



Choose certainty.
Add value.

Rolling stock services

Integrated approval support for meeting European and national requirements

Your challenges

A critical part of business for railway vehicle manufacturers, suppliers and rolling stock operating companies is compliance with mandatory, voluntary and contractual requirements for the construction, placing into service and operation of rolling stock and components. Navigating and correctly interpreting these mandatory requirements and conducting testing with the requisite expertise are challenging and time intensive tasks.

The way to safety in operation

From the quotation phase to rolling stock operation, a wide variety of requirements must be correctly defined and implemented. The process also involves specification and implementation of approval and safety requirements at the design and development phase, planning and execution of type testing in line with specifications, and continuous involvement of official institutions, testing agencies, assessment bodies and expert appraisers.

Appropriate and effective safety, approval, quality, maintenance and project management provide vital support during this process.

From requirements to validation

Your company must meet the requirements for the construction and operation of rolling stock not only for contractual reasons, but also as part of your responsibilities concerning product liability and the safe design and operation of rolling stock after it passes from manufacturer to owner or railway transport company. Confirmation of the manufacturer's compliance with the relevant design safety requirements in line with the state of the art is provided by passing type approval tests and receiving authorisation for placing into service. As part of this process, a battery of expert reports and tests with varying areas of focus, often differing widely depending on the specialist area, must be obtained; failure to pass these tests results in lengthy and expensive repeat testing and reworking.



How can we help you?

TÜV SÜD offers extensive rail industry expertise and experience to facilitate approval processes for rolling stock and its operation and maintenance. We offer a comprehensive suite of in-house services as well as capability for rail vehicle inspection, expert assessments and technical testing of rolling stock, combined with an extensive range of sector-specific accreditations by authorised experts that enable us to provide integrated support throughout the entire life cycle of the product.

Our rolling stock services

■ Approval management

With our experience in worldwide rolling stock approvals and operation authorisation and our close collaboration with international safety authorities, we can work with your organisation to draw up the optimum strategy for your approval process. This specialist support is particularly beneficial when it comes to multinational rolling stock approvals, where smooth, objective and expert coordination of the various players (operators, manufacturers, suppliers, authorities and Notified Bodies) is key. Given our involvement in numerous boards and committees, we are able to assist you in correctly interpreting Notified National Technical Rules and European requirements within the relevant TSIs.

■ Independent safety assessments

Independent safety assessments (ISAs) are mandatory in many countries where national railway safety authorities are in charge of issuing safety certificates, authorisations for placing in service or safety authorisations. However, ISA requirements vary depending on the vehicle type and the country or region in which

approval is sought. Some countries require individually recognised assessors, while others only require the organisation to hold the recognition in order to carry out an ISA on behalf of the authority. In addition, the focus of an ISA may vary depending on the project – while light-rail vehicles and metro projects may need to follow specific national standards and requirements, trains running on main lines generally need to comply with a more complex process.

TÜV SÜD is authorised to carry out assessments on behalf of many rail authorities and is accredited as an inspection body in line with DIN EN ISO/IEC 17020.

Our ISA services cover electrical, electronic and software-controlled systems, mechanical, hydraulic and pneumatic systems, propulsion, and energy supply. Our experts can provide assessments for all technical categories of rolling stock production, enabling us to offer efficient ISA not only for single categories but also for an entire vehicle or train set.

■ EC verification/conformity assessment

EC certification in line with Directive 2008/57/EC is required to place rolling stock into service on the Trans-European Networks (TEN). These EU assessments must be conducted for rolling stock vehicle subsystems in line with the Technical Specification for Interoperability (TSI) (PRM, SRT, NOI, HS RST and CR LOC&PAS) and for vehicle control, command and signalling systems by a Notified Body (NoBo) for interoperability, which also undertakes conformity and serviceability assessments of the associated interoperability components. TÜV SÜD holds the status of Notified Body through its subsidiary Railcert and conducts all EU assessments for all subsystems and their interoperability components in line with the applicable TSIs.

■ Designated Body (DeBo)

TÜV SÜD Rail is one of the first testing and inspection organisations to be officially appointed a Designated Body with Interim Function for rolling stock by the German Federal Railway Authority. As a Notified and Designated Body, we therefore serve as a project-independent and autonomous organisation for testing compliance with national regulations and Notified National Technical Rules (NNTR).



Rail vehicle testing facility at Görlitz, Germany

■ **Safety management**

Safety management follows the introduction of the common safety method (CSM) for risk evaluation (352/2009/EC and 402/2013/EU) and growing demand for functional safety according to the applicable standards (EN 5012X) and the German Rolling Stock Safety Directive (SIRF).

Putting process requirements into practice demands a good understanding of the various methodologies and their technical implementation. Our experts support your company (whether manufacturer or supplier) by providing project consulting services for the application and implementation of the relevant process requirements (SIRF, EN 5012X).

We also assist rail transport companies in implementing requirements in line with the European Safety Directive and safety certification requirements (in line with 1158/2010/EU).

■ **Fire protection services**

Our railway fire protection specialists have long-standing experience and extensive expertise in rolling stock fire protection, which we are happy to provide to you in the form of assessments, training and consulting services. Our portfolio spans system assessments based on international fire protection standards (including EN 45545 and tunnel safety directives) in addition to consulting and training in fault response, rescue and emergency schemes for rolling stock and complete rail systems. In our coaching programme, we provide assistance for manufacturers of rolling stock in meeting certification and authorisation requirements for their products.

■ **Maintenance management**

The transfer of Directive 2008/110/EG, amending the European Safety Directive (2004/49/EC), into national law involved the introduction of a new stakeholder in rolling stock maintenance, the “Entities in Charge of Maintenance”, with extensive responsibilities and

obligations. This documentation must be entered for every rolling stock vehicle listed in the National Vehicle Register (NVR). Compliance with these requirements affects all those involved in rolling-stock maintenance (manufacturers, owners, operators, suppliers and maintenance operatives).

Under Commission Regulation 445/2011/EC, TÜV SÜD is accredited to provide ECM certification. Our experts provide support and training in implementing the Regulation and similar standards such as DIN 27201-1 and the CSM Regulations, and our consulting services can help to strengthen your position to address these new requirements.

■ **Rail vehicle testing**

TÜV SÜD’s rolling stock testing centre provides valuable support for your approval process. Our Görlitz testing facility has a testing area of around 35,000 m² and approximately 3 km of track, where we can conduct speed tests up to around 60 km/h. We also conduct on-track tests to evaluate driving technique and ride comfort, braking technology and pantographs and catenary wires. We are experienced in the coordination and execution of complete type testing on finished vehicles.

TÜV SÜD is accredited as a testing organisation under DIN EN ISO/IEC 17025, recognised by the Federal Rail Authority as a testing body, and registered with Transport Canada as a testing body for tank container testing.

■ **Technical documentation**

At every point in the life cycle of rolling stock, product documentation must comply with a range of standard-related and legal requirements. High-quality documentation helps to guarantee successful sale and smooth operation of the vehicles as well as fostering long-standing customer loyalty. Our experts have the task of preparing safety-relevant, instructive and informative data in user-specific manuals or



complete vehicle documentation. Their expertise is translated into texts and images for parts catalogues, maintenance or user manuals that fully reflect the high quality of your product. We use state-of-the-art technical communication tools to produce systematically structured documents offering rapid access to and location of information. You benefit from our consultancy services and long-standing experience in fields such as light rail, multiple-unit trains and locomotives and in component documentation.

Your business benefits

- **Save time and money** – through our global experience from numerous projects ensuring you to minimize the risk of time-consuming and costly rework. We are your partner for all services throughout the entire scope of rail, light rail and metro system assessment.
- **Minimise risk** – by identifying safety- and approval-relevant weaknesses at an early stage to avoid project delays.
- **Gain a competitive edge** – by working with a single partner who provides services as a Notified Body (NoBo), Designated Body (DeBo) and Assessment Body (AsBo).

Why choose TÜV SÜD?

TÜV SÜD draws on nearly 50 years of experience in the rail business and has extensive specialist expertise in consulting, technical planning and impartial assessments

for all types of systems and subsystems in rail transport and rolling stock. Over the years, we have prioritised the expansion of our proven success in rolling stock quality and safety. We are recognised worldwide as a railway safety assessor and many of our experts hold accreditation from German and other European and international authorities.

Choose certainty. Add value.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and consulting 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:

- Approval management services
- Urban rail system services
- Embedded system services
- Rail infrastructure services
- Signalling services
- Technical documentation services