

Qualified and Certified Services



Installation of strain gauges at Airbus A 380

Software (extract)

- FEM-program **ANSYS®**
- Software for static and dynamic calculations of piping systems **ROHR2®** (Sigma)
- **DIAdem®**, measurement value logging- and analysing-software (National Instruments)
- **BEAM®**, measurement value logging- and analysing-software (HBM)

Quality certificates

- Accreditation according to DIN EN ISO/IEC 17020:2004 as inspection centre for in-service inspection of power plants and its components
- Accreditation according to DIN EN ISO/IEC 17025:2005 for material and component test labs
- Confirmation of suitability for quality assurance according to the rules of KTA 1401
- Licensed test lab by TÜV Süd Industrie Service GmbH
- Safety-Certification-Contractors (SCC**Version 2006)



Flow pattern simulations

www.siempelkamp-dresden.de

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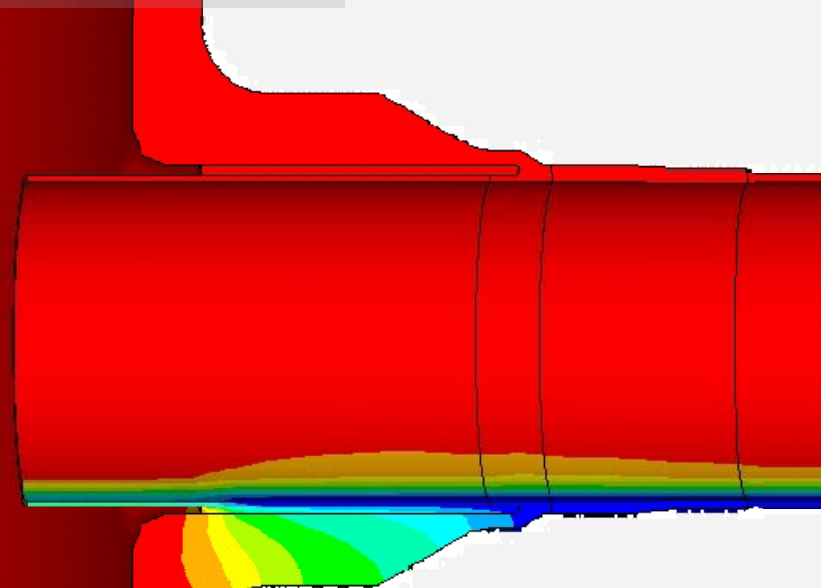


Siempelkamp
 Prüf- und Gutachter-Gesellschaft

Testing

Calculation

Assessment



Small leakage flow at a nozzle (temperature distribution)

Life Management for Safety and Life Cycle

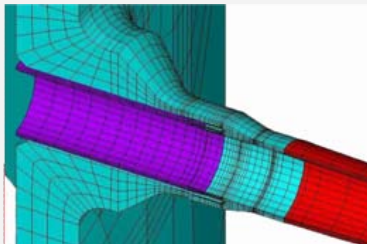
Know-how and Tradition

Siempelkamp Prüf- und Gutachter-Gesellschaft offers a successful life management for plants, components and materials.

Our know-how and our experience is based on a 50-years tradition in the fields of material- and component-testing as well as calculations.



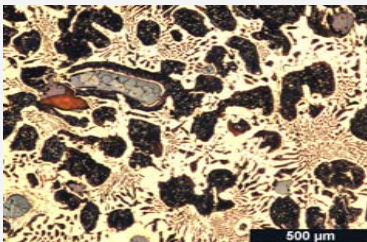
Life management for plants



Strength calculation

Strength Calculation

- Strength and fatigue calculations for machines, equipment and pipeworks
- Expert opinions for clearing up cases of damage
- Optimisation of design concerning mechanical and thermal loads
- Determination of thermal and fluid-mechanical loads



Material testing

Materials and Component Testing

- Test certificates and expert opinions in material problems, including welded structures
- Experimental analysis of strains and stresses on components and full scale structures
- Mechanical-technological material testing, non-destructive material testing
- Failure analysis

Inspections and Expertises

- In-service-inspection of power plants, chemical and petrochemical installations and its components
- Quality management on plant installations
- In-house certification, quality control on-site
- Assessment of component lifetime
- Remaining service life evaluation of components of power plants, of the chemical and petrochemical industry
- Planning and realisation of programs for repeated inspections according TRD 508



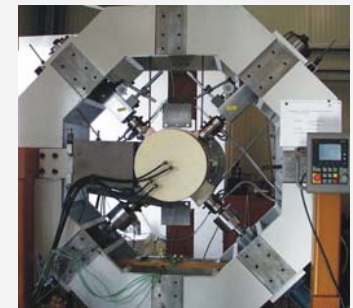
Plant inspection

Our Testing Facilities

- **Creep testing**
 - 145 creep machines, incl. 24 with online-strain-measuring
- **Tensile and bending testing**
 - Four machines from 100 kN to 1000 kN up to 900 °C
- **HCF- and LCF-testing and fracture toughness testing**
 - Servo-hydraulic machines from 50 kN to 250 kN up to 1000 °C (digital control and measuring, high temperature extensometers)
- **Creep crack growth and creep fatigue testing**
 - High temperature strain gauges, potential drop measuring, mobile testing cylinders up to 700 °C and 300 bar inner pressure
- **Impact testing**
 - Up to 300 joule, temperatures from -80 °C to 180 °C
- **Hardness testing**
- **Metallography**
- **Devices for thermal shocks**
- **Non-destructive material testing**
 - UT, RT, MT, PT, VT (incl. videoscapy)
- **On-site measuring**
 - Metallography (replication)
 - NDT
 - Spectroscopy
 - Delta-ferrite determination
 - Hardness
 - Wall and layer thickness
 - Residual stresses (hole drilling technique)



Creep laboratory



100-kN biaxial testing machine



Universal testing machine