VÝZKUMNÝ ÚSTAV ŽELEZNIČNÍ, a.s.

Railway Research Institute, j.s.c.

www.cdvuz.cz
Who we are...

- A joint stock profit making company
- The shares are owned by Czech Railways, j.s.c.
- VUZ is a company with more than fifty years tradition
VUZ deals with a large scope of activities. It comprises:

- Authorized activities:
  - Conformity assessments
- Accredited activities:
  - Testing
  - Certification for products
- Services provided on Test Centre VUZ Velim
- Training activities
- Expert activities
VUZ Authorizations

- Authorized Body No. AO 258 / Notified Body No. 1714
- Authorized Body - issued by Ministry of Transport of the Czech Republic
- Accredited Testing Laboratory No. 1462
- Certification Body for product certification No. 3149
- Acknowledgement for rolling stock testing issued by EBA - German Railway National Safety Authority
- Acknowledgement for rolling stock testing issued by CESIFER – Italian railway National Safety Authority
ISO 9001:2008
VUZ is holder of ISO certificate

The certificate covers these business fields:

- Conformity assessment of products with technical requirements of European railway system
- Testing and certification of parts of railway, rail vehicles, its equipment and materials
Accredited Testing Laboratory

VUZ Testing Laboratory performs tests of railway vehicles, their components and railway facilities.

Accredited Testing Laboratory offers:
- tests of running safety and running behaviors, brake tests, traction tests
- noise tests according to the TSI requirements
- tests of electrical and power supply systems, pantograph tests
- electric tests and environment impact tests on communication and signalling facilities and tests of EMC
Test Centre VUZ Velim

Test Centre VUZ Velim is located 50 km east of Prague.

Accredited Testing Laboratory VUZ performs tests at its own Test Centre VUZ Velim and VUZ also offers to companies possibility to perform tests themselves.

Test Centre VUZ Velim includes and offers:
- Railway test circuits (large and small)
- Dynamic Testing Laboratory
- Halls for Test preparation
- Training Centre
- Power station supplying all main European tractive power systems
Large Railway Test Circuit
- total length of track: 13.276 km
- admissible weight per axle: 25 t
- admissible top speed: 210/230 km/h

Small Railway Test Circuit
- total length of track: 3.951 km
- admissible weight per axle: 25 t
- admissible top speed: 90 km/h
The circuits rings also offer possibility to perform special tests

- noise tests in the special sections of large test circuit, parameters of which meet the requirements of technical specification for interoperability of the Rolling stock subsystem - noise

- tests of the European signalling and communication equipment ERTMS (ETCS, GSM-R) – test centre is covered by GSM-R signal and the section of large test circuit is equipped by ETCS system Level 1

- possibility of simulation of supply changes and power supply disturbances

- EMC measuring in the special section of large test ring
Dynamic Test Laboratory

Dynamic Testing Laboratory is focused on realization of:
- static and quasistatic tests and measurements
- dynamic fatigue and strength tests of vehicles and their components
- bearings test bench
Training Centre for Interoperability

Training Centre for Interoperability is located in the building of Dynamic test Bench and offers:

- TSI assessment training courses
- Railway sector testing activities training courses
- Training courses according to requirements of customers
- Renting of TC offices according to customers needs
Test Preparation Halls

Basic parameters of the Test preparation halls:

HPZ I
- two tracks with length 57.5 m each for axle load of 25 t
- service pit 35 m long, pressure air, power supply and offices

HPZ II
- two tracks with length 144 m each for axle load of 25 t
- service pit 138 m long, crane, pressure air, power supply and offices
ETCS and GSM-R
at Test Centre VUZ Velim

- Large Test Circuit is equipped with ETCS Level 1
- Control panel is located in dispatcher's room
- Pilot Project ETCS Level 2 will cover also Large Test Circuit
- Large Test Circuit is covered by GSM-R signal
- Radioblock centre RBC
VUZ - part of development and production process

- Testing of new and modernized railway vehicles including high speed vehicles
- Design and homologation tests according to customer needs and railway authorities requirements
- Testing of rail vehicle components (bogie frames, wheels, axles, buffers…)
- Testing of railway infrastructure including its parts (sleepers, parts of points, fastening…)
- Assessment process of all railway subsystems and components including interoperability
Investment activities in Test centre Velim

All investment activities were performed or are planned with support of Czech state or European Union.

already done

- Reconstruction of large test circuit infrastructure - track
- Reconstruction of power supply station, new catenary on large circuit
- New and reconstructed test preparation halls
- Establishment of Training centre for Interoperability
Investment activities in Test centre Velim

in building or preparation phase

- New signaling and telecommunication system in Test Centre including preparation of large test circuit as ERTMS/ETCS test track
- New service equipment for customers in Test Centre Velim (halls extension and set up of other test facilities)
VUZ participation on railway research projects

European projects:
- WIDEM
- EUROPAC
- RAILENERGY
- RAILCOM
- D-RAIL
- EUREMCO
Examples of vehicles tested in Test Centre VUZ Velim
Contact

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Thank you for your attention

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