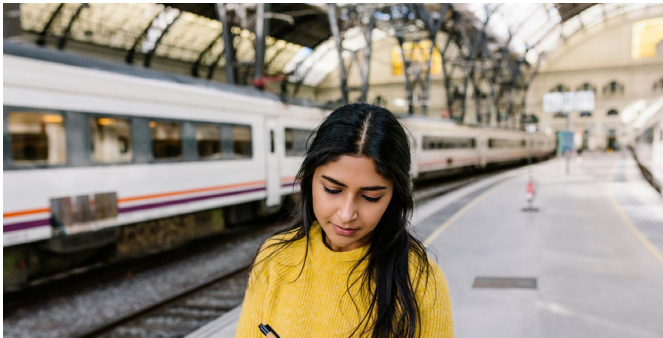


Railway Vehicle Assessment



During the approval process for railway vehicles, a wide range of characteristics and functions have to be inspected by a recognized body like TÜV India in order to produce the mandatory evidence of safety. The evidence applies throughout Europe and India covers 24 different aspects - starting with the brakes and doors, through functional safety up to fire protection and occupational health and safety.

TÜV India provides vital support, from the design stage up to creation of expert reports, in order to testify to fulfilment of the preconditions for approval. Our inspection body is recognised by the German Accreditation Body (DAkkS) and NABCB / IAF with regard to rail-related testing and inspection and offers all the services needed for the evidence of safety required by national approval bodies and also by the Technical Specifications for Interoperability of the trans-Indian rail system (TSI).

The expert assessors from TÜV India have many years of experience in the assessment of all aspects of railway vehicles. If our experts have provided support in development and design processes, the inspection body ensures clear separation of advisory and inspection personnel.

TUV India - Inspired by Knowledge.

Our Services:

Qualification of safety-relevant railway vehicle systems

- Calculation, examination and assessment of system design, fail-safe design and resistance to failure, failure tolerance, failure recognition, hydraulic, pneumatic and electrical circuit diagrams and also safety and function proofs

Qualification of components according to well-established procedures

- Testing and assessment of strength, running dynamics, bogies including material testing, pressure equipment and functional safety
- Certification according to TSI/established proof procedures based on European and international standards
- Testing and assessment of vehicle control systems, braking and traction equipment, doors, fire protection and diagnostic concepts

Qualification of entire vehicles and of vehicle components based on functional safety requirements

- Component certifications according to TSI qualification requirements, using defined proof procedures
- Smoke tests to check building design and implementation

Verification and Validation

- Planning and performance of verification and



validation during the development process (function tests in the laboratory and in the vehicle)

System-related questions

- Hazard and risk analyses
- Safety-related application conditions
- System design (Diversity/Redundancy)
- Ventilation equipment :
- Special technical questions (communication networks, train control and remote control systems)

Benefit to customers

- Protection of people and the environment
- Cost-effective procedures and processes
- Independent and need-based advice
- Officially-recognised reports
- Overarching competence of a complete service provider claims for compensation in case of fire

Our Expertise:

- Independence and neutrality
- Specialist independent experts with long-standing experience
- Assessors with ERA-recognition
- Assessors with EBA-recognition
- Accredited inspection body according to DIN EN ISO/ IEC 17020 (DAkkS) and NABCB/IAF
- Notified Body (NoBo) (LUX)
- Designated Body (DeBo)
- Interims DeBo (DE)
- Associated partner of the German notified body

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About Us:

TUV India Pvt. Ltd. (TÜV NORD GROUP) is a customer-focused, innovative, and independent, technical, quality & safety services organization, dedicated to providing future-proof solutions through technological excellence for the success of its customers with the highest level of integrity. With a presence at over 40 strategic locations in India; a branch office in Sri Lanka and Bangladesh; state-of-the-art laboratories at Pune, Bengaluru, Noida and Jamnagar; 100 important countries worldwide and through digital means, we are always connected to you, our esteemed customer, anywhere, anytime.

We are proud to provide increasing levels of services to the best known, largest global and national companies as well as medium and small industries in diverse sectors like Oil & Gas, Petrochemical, Nuclear, Renewables, Infrastructure, Food, Power, Manufacturing, Chemicals, Pharma, Paper, Automobiles, Railways, Aerospace, Defence, IT, Health, Hospitality, Retail, etc.

Over 1400 competent and experienced TÜV India experts spread across India and over 14000 TÜV NORD experts all over the world, enthusiastically support our clients by providing value-added services in Industry Inspection, European / International Approvals, Management System & IT Certification, Sustainability, Energy Audit, Water Audit, Carbon Services, Building Infrastructure & PMC, Renewable Energy, Food & Packaging Testing, Food Certification & Inspection; Testing of restricted and banned chemicals in Automotive and Electrical & Electronics components and other regulated industries, Product Testing – Electricals, Electronics and Industrial Machinery; Product Certification; Petroleum, Chemicals & Gas Cargo Inspection; Petroleum, Chemicals & Gas Testing; Railway Technology; Engineering, Safety Studies, and knowledge enhancing training programs under TÜV India Training Academy.

