

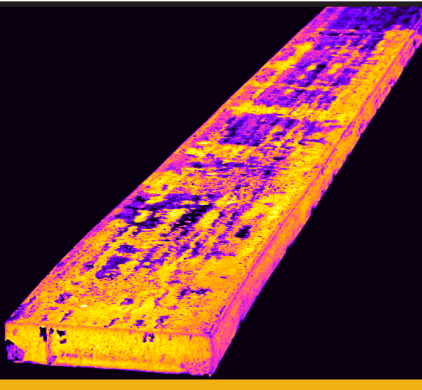
HOT FORMING OF METALS

The Opportunity

Hot forming operations include e.g. forging, press forging, bending, press hardening and other processes.

Due to the continually increasing quality demands on materials – especially on steel – the requirements regarding the adherence to tight temperature limits in hot forming processes are becoming ever more stringent. In hot forming

applications, accurate and precise heat treatment temperatures are instrumental in meeting the specified quality requirements and achieving optimum properties of work pieces. In addition, closed-loop process control and improved documentation of measured data are required.



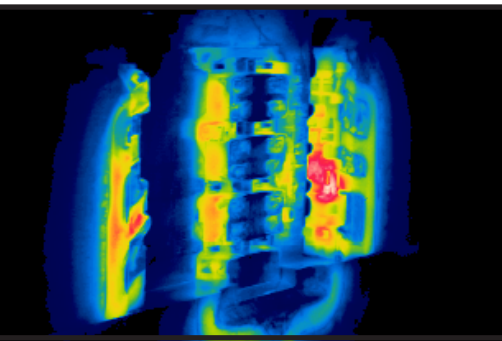
Steel Bar Forging

Our Solution

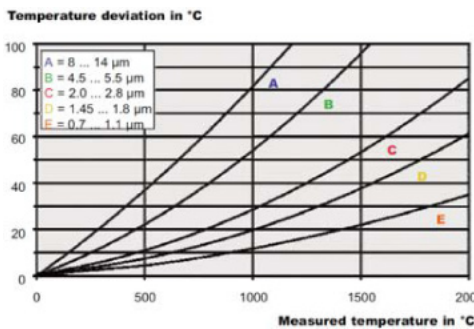
To minimize the systematic measuring errors that may be caused by external influences (e.g. surface variations, reflections), temperatures on metal surfaces should always be measured at the shortest possible wavelengths. This implies that the pyrometers and thermal imagers should measure in the near infrared range, depending on the desired process temperature.

We offer a wide range of system solutions, including short-wavelength pyrometers and thermal imagers, and a fully integrated software solution.

- IMPAC portable pyrometer: IS/IGA 8
- IMPAC process pyrometer IS/IGA 140, IS/IGA50-LO plus, IS/IGA 320
- MIKRON thermal imager MCS640 with LumaSpec™ software
- IMPAC PI 6000 – programmable, fast controller for process control
- Documentation systems IMPAC MultiTemp Logger and TQCS
- Robust cooling jackets and protective enclosures



Press Forming Process



Measurement error with emissivity setting off by 10%



Your Benefits

- ✓ Highly accurate and very fast temperature measurement
- ✓ Improved process control and management
- ✓ Continuous process temperature monitoring
- ✓ Enable documentation of process temperatures