

# Heat Treatment



APG has extensive heat treatment facilities, which include through hardening, tempering, normalising, carburising and the case hardening of components.



APG has a comprehensive heat treatment capability which covers a range of processes including:

**Tempering  
Carburising  
Case Hardening**



## Laboratory Services

For carburized and case hardened components a test sample of similar material, is included in the furnace process.

On completion of processing the test sample is sectioned and subjected to the following examination:-

- Surface hardness as measured in Rockwell '91C'92
- Core hardness as measured in Rockwell '91C'92
- Metallographic preparation for microscopic examination
- Un-etched -'96 Micro hardness plot of hardness track to determine effective case depth
- Etched -'96 Examination of case and core microstructures
- Measurement of surface carbon concentration

All test samples are clearly identified to relate to a furnace charge and are stored for a minimum period of two years

All documentation relating to each charge is likewise collected and stored.

Full certification can be provided to include hardness values obtained, case microstructure, case depth hardness track, etc.

Results from all furnace charges are retained in both hard and electronic formats.

- Design Consultancy
- Gear Manufacture
- General Machining
- Heat Treatment**
- Assembly
- Repair and Overhaul
- Test

**Heat Treatment**

**Ipsen Sealed Quench Furnaces TQ7 & TQ9**

**Capability:**

- **Effective Chamber Capacity (TQ7): 1200mm x 600mm x 430mm**
- **Effective Chamber Capacity (TQ9): 1200mm x 600mm x 760mm**
- **Weight Limit: 500Kg**
- **Temp Range: 800 - 930°'b0C**
- **Quench Tank: ISORAPID 277 HM**

**Wild Barfield Tempering Furnace**

**Capability:**

- **Effective Chamber Capacity (TQ7): 800mm dia x 1500mm depth**
- **Weight Limit: 1200Kg**
- **Temp Range: 0 - 200°'b0C**

**Wild Barfield Vertical Pit Carburiser**

**Capability:**

- **Effective Chamber Capacity (TQ7): 800mm dia x 1500mm depth**
- **Weight Limit: 1200Kg**
- **Temp Range: 800 - 950°'b0C**