

## Temperature Measurement Tests

GIWEP is performing temperature measurement tests on industrial furnaces for many years now.

Performing a temperature measurement test a heating stock (e. g. slab, ingot, billet, plate) will be prepared with thermocouples at different positions and depths. While in furnace the heating stock temperatures will be continuously measured and recorded in a data logger. The measured data serve as an examination of heating process and conclusions regarding constructive conditions, heating and control technology of the furnace can be drawn.

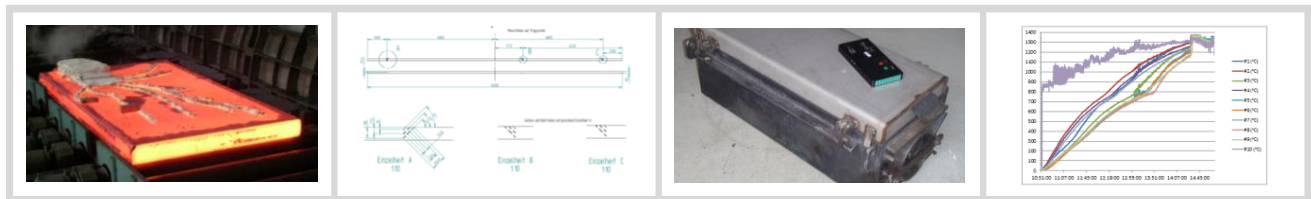
Temperature measurement tests on industrial furnaces will be performed in i. a. following cases:

- Studies on evaluation of necessary modernization needs
- Approval and performance records after retrofits and modernizations
- Periodical monitoring of furnace status
- Furnace certifications, Temperature Uniformity Surveys (TUS) and System Accuracy Tests (SAT)

We offer two types of temperature measurement tests:

- Data logger test – a data logger inside of an insulation vessel will be transported together with a heating stock through the furnace
- Test with trailing elements– the measuring thermocouples will be passed through the entire furnace chamber to a data logger outside the furnace

The choice of measuring system depends on potential furnace or heating stock restrictions.



### Measuring Equipment

- Data logger: PhoenixTM
- Signal connectors for 10 / 20 thermocouples NiCr-Ni type K
- Measuring range 0 .. 1400 °C
- Recording capacity 130,000 measuring values  
number of measurement channels and recording interval may be configured
- several insulation vessels for different heating stock dimensions and measurements up to 4 hours at 1400 °C
- Fast evaluation of tests by using logger software
- Data export to Excel, Word etc.

### Typical Division of Supply

#### GIWEP

- Layout of temperature measurement test
- Provision of measuring device
- Supply of thermocouples
- Preparation of data logger, insulation vessel and thermocouples at heating stock
- Attendance of test
- Evaluation of test results
- Creation of a test report

#### Customer

- Provision and preparation of heating stock
- Locksmith / welder for tacking
- Crane including operator
- Personnel to assist the recovering of insulation vessel
- Cooling water after recovering of insulation vessel
- Replacement of all consumables

Walking beam furnaces  
Walking hearth furnaces  
Pusher type furnaces  
Rotary hearth furnaces  
Roller hearth furnaces  
Double walking beam furnaces  
Bell type furnaces  
Chamber furnaces  
Bogie hearth furnaces  
Induction furnaces