induction offers fast, flameless, instant on/instant off heating.
The tube, heated to the targeted temperature, inside the channel coil

The tube after being withdrawn from the coil; the heat pattern is evident