



Choose certainty.
Add value.

Material and welding technology

Ensure operational safety and availability of structures and technical facilities.

Your challenges

Material and welding technology is fundamental to engineering and manufacturing. Without the right choice of materials and durable connections between these materials, it can be challenging to create buildings, engineering structures and industrial plants. Ensuring the operational safety and availability of structures, technical components and facilities is critical. That's why manufacturers and plant owners need to consider the type of materials, processing methods, welding techniques and procedures used.

Why are material and welding technology services important for your business?

Operating conditions may subject materials to mechanical, thermal or corrosive influences that can cause component failure. Quality standards and detailed procedures for operation help to mitigate these issues by ensuring correct material selection, welding procedure, equipment usage and maintenance. An expert partner can help you to identify the regulatory certifications you

need and provide services to optimise components and welding activities. These measures can prevent failures that could lead to long-term losses and costly rework.

How can we help you?

TÜV SÜD supports manufacturers in material and welding technology through testing, inspection and certification services for materials and processing methods, as well as for welding activities. We assess and certify materials, products and manufacturers in accordance to national and international standards to ensure the quality and safety of your components and industrial plants.

Our material and welding technology services

- **Material selection, processing and certification**
TÜV SÜD provides technical support in material selection and material technology in general. We conduct material and process inspections as well as preparation or review of material specifications.

Our experts perform auditing and certification of manufacturers of materials and semi-finished products in accordance with AD-2000-W0, TRD 100, KTA 3201.1, KTA 3211.1, PED 2014/68/EU and EN ISO 9001:2008. We also provide certification for (EU) Regulation No. 305/2011 (CPR) as a Notified Body. In addition, TÜV SÜD is an approved testing and inspection body for DVGW (initial certification and surveillance only).

▪ **Quality assurance**

We support you with in-process inspection and quality control during component production in the plant and during assembly and installation. Our services also include review of specifications and other manufacturing documents.

▪ **Failure analysis and corrosion assessment**

TÜV SÜD provides failure analysis and evaluation of repair concepts based on various tests and analyses. This includes fractography and energy dispersive micro scale analysis by Reflection Electron Microscope (REM), metallography, mechanical and technological tests, vacuum emission spectrometry, corrosion assessments and water chemistry analysis.

▪ **Welding services**

We provide technical support on local and international standards requirements. Our experts review welding documents and conduct production and final inspections of welded structures and components. Our tests and certification of welding filler materials also form the basis for subsequent approvals. Our auditing and certification of manufacturers and welding companies is carried out in accordance with AD-2000-HP0, TRD 201, KTA 3201.3 and KTA 3211.3, harmonised standards for pressure equipment, PED 2014/68/EU (module audits), EN ISO 3834, EN ISO 9001:2008, EN 15085-2, RID 6.8.2.1.23 in conjunction with EN 14025 and EN ISO 3834-2, and CPR 305/2011 in conjunction with EN 1090-1 (metal constructions) and EN 13479 (filler metals). We also provide certification of welders, welding operators and brazers.

▪ **Non-destructive examination (NDE)**

In addition to assessment of NDE programmes and qualification of NDE methods and personnel, we can conduct NDEs on your behalf.

Your business benefits

- **Save time and cost** – by identifying component damage, failures and risks that could result in delays, increased costs and production losses.

- **Optimise quality and efficiency** – by partnering with experts throughout your production process, ensuring compliance with national and international requirements.
- **Enjoy wide recognition of certification** – through TÜV SÜD's reputation for independence and impartiality.
- **Secure competence and gain certainty** – with our long-standing international experience in plant and installation, steam and pressure engineering, as well as our in-depth familiarity with relevant international directives and regulations.

Why choose TÜV SÜD?

Our clients receive reliable and realistic reports that form a solid basis for making decisions. Drawn from a variety of different engineering disciplines, our experts will assess each project objectively, ensuring you obtain unfiltered information. With our international presence and local knowledge, we work around the world on your behalf, providing immediate and cost-effective support through an extensive network of local offices. In addition, we are a Notified Body, certification body and testing laboratory for metal construction products falling under the scope of the Construction Products Regulation (CE mark).

Choose certainty. Add value.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East, Asia and Africa. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

Related services

TÜV SÜD provides the following related services:

- Pressure equipment manufacturer services
- Pressure equipment operator services
- Transportable pressure equipment
- Pipelines
- EN 1090 standards
- Failure analysis
- NDE services for industrial plants and systems
- ASME boiler and pressure vessel code
- AWS standards