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VUZ

Why Test in the Czech Republic?

We can test using all of Europe’s main power systems, run at up to 230km/h, and we certify, evaluate conformity, authorise, and can provide all the necessary facilities.



The Railway Research Institute (VUZ) in the Czech Republic is a unique accredited testing facility for rolling stock, components, and makers of infrastructure from Europe and Asia.

VUZ tests locomotives, performs dynamic component tests, ETCS

tests, evaluates NoBo/DeBo interoperability, AsBo security, and provides accredited certification of products.

VUZ’s large (13.276km) and small tracks (3.951km) can be found near Prague and are equipped with tracks and facilities for static tests as well. The large track can test at speeds of up to 200km/h

(or 230km/h in the case of tilting trains) and is equipped with all levels of ETCS combinations. The small track serves to test slower speeds and sharper turns. There is also the opportunity to combine five different European power systems (0.75kV, 1.5kV, and 3kV in DC, 25kV 50HZ and 15kV 16 2/3HZ for AC). That means up to five separate teams can independently perform tests on five cars at once.

We're Investing Up to €20 Million

Each year, VUZ invests 2.5 million euros to improve infrastructure for our customers. For example, we completed the expansion of our siding track this year, with increased capacity for trains between planned tests. We plan a cumulative investment of 20 million euros over the next five years where we are preparing to outfit the smaller track with all levels of ETCS as well as adjustments to test autonomous vehicles including urban and suburban trains. We are also preparing environmentally friendly energy production. Today, VUZ already guarantees that all electricity used by customers is made exclusively from renewable resources as VUZ emphasises constantly reducing its carbon footprint.

“Interest in testing at the test track is constant. We serve customers from all over Europe and Asia. We are currently accepting reservations for 2024 on the large track. The smaller track has more flexibility in terms of capacity, and producers can get on it sooner. But our company is not just about test tracks! I understand that’s what Europe associates with us; It’s



on our logo after all. But we also perform hundreds of dynamic and static tests of trains and locomotives, as well as individual parts. We prepare turnkey testing for companies so they don’t have to transport their vehicles all over Europe and everything can be tested in one place in the Czech Republic,” VUZ CEO Martin Bělčík said.

VUZ’s testing labs are among the most advanced in Europe and our loyal customers include the largest makers of railcars in the world, including Alstom and Bombardier Transportation, Siemens, Škoda Transportation, CRRC, PESA and more. Hundreds of cars have been tested in Czechia, both regional trains and new locomotives. Producers are increasingly testing hybrid units and the legendary

German ICEs and French TGVs also underwent testing here.

The institute also includes the Dynamic Testing Institute that load tests components for rail and road vehicles and infrastructure parts. The lab’s uses are exceptionally broad and exceed just rail transport. It also serves component makers from the automotive and other industries. Load tests for chassis frames are one of the most common tests in rail transport, as are tests of axle bearings, harness strength, rail anchoring, thermodynamic wheel and brake tests, and tests of entire wheelsets. VUZ operates 24 hours a day, 365 days a year where teams have access to all the facilities they need, including storage, office space, and high-quality lodgings at co-operating businesses.



A European Leader in Rail Transport Testing



Railway vehicle testing
Dynamic component testing
ETCS testing
Interoperability assessments
Safety assessments
Accredited certifications

17 km of railway test tracks
Covered by GSM – R signal
Equipped with ETCS L1 and L2 signalling systems
All major European power supply systems supported
10,000+ vehicles tested
1 500+ certifications issued
50 years of experience



VÝZKUMNÝ
ÚSTAV
ŽELEZNIČNÍ, a. s.