



TATRA TAKES YOU FURTHER



TATRA TEST TRACK

Largest truck testing ground in Central Europe



TATRA TEST TRACK

The **TATRA** test track was built and is being continuously upgraded primarily for testing **TATRA** trucks and special vehicles. Selected test sections have also been used by a number of institutions, institutes and other automakers with excellent results.

The unique complex of the test facility offers excellent conditions for road testing vehicles of all types, their presentation to customers or for comparative tests. The centre offers external customers a comprehensive set of services aimed at verifying the durability and reliability of their products or their individual components.

A team of qualified staff and many years of experience guarantee a high professional level. The ISO 9001 system, the unconditional protection of customer data and confidentiality are also fundamental standards. **TATRA TRUCKS'** commercial partners can also use the test track.

1967

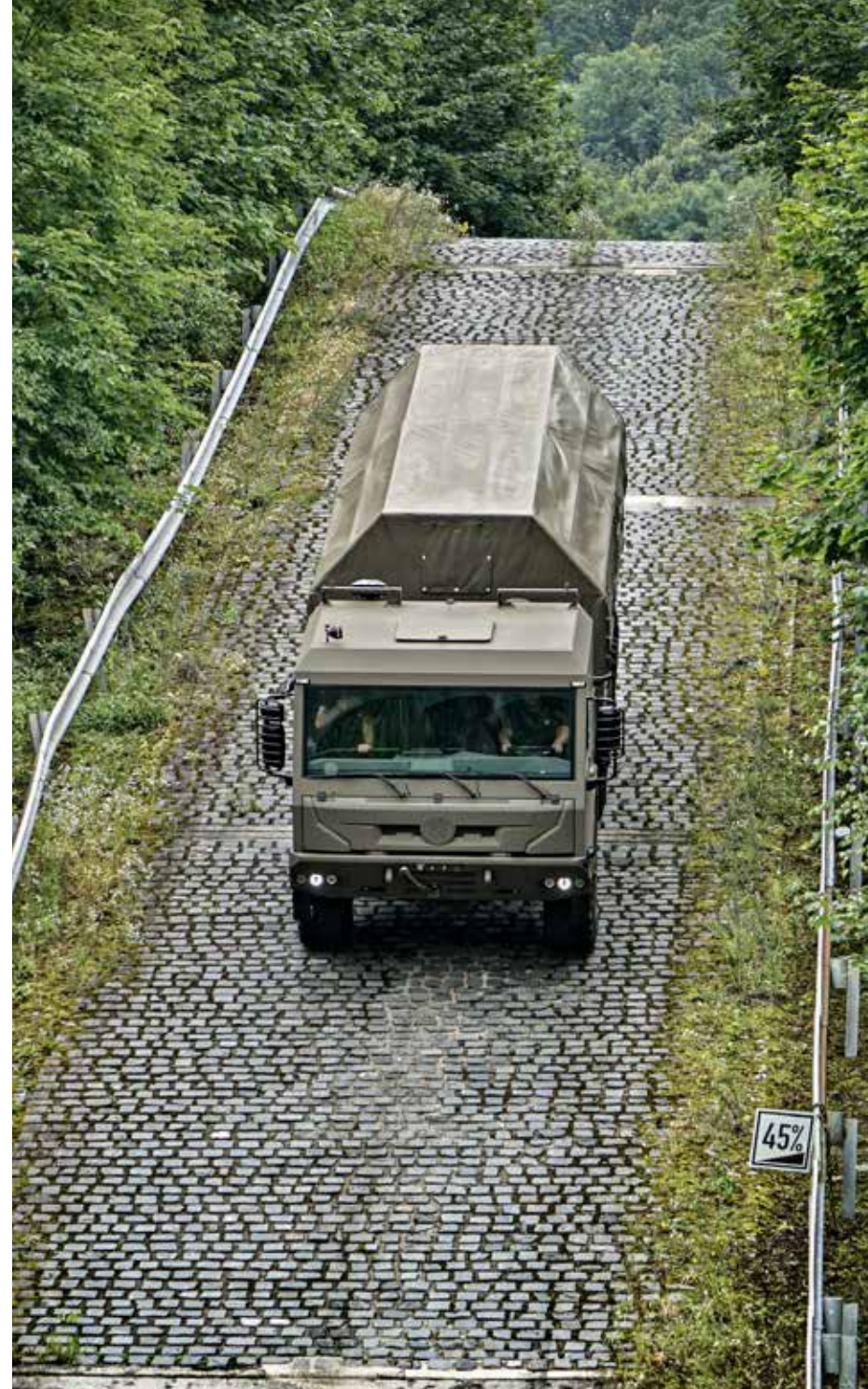
construction begins
on the test track

60

hectares
area

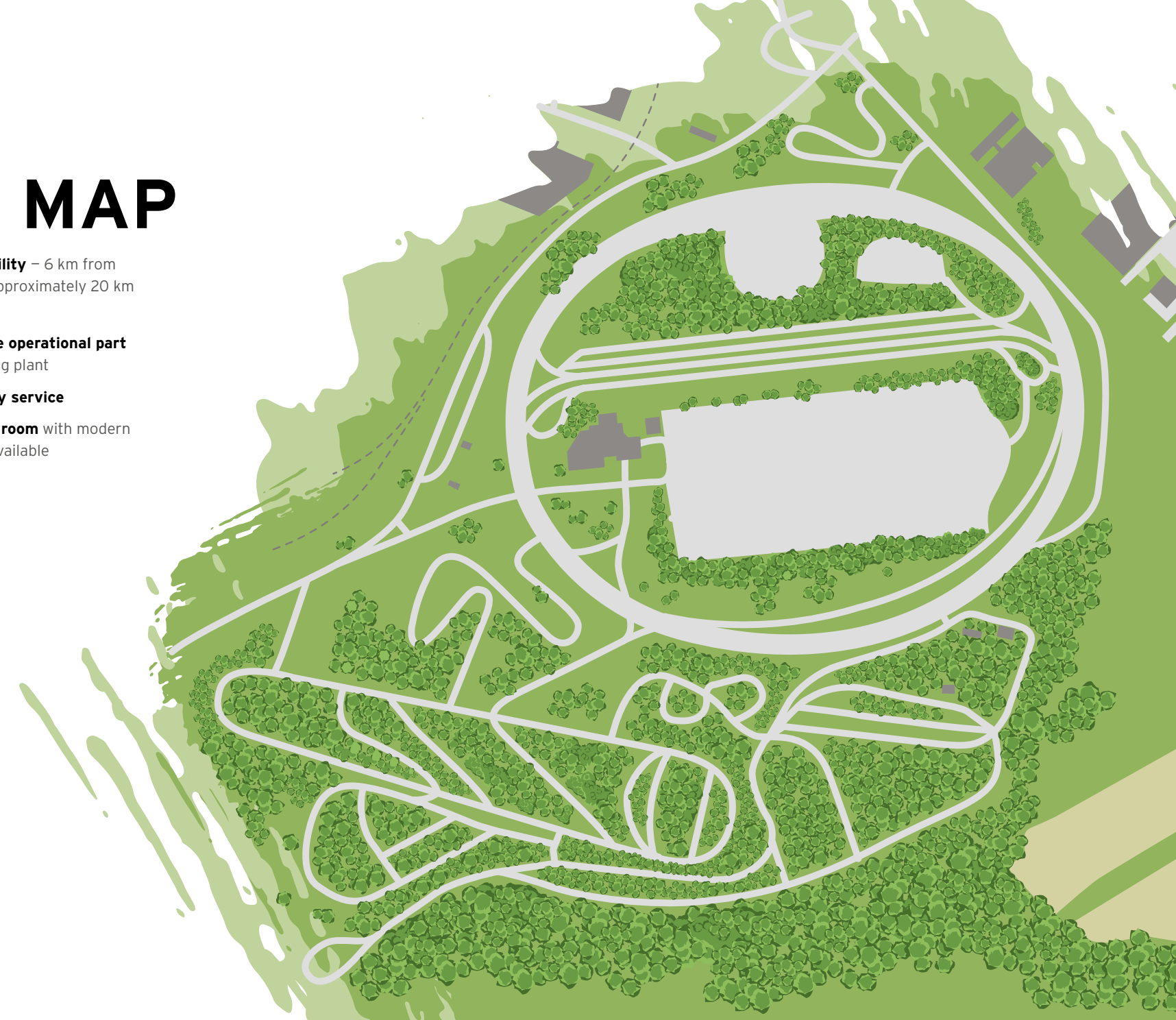
22

km of special
roadways



SITE MAP

- **Excellent accessibility** – 6 km from the I/48 road and approximately 20 km from highway D1
- **Separated from the operational part** of the manufacturing plant
- Guarded by **security service**
- **A dynamic testing room** with modern equipment is also available



ENVIRONMENTAL
CARE
37-38

CAB IMPACT
TESTS
35-36

DYNAMIC TEST
FACILITY
33-34

PRESENTATION
CENTRE
31-32

SPECIAL
PURPOSE ROADS
21-30

SPECIAL
ROADWAYS
09-20

CIRCUITS
03-08

TEST
TRACK
01-02



SPEED CIRCUIT

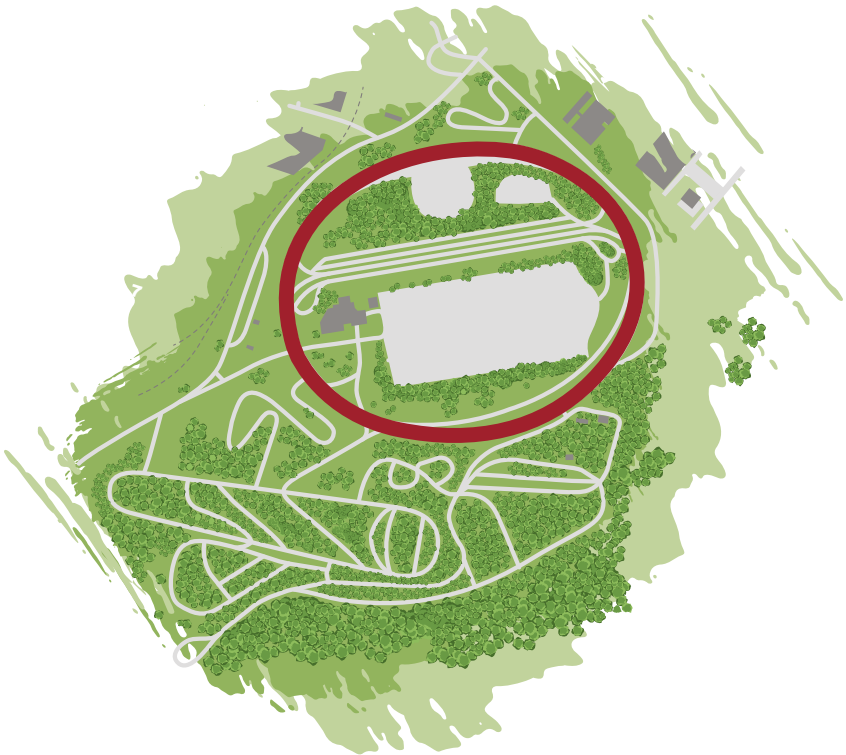
The speed circuit consists of three lanes, where the inner lane is used as a run-in lane, while the middle and outer lanes are for testing. In addition, there is a service lane on the outer perimeter, i.e. behind the barriers. The road surface is bituminous and the entire circuit is situated on a slope with a gradient of 8–10 %, which allows for increased cyclical stresses on the driveline of the test vehicles.



It is designed primarily for testing maximum sustained vehicle speed and traction, with particular emphasis on durability.

Basic parameters of the speed circuit

| Speedway lane designations | Length (m) | Turn radii (m) | Central gradient (%) | Maximum speed (km/h) | Relative lateral acceleration (a/g) |
|----------------------------|------------|----------------|----------------------|----------------------|-------------------------------------|
| Inner | 1 575 | 327 | 5 | 0–100 | 0,10–0,19 |
| Middle | 1 600 | 331 | 7,5 | 100–120 | 0,16–0,26 |
| Outer | 1 625 | 335 | 10 | 120–140 | 0,23–0,35 |





SLOPE CIRCUIT

It consists of two straight sections of 450 m length with a gradient of 6–10 % and two curves. The larger one has a radius of 55 m with a central gradient of 8 % and a maximum longitudinal gradient of 10 %. The smaller curve has a radius of 35 m with a central gradient of 8 % and a longitudinal gradient of 0–10 %. The road surface is bituminous.



It is used to test the service life and operation of the vehicle driveline.

Steep slopes

- The surface consists of granite blocks on a concrete base
- Test speeds 3–5 km/h
- Gradients of 12 %, 16 %, 17 %, 22 %, 30 %, 45 % and 65 %
- For slopes of 17–45 %, the majority of the tests are functional tests
- The 12% slope is used for service life testing



Steep slopes used to verify the vehicle's driveline and gradient. These are mainly tests for special vehicles with high demands on the driving force, for testing engines and other vehicle assemblies in extreme gradients.

| Climb gradient (%) | Length (m) | | Width (m) | Types of tests |
|--------------------|------------|-----|-----------|----------------------------|
| | Total | Net | | |
| 16 | 140 | 80 | 7,5 | Service life Functional |
| 17 | 160 | 80 | | |
| 22 | 140 | 60 | | Functional |
| 30 | 190 | 50 | | |
| 45 | 210 | 50 | 4 | Functional |
| 65 | 194 | 24 | | |





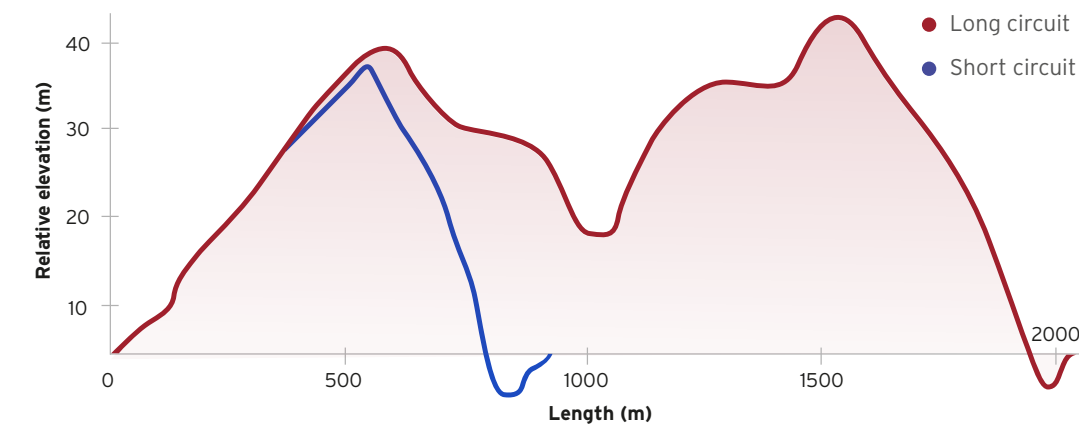
OFF-ROAD CIRCUIT

It was created on a plain consisting of clay and sandy loam soil with discontinuous fragments of weathered illite minerals. The plasticity index of the soil is 25 %. Given the fact that the soil of the terrain circuit is very plastic, the chemical-mechanical stabilisation of the entire terrain circuit with unsorted limestone was carried out. The surface is therefore less subject to changes in humidity.

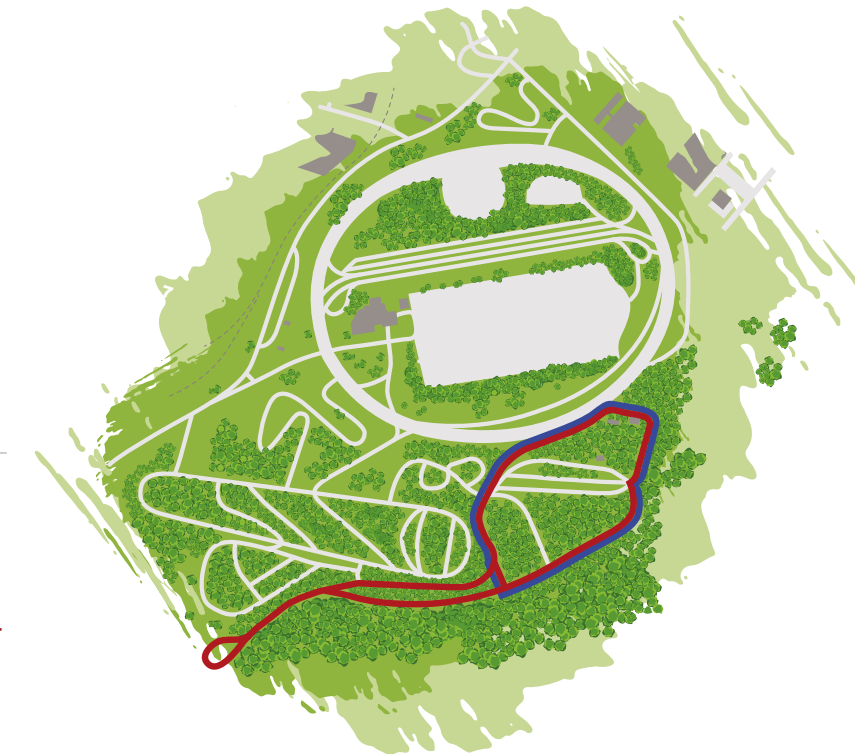
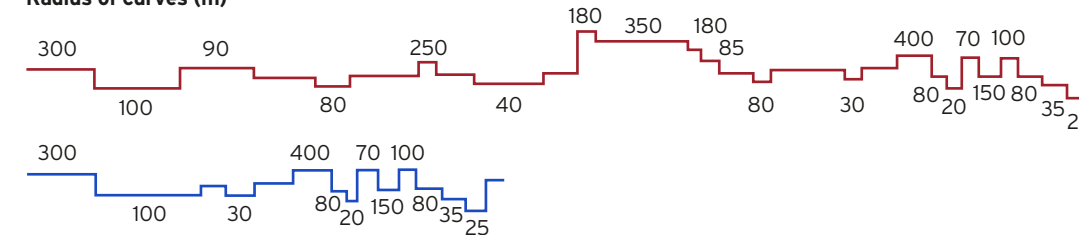


It is used for off-road vehicle testing.

Height profile of the off-road circuit



Radius of curves (m)



| | |
|-----------------------|-------|
| TEST TRACK | 01-02 |
| CIRCUITS | 03-08 |
| SPECIAL ROADWAYS | 09-20 |
| SPECIAL PURPOSE ROADS | 21-30 |
| PRESENTATION CENTRE | 31-32 |
| DYNAMIC TEST FACILITY | 33-34 |
| CAB IMPACT TESTS | 35-36 |
| ENVIRONMENTAL CARE | 37-38 |



SPECIAL ROADWAYS

Designed for the service life and functional testing of trucks on a variety of surface types. These sections simulate the real conditions in which the vehicles are driven and they make it possible to verify their durability, reliability and service life.



COBBLED ROADWAY

- Length 400 m, width 4 m, flat straight section
- Surface made of 10x10 cm granite blocks embedded in profiled concrete
- Micro profile created by random function
- Heights of unevenness constant in transverse direction in each track
- Identical profile of both tracks, offset by 20 m
- Maximum roughness heights +/- 10 cm, effective roughness value 2,8 cm

Types of tests

- Service live test** - repeated truck passes at speeds of 10–30 km/h
- Functional** - driving comfort, truck flotation, single speed ranges up to 40 km/h



COBBLESTONES

- Length 400 m, width 4 m, flat straight section
- Surface made of Tatra-mountains granite river boulders 15–30 cm in size, randomly embedded 1/2 to 3/4 in flat concrete
- Placement density 20 to 30 pieces per square metre
- Distance between the centres of the boulders 10–30 cm
- Maximum height 10 cm, effective straight line roughness value approximately 1,5 cm



Cobblestones are used for service life tests of trucks and cars at speeds up to 60 km/h.



BELGIAN PAVEMENT

- Length 400 m, width 4 m, flat straight section
- Surface made of granite blocks 16x16 cm embedded in concrete
- Unevenness formed by depressions of approximately 7 cm depth in lengths of 1–2 m and width of 1 m, randomly distributed along the roadway length, differently in the two tracks
- Maximum elevation 2 cm, maximum depression 10 cm, effective height of unevenness 3 cm



Used for service life tests of trucks with repeated passes at speeds of 10–15 km/h.



SLAB PAVEMENT

- Length 450 m, width 6 m
- Directional alignment given by a curve with a gradually varying radius of curvature of the centreline from 300 to 160 m
- Roadway gradient 0 to 6 %
- The road surface is made up of 3 m long straight concrete slabs, which are randomly repositioned in the connection, differently in each track by max. 10 cm



Used for service life tests on trucks at speeds of 30–60 km/h.



SINUSOIDAL RESONANT PAVEMENT

- Length 400 m, flat straight section
- Width 5 m of which 3 m is a wave perpendicular to the direction of travel and 2 m a wave slanted (40 degrees) to the direction of travel
- Wave height 20 mm, length 300 mm, pitch 770 mm
- Formed by concrete slabs set in a sand bed



Used for functional tests, to investigate the oscillation of systems and also as part of life cycles.



PAVEMENT WITH COBBLESTONE SURFACE

- Length 400 m, width 4 m, flat straight section
- Surface made of 10x10 cm granite blocks, embedded in a flat concrete base
- Maximum unevenness height +/- 3 cm, effective unevenness height 0,8 cm




Used for functional tests.



| | |
|-----------------------|-------|
| ENVIRONMENTAL CARE | 37-38 |
| CAB IMPACT TESTS | 35-36 |
| DYNAMIC TEST FACILITY | 33-34 |
| PRESENTATION CENTRE | 31-32 |
| SPECIAL PURPOSE ROADS | 21-30 |
| SPECIAL ROADWAYS | 09-20 |
| CIRCUITS | 03-08 |
| TEST TRACK | 01-02 |

BENDING ROAD


- Length 120 m, width 4 m, straight section with approximately zero level
- Surface consists of granite blocks with 15–30 cm sides in various combinations, embedded in a profiled concrete base
- The unevenness is made up of waves of 10 to 15 m in length with an elevation of +/- 0,7 m and a variable cross slope of +/- 0,7 %
- Effective height of the centreline unevenness 33 cm, effective cross slope 3,2 %

 Used for service life and functional testing of trucks and verification of chassis resistance to extreme stresses.




TORSIONAL ROAD

- Length 100 m, width 4 m
- The pavement structure is identical to the bending section
- Wave length 6–12 m, elevation +/- 43 cm, cross slope 20 %
- Effective height of the centreline unevenness 21 cm, effective cross slope 9,7 %

 The use is identical to the bending road.



| | | |
|---|-----------------------|-------|
|  | ENVIRONMENTAL CARE | 37-38 |
| | CAB IMPACT TESTS | 35-36 |
| | DYNAMIC TEST FACILITY | 33-34 |
| | PRESENTATION CENTRE | 31-32 |
| | SPECIAL PURPOSE ROADS | 21-30 |
| | SPECIAL ROADWAYS | 09-20 |
| | CIRCUITS | 03-08 |
| | TEST TRACK | 01-02 |

LOW ADHESION ROADWAY

- Length 140 m, width 4 m
- Surface consists of ground basalt pavement
- Adhesion coefficient meets the requirements of ECE Regulation 13
- Pavement spraying available (nozzle system with remote control and 9 m³ reservoir)



Used to measure the behaviour of the ABS system on vehicles according to ECE Regulation 13.



NOISE TEST TRACK

- The noise roadway is built in the centre of a rectangular parking area of the polygon (parking lot 350 x 50 m) with a cross slope of 6 %, the test roadway is levelled on this area to a cross slope of 1 %
- The measuring section has a lane width of 3,5 m and a length of 20 m
- The approaches to the measuring section are longitudinally and transversely aligned with the measuring section on each side for a length of 50 m
- A shaft for microphone cabling runs under the roadway
- The test track is periodically certified according to current legislation (ISO 10844)



Certified roadway designed for the approval and homologation of car and truck noise levels. It can be used to perform noise tests under free-field conditions in accordance with current international regulations (ECE 51, ECE 117, etc.).



| | |
|-----------------------|-------|
| ENVIRONMENTAL CARE | 37-38 |
| CAB IMPACT TESTS | 35-36 |
| DYNAMIC TEST FACILITY | 33-34 |
| PRESENTATION CENTRE | 31-32 |
| SPECIAL PURPOSE ROADS | 21-30 |
| SPECIAL ROADWAYS | 09-20 |
| CIRCUITS | 03-08 |
| TEST TRACK | 01-02 |



SPECIAL PURPOSE ROADS

These are specially designed lanes and areas on which the transverse stability, water tightness or wading ability of vehicles are tested. Tests verify the ability of vehicles to cope with difficult terrain and operating conditions.



CIRCULAR AREA

- Outer diameter of 100 m with marked circles with radii of 20, 30 and 40 m
- Bituminous surface with a 0,5 % gradient
- Used for functional tests (driving stability, drivability)



Part of the circular area is used as a retardation section for the circuit tests.



DRIVING STABILITY TESTS

- Tests are carried out on dry road on the part of the circular area with the approach from the speed oval
- The tests (also known as the 'moose test') are carried out e.g. according to AVTP 03-160W
- Traffic cones are used for the test, substituting for obstacles
- The tests are carried out according to established methodologies relating to vehicle loading and the position of the centre of gravity of the load



Tests are used to determine the behaviour of the vehicle during sudden avoidance manoeuvres in front of an unexpected obstacle and to determine the maximum speed of such manoeuvres.



| | |
|-----------------------|-------|
| ENVIRONMENTAL CARE | 37-38 |
| CAB IMPACT TESTS | 35-36 |
| DYNAMIC TEST FACILITY | 33-34 |
| PRESENTATION CENTRE | 31-32 |
| SPECIAL PURPOSE ROADS | 21-30 |
| SPECIAL ROADWAYS | 09-20 |
| CIRCUITS | 03-08 |
| TEST TRACK | 01-02 |

LATERAL STABILITY ROAD

- Length 230 m, width 4 m
- A straight section with a gradually increasing transverse slope of 0–57,7 %
- Surface of 16x16 cm granite blocks on a concrete base



Used for functional tests of the dynamic and static lateral stability of vehicles.

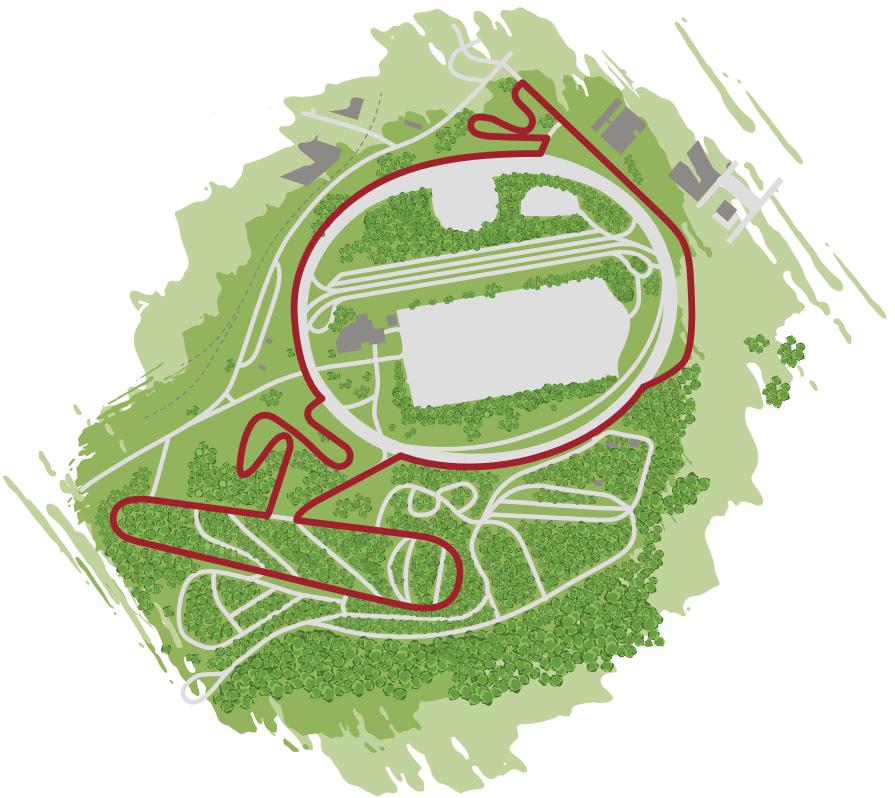


ROAD CIRCUIT

- Asphalt surface
- Different radii of curves and gradients
- Different variations of circuit composition
- Maximum length up to 4,1 km per circuit



Used for driving and durability tests focusing on steering components, tire life and driving stability on paved surfaces.



| | |
|-----------------------|-------|
| ENVIRONMENTAL CARE | 37-38 |
| CAB IMPACT TESTS | 35-36 |
| DYNAMIC TEST FACILITY | 33-34 |
| PRESENTATION CENTRE | 31-32 |
| SPECIAL PURPOSE ROADS | 21-30 |
| SPECIAL ROADWAYS | 09-20 |
| CIRCUITS | 03-08 |
| TEST TRACK | 01-02 |

SHALLOW WATER FORD

- Reinforced concrete basin, 50 m long, 5 m wide
- The bottom consists of 2 strips of 16x16 cm granite blocks and 2 strips of bitumen with a minimum width of 1 m
- Central bottom slope \pm %
- Maximum water level +/- 0,2 m
- Along the length of the water showers to create a continuous water curtain



This section is used for leakage and durability tests.



DEEP WATER FORD

- Length of ford 60 m, width 5 m
- Reinforced concrete basin with 10 % slope in and out
- Level height adjustable up to 2 m



Used for functional tests.



| | |
|-----------------------|-------|
| TEST TRACK | 01-02 |
| CIRCUITS | 03-08 |
| SPECIAL ROADWAYS | 09-20 |
| SPECIAL PURPOSE ROADS | 21-30 |
| PRESENTATION CENTRE | 31-32 |
| DYNAMIC TEST FACILITY | 33-34 |
| CAB IMPACT TESTS | 35-36 |
| ENVIRONMENTAL CARE | 37-38 |

MUD FORD

- Length of ford 50 m, width 4,5 m, total length including ramps 65 m
- Reinforced concrete basin with entrance and exit with a slope of 7,5 %
- Horizontal bottom of the basin
- Mud height variable 0,1-0,4 m
- Passage speeds 5-8 km/h



Used mainly for functional tests. The ford can also be included in the field circuit for durability tests.



SCRATCH ROAD

- Consists of a reinforced concrete basin 50 m long, 4,5 m wide
- Filled with a 55 cm layer of coarse aggregate
- 15 % slope of the basin
- Total length of the section 186 m including the ramps to the slope circuit



Designed primarily for testing the tires and drive trains of trucks under extreme conditions.





PRESENTATION CENTRES

The **TATRA** test facility can also be used by external companies and organisations to carry out their own research and development tasks, or for the presentation of their own products or for experience events. Guests can use one of the two presentation centres, which are part of the complex, as a backdrop.

The centres on the test track are equipped with a kitchen for the preparation of refreshments, presentation equipment for professional audiovisual presentations and, of course, sanitary facilities. The capacity of these centres is flexible - the smaller centre can accommodate up to 30 people, while the larger space is ready to comfortably seat up to 50 participants.



For more information on the commercial use of the TATRA test facility, please contact us at **polygon@tatra.cz**.



Presentation Centre 1

Presentation Centre 2



ENVIRONMENTAL
CARE
37-38

CAB IMPACT
TESTS
35-36

DYNAMIC TEST
FACILITY
33-34

PRESENTATION
CENTRE
31-32

SPECIAL
PURPOSE ROADS
21-30

SPECIAL
ROADWAYS
09-20

CIRCUITS
03-08

TEST
TRACK
01-02



DYNAMIC TEST FACILITY

Next to the test track there is a dynamic test room where models, assemblies and large vehicle units (e.g. cabs) are tested on special test benches. The test facility also provides an objective and reproducible evaluation of the strength and durability of individual components.

The principal purpose of the tests on the dynamic test benches is the repeatable loading of components identical (or very similar) to real operation. To this end, measurements are made in real operation or on special test centre roadways to obtain a load spectrum. This data is then used for accelerated condition tests.

The dynamic test room has state-of-the-art test equipment, mounted on two sprung concrete bases. These include electro-hydraulic equipment for the accelerated testing of vehicle components, as well as resonance machines such as a pulsator, torsator, vibrator and others.





CAB IMPACT TESTS

In the middle of the test centre area there is a special certified facility for impact testing cabs and their mounting on the vehicle frame.



The test facility is equipped with a compressor for pneumatically operating the bumper clamps and special clamping devices for anchoring the cab test specimen to the base plate.

The test is carried out by impacting the vehicle cab from front to rear with the pendulum, the cab being mounted on the vehicle chassis or on an auxiliary frame fixed to the test bench footing.

The position of the cab on the test bench, the method of its attachment to the test rig and the adjustment parameters of the pendulum itself are determined by ECE Regulation 29, always as amended.



| | | | | | | | | |
|---------------------|-------------------|---------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|-----------------------------|---|
| TEST TRACK 01-02 | CIRCUITS 03-08 | SPECIAL ROADWAYS 09-20 | SPECIAL PURPOSE ROADS 21-30 | PRESENTATION CENTRE 31-32 | DYNAMIC TEST FACILITY 33-34 | CABIMPACT TESTS 35-36 | ENVIRONMENTAL CARE 37-38 |  |
|---------------------|-------------------|---------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|-----------------------------|---|



ENVIRONMENTAL CARE

TATRA TRUCKS is keenly aware of the environmental protection objectives to which the European Union has committed itself and defined in the FitFor 55, Green Deal, European Emission Standards and other programmes.

In line with **TATRA TRUCKS'** business strategy, which uses the latest technology with the lowest possible impact on the environment thanks to very low emissions of pollutants of all kinds, sustainability in development and manufacturing is of paramount importance. **TATRA** heavy-duty trucks comply with 100 % of all applicable legislative requirements in the regions, states and countries of their customers.

TATRA's efficient, safe and clean production within the meaning of the applicable regulations is based on a high degree of responsibility on the part of every employee. The optimisation of energy requirements is directly related to the strict observance of all correctly set working parameters. The regularly increased and motivated level of education of all employees leads to a continuous increase in sustainability standards at all levels.

TATRA's test track and presentation centres reflect our manufacturing company's relationship with the environment literally at a glance. Care for forestry and water management is an integral part of our protecting the landscape at the **TATRA** site, including water retention and, where appropriate, water recycling within the test sites. Thriving green spaces and consistently clean surroundings are one of the prerequisites for the successful operation of **TATRA TRUCKS** as a whole.



Testing with respect for nature



Care for forestry and water management



Modern technology with low emissions



Thriving greenery for a sustainable future



ENVIRONMENTAL CARE 37-38

CAB IMPACT TESTS 35-36

DYNAMIC TEST FACILITY 33-34

PRESENTATION CENTRE 31-32

SPECIAL PURPOSE ROADS 21-30

SPECIAL ROADWAYS 09-20

CIRCUITS 03-08

TEST TRACK 01-02



TATRA TAKES YOU FURTHER

TATRA

TATRA TRUCKS a.s.

Areál Tatry 1450/1
742 21 Kopřivnice
Česká republika

+420 556 491 111

  
@TATRATRUCKS

WWW.TATRATRUCKS.COM