INDUSTRY GUIDE

Furnaces for Steel Forging, Casting & Heat Treatment

Reheating, hardening, tempering, annealing and stress relieving furnaces for forging shops and foundries.

Forging shops, foundries and heat treaters spend most of their energy on heating metal. Bars and billets are heated to forging temperature, castings and forgings are annealed or normalised, parts are hardened and tempered, and fabrications are stress relieved. In many Indian forging clusters these furnaces still burn liquid fuel through manual burners with no temperature measurement. That means scale, overheating and guesswork.

Heating processes in this industry

Forging heat	about 1,100–1,250°C for steel bars, billets and rod ends
Hardening	steel heated above its critical temperature, then quenched in oil, water or polymer
Tempering	150–650°C, depending on the hardness required
Sub-critical annealing	about 650–720°C
Stress relieving	about 550–650°C, about 1 hour per 25 mm of section
Post-weld heat treatment of carbon steel	about 550–620°C (per EN 13445 / PD 5500 ranges)
Die pre-heating	about 150–300°C
Aluminium T6	solution treatment about 500–540°C, ageing about 150–200°C

Equipment AHS builds for this industry

- Rod Heating Furnace
- Hardening Furnace
- Tempering Furnace
- Tempering Pit Furnace
- Annealing Furnace
- Bogie Hearth Furnace
- Stress Relieving Bogie Hearth Furnace
- Chamber Type Furnace
- Salt Bath Furnace
- Die Preheating Oven
- Core Baking Oven
- Industrial Gas Burner

Why AHS

- More than 120 documents on bogie hearth furnaces, for steel, power and hydro-engineering users
- Multi-zone bogie furnaces held to ±5°C at 500–950°C, with outer walls within about 25°C of ambient
- Electric chamber furnaces to 1,150°C with Kanthal A1 elements and PLC data logging
- Conversion of oil-fired furnaces to PNG or LPG with new burners and gas trains
- Erection and commissioning by our own team; inspection reports with temperature tests
- Exports including bogie hearth stress-annealing furnaces to Nepal