Reliable rail traffic – from the very first day
Test and Validation Center in Wegberg-Wildenrath
The entire rail world in Wegberg-Wildenrath


As rail operators, you expect innovations that work properly from day one. But your customers – whether it’s passengers or cargo – have the same expectation.

Our accredited and certified Test and Validation Center lets us meet this expectation. With our state-of-the-art infrastructure, highly qualified experts, and innovative testing services, we offer you customized solutions from a single source.

One of a kind, worldwide.

The Wegberg-Wildenrath location brings together expertise and technology. At the center we can perform standard railway tests on practically all standard-gauge and meter-gauge vehicles as well as systems and components – 24 hours a day, 365 days a year.

You set the agenda – because our service center is independent of public rail network operations.

Flexible testing areas for mass-transit, regional, mainline, and high-speed rolling stock

Special meter-gauge and standard-gauge test tracks allow a diverse range of tests to be performed, including movement through curves and on grades, leakage tests, and high-pressure sprinkling tests. This is where we find out whether your vehicles are ready for use in everyday urban and inter-urban service. Electric or diesel-powered – the Wegberg-Wildenrath Test and Validation Center is equipped to handle all rail systems and to simulate realistic situations on over 30 kilometers of track.
Concentrated testing expertise

Tested. Accredited. Experienced – every day.

Staying on track –
A 50-meter-long measurement track curve with a radius of 150 meters and two measurement fields is available for determining wheel support and guidance forces. It lets us assess the safety of vehicles against derailment in accordance with DIN EN 14363:2005.

Mastering all rotations –
Traveling through curves, over tops, and across dips can also be simulated at a standstill. Both standard-gauge and meter-gauge vehicles are tested on the turn-tilt table.

Getting the weight right –
Eight weighing elements are provided on a 52-meter-long, leveled, standard-gauge track, and the distance between these elements can be varied. This lets us determine the exact weight of the vehicles.

Simulating travel while standing still –
A tilting device is available for measuring vehicle tilting behavior. The test stand is inclined to simulate the influence of lateral acceleration caused by factors such as centrifugal force or side winds.

Under voltage –
The impulse voltage test system can be used to perform lightning and switching impulse voltage tests, which ensures vehicle safety in an electric railway environment.

Limiting noise –
Vehicles can undergo a noise test at speeds of up to 160 kph on the acoustic measuring rig in accordance with TSI noise and DIN EN ISO 3095:2005. The condition of the track complies with strict European approval regulations and is regularly inspected.

“The authorities are extremely precise. If a rail vehicle is only one decibel louder than allowed, they withhold approval. Therefore, we conduct our measurements under controlled and comparable conditions, which would not be possible on the public network during normal operation.

Through oscillated grinding, the rail is brought to the exact value required by the European directive. Then the measurements can begin.”
One of a kind, worldwide
Real operation, simulated extreme conditions – at one location.

Endurance test for door signals
A three-week door-signal endurance test was performed for the Taipei metro: pulling into the station, opening and closing the doors, pulling out again. We covered 5,000 kilometers, and everything was fine. Test successfully passed.

Climate tests on the Desiro Classic, Bulgaria
How warm will it get inside? This question was answered in an endurance test performed on Bulgaria’s Desiro Classic. The result: The air-conditioning keeps the vehicle interior at a constant temperature of 25° C even when it’s 40° C outside.

Deformation behavior of the Velaro RUS
The strength of an automatic coupler is essential for safe rail operation. This was tested early on and in real-life conditions using a freight car as a crash element on a front module of the Velaro RUS. Once again: test successfully passed.

Extreme operating conditions
We’re also well-equipped to meet unusual demands. Voltage gaps, sudden voltage changes, power supply failures, and short circuits are just a few examples of our multifaceted extreme testing program.

Everyday our rail experts are developing new tests and optimizing existing tests so that rail systems will be able to meet all requirements – today and into the future.

The Test and Validation Center’s testing methods have been certified and accredited by independent bodies. Whether vehicles are stationary or dynamic, there is virtually no limit to the tests that can be performed at Wegberg-Wildenrath.

This knowledge not only helps us, it also helps future maintenance providers. With our standards-compliance testing service, we ensure that your maintenance facilities work according to established guidelines and standards so that your rail systems remain fully functional over the long term.

Certification to DIN EN ISO/IEC 17020
Inspection body for railway vehicles and their components in terms of geometrical, electrical, acoustical, running, and braking performance and verification of conformity with specified requirements; tests the suitability of maintenance workshops and verification of conformity with specified requirements.

Certification to DIN EN ISO/IEC 17025
Test laboratory for measurement- and braking-related testing of rail vehicles, for dynamic function tests of the EBO, for examining high-voltage power supply facilities in the railway sector, for acoustic testing of rail vehicles, and for measurement tests of the running behavior of rail vehicles.

Recognition as an Associate Partner of EB CERT
Performs a variety of activities for testing the EC conformity and EC suitability of interoperability components and performs EC-tests on subsystems.

Certification to ISO 9001, ISO 14001, and OHSAS 18001
Develops, sells, implements, provides test equipment and test and inspection services for railway systems and for the testing infrastructure of railway systems.

Bewährte Kompetenz
Proven competence
Akkreditiert
Accredited
Certified
Zertifiziert
Internationale Normen
International standards
Mechanical and electrical – static and dynamic.

Real conditions

Transportation every day. To guarantee this safety, we rely on the safety of public transport.

When it comes to the reliability of railway systems, the

A state-of-the-art infrastructure and testing expertise support you as a qualified partner every step of the way.

When it comes to the reliability of railway systems, the test options for high-speed, mainline, regional, and mass-transit systems.

You can rely on our wide range of test options for high-speed, mainline, regional, and mass-transit systems.

Our facilities are ideally equipped to meet your project requirements. With over 35 kilometers of track and a top speed of 300 km/h, we are able to test train systems of all types in a realistic environment.

The 62-meter-long roof-height work platform is designed for safe assembly of large roof-mounted components. With a lifting capacity of 20 tons, the platform is capable of lifting heavy components without tipping or tilting.

The train must be raised slowly to an upright position. This is performed quickly while standing in the parallel elevated track section and a scissor-type lifting table in the bogie area. Work pits combined with elevated tracks facilitate work under-floor. The commissioning and inspection of the train are performed quickly while standing in the parallel elevated track section and a scissor-type lifting table in the bogie area.

Booster transformer and related equipment

The booster transformer is used to increase the voltage from the test system to a level sufficient for testing electrical components. The transformer is located in the power supply system and is connected to the test line through a high-voltage cable. Each test track has its own booster transformer, which is designed to handle the specific requirements of the test system.

Voltage systems

The power supply in the two train formation halls is designed for all voltages. Both halls are equipped with overhead contact wires. The voltage systems are designed for a variety of test scenarios. The voltage systems are designed for a variety of test scenarios, including different voltage levels and frequencies. The test systems are designed to handle the specific requirements of the test scenarios.

Elevated tracks

Elevated tracks without overhead contact line:

Each elevated track has its own supply system, which is designed to handle the specific requirements of the test scenarios. The supply system is designed to handle the specific requirements of the test scenarios, including different voltage levels and frequencies. The supply system is designed to handle the specific requirements of the test scenarios.

In addition to the above-mentioned power supply systems, the Test and Validation Center also has a number of other power supply systems. The Test and Validation Center has a number of other power supply systems. The Test and Validation Center has a number of other power supply systems. The Test and Validation Center has a number of other power supply systems. The Test and Validation Center has a number of other power supply systems. The Test and Validation Center has a number of other power supply systems.

A number of other power supply systems are available.

Power supply from the national grid

The power supply from the national grid is designed to handle the specific requirements of the test scenarios. The power supply from the national grid is designed to handle the specific requirements of the test scenarios, including different voltage levels and frequencies. The power supply from the national grid is designed to handle the specific requirements of the test scenarios.

Test oval T1

With a curve radius of 300 meters, test oval T1 is suitable for testing vehicles on standard-gauge and narrow-gauge tracks.

Test oval T2

This single and level track is especially suited to testing electric components, standard-gauge and narrow-gauge vehicles, and in the vicinity of 400–500 Hz power supplies.

Test oval T3

The 853-meter-long track, the outer track of the test oval, is used to test electric components and narrow-gauge tracks.

Test T1

This double-track test is used to test narrow-gauge power plants for standard-gauge and narrow-gauge systems. The power plants are 60% and 15%.

Test T3

This double-track test is used to test narrow-gauge power plants for standard-gauge power plants. The power plants are 60% and 15%.

Test T2

This double-track test is used to test narrow-gauge power plants for standard-gauge power plants. The power plants are 60% and 15%.
Ready for the future

Comprehensive service packages, combined testing expertise, real-life conditions, customized and all from a single source: That’s what the Wegberg-Wildenrath Test and Validation Center stands for: ensuring that only tested quality leaves our site.

Our mission: We are and will continue to be on the cutting edge of technology, which qualifies us as the optimal test center for rail systems worldwide. Our experience makes us a solid partner who supports you every step of the way. With our customized offerings and all-inclusive, trouble-free service, we’ll ensure that your rail systems remain fully functional during their daily operation.

Forum for rail technology
Our site is not just for testing: It’s also a venue for introducing new technologies. We sponsor a number of collaborative and research projects working toward innovative solutions for the rail world of tomorrow.

Transportation to and from the Center
On request, we can organize the transfer of customer vehicles to and from the Test and Validation Center, which reduces our customers’ coordination efforts and speeds up the approval of your rail systems.

At the Test and Validation Center, the future is already underway – and our pioneering work is ongoing.

With its balises and GSM-R radio towers, the large test oval already permits comprehensive testing of cross-border traffic.

A border crossing can be simulated on the large test oval every three minutes, making it possible to model realistic rail traffic across Europe – quickly and easily.

Our Galileo project is also making us a pioneer. At our site, we simulate the Galileo signal so that you can test innovative future applications today. Alongside our project partners, we are implementing the railGATE project and investigating the advantages of Galileo applications in safety-critical areas of rail transport.

This combination of technology, innovation, expertise, and independence contributes to the uniqueness of the Test and Validation Center in the global rail world.

We look forward to seeing you in Wegberg-Wildenrath.
You keep people and goods moving –
and we do the same for rail transport
Our innovative technologies allow you to design maintenance processes that are consistently efficient. Examples include Remote Services and status-based maintenance. You can rely on our extensive expertise, which is based on many years of experience in maintaining track-bound transport systems of all kinds. As vehicle and system manufacturers, we’re not only aware of the technical requirements, we also recognize the importance of rigorous obsolescence management and the optimization of your spare parts assets.

You expect customized service –
and we have the solution
We offer a comprehensive range of flexible, individually tailored services. Our service experts are happy to work with you to develop fast, reliable solutions throughout the entire lifecycle of your trains and infrastructure. And the Test and Validation Center is just one element in our extensive Rail Service portfolio.

Investments in new rail concepts must pay long-term, sustainable dividends. This requires effective service concepts, which are the only way to guarantee the maximum reliability and availability of a transport system over its entire service life – and, in the best-case scenario, even longer.

You can rely on Siemens Rail Services as your ideal partner for innovative service concepts that will safeguard your investments.

Siemens Rail Services
We keep the world running.