



Product Service

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Tyres & Wheels Test Center

Full range of testing services



Be on the safe side

TÜV SÜD-tested tyres and wheels

At Europe's largest independent laboratory for tyre and wheel technologies

- Type approval according to international standards: ECE R30, R54, R75, R106, R108, R109, R117, VSCC 28/28-1 (Taiwan)
- Testing according to international standards: FMVSS 139, §571.139, GB/T 4052:2016
- Highspeed testing up to 450 km/h
- Endurance testing
- Cleat test
- Tyre aging according to
 - ASTM F2838-17
 - Vehicle and tyre manufacturers procedures
- HC-Emission test chamber (Shed-chamber 1.5 m³)
- Rolling resistance according to
 - Vehicle manufacturers procedures
 - ISO 28580
 - ECE R117
 - EC 1222/2009
 - Parameterisation of tyre models according to WLTP – coast down
- Laboratory Alignment:
 - Rolling resistance test benches
 - TÜV SÜD is a member of the European reference network for Tire Labeling concerning Rolling resistance and allowed to align candidate test benches
 - Fatigue test benches

Tyre test bench overview

Test rigs	H4	H5	H6	H7	H8	K1	W03	ZF1	H9
Passenger car/Light truck	–	+	+	+	+	+	+	+	+
Truck	+	+	+	+	–	–	–	–	–
Motorcycle	–	–	+	–	+	+	+	+	+
Speed (km/h)	Up to 120	Up to 200	Up to 110	Up to 320	Up to 300	Up to 450	Up to 340	Up to 360	Up to 120
Load range (kg)	Up to 10000	Up to 5000	Up to 8000	Up to 5000	Up to 2000	Up to 2000	Up to 2500	Up to 1800	Up to 3500
Side slip angle range (°)	0	0	0	0	0	0	–6 up to +6	–45 up to +45	–15 up to +15
Camber angle range (°)	0	0	0	0	–8 up to +8	–8 up to +8	–6 up to +6	–45 up to +60	0
Longitudinal slip range (%)	0	0	0	0	0	0	0	–100 up to +100	0
Range of tyre diameters (mm)	Up to 1800	Up to 1400	Up to 1600	Up to 1600	Up to 1400	Up to 1400	Up to 1500	450 up to 1100	Up to 1100
Controlled inflation pressure	–	–	–	–	–	–	–	–	–
Drum diameter (mm)	1700	1700	1700	1700	2000	2000	2000	2000	2000
Number of test units	2	4	2	2	1	1	4	1	2
Rolling resistance	C3	–	C3	–	C1, C2	C1, C2	–	C1, C2	–
Endurance	C3	C1, C2, C3, M	C1, C2, C3, M	C1, C2, C3	–	–	C1, C2, M	–	C1, C2
High speed	C3	–	–	C1, C2	–	C1, C2	–	C1	–



Wheel test rigs

Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Max. load	Speed range	Basic material
Biaxial fatigue passenger car	OE's specification AK-LH08	M1, M1G; N1, N1G	13–22"	5–13"	35 kN	20–360 km/h	Steel Aluminium Magnesium Carbon
Outer drum	Nürburgring Real-time drive files						
Inner drum	OE's specification AK-LH08	M1, M1G; N1, N1G	15–22"	5–13"	Axial/ radial 50 kN/ 50 kN	0–120 km/h (limited)	Steel Aluminium Magnesium Carbon

Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Max. load	Speed range	Basic material
Biaxial fatigue truck	EUWA 3.23 OE's specification	N3, O3, O4	Max. 1600 mm	Max. 800 mm	Radial: 250 kN Axial: 100 kN	10–130 km/h	Steel Aluminium Carbon
Inner drum							



Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Bending moment	Speed range	Basic material
Bending fatigue	StVZO ECE VIA/JWL/JASO SAE ISO INMETRO EUWA OE's specification	M1, M1G, N1, N1G L M2, M3, N2, N3, O3, O4 O1, O2	10–34"	5–26"	Up to 70 kNm	Var. speed	Steel Aluminium Magnesium Carbon

Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Load range	Speed range	Basic material
Radial fatigue	StVZO ECE VIA/JWL/JASO SAE ISO INMETRO EUWA OE's specification	M1, M1G, N1, N1G L M2, M3, N2, N3, O3, O4 O1, O2	10–36"	5–26"	100– 12000 kg	20–450 km/h	Steel Aluminium Magnesium Carbon



Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Load range	Speed range	Basic material
Impact test 13°	StVZO ECE VIA/JWL/JASO SAE ISO INMETRO OE's specification	M1, M1G, N1, N1G L M2, M3, N2, N3, O3, O4	13–22.5"	4–13"	Up to 1000 kg	Not specified	Steel Aluminium Magnesium Carbon

Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Max. load	Speed range	Basic material
Energy absorption test	StVZO OE's specification	M1, M1G, N1, N1G L M2, M3, N2, N3, O3, O4 O1, O2	Up to 22.5"	1 x 1 [m]	250 kN	Not specified	Steel Aluminium Magnesium Carbon

Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Energy range	Speed range	Basic material
Radial impact test	OE's specification AK-L08	M1, M1G, N1, N1G L	13–22" only truck tyre	4–13"	4500 J	Not specified	Steel Aluminium Magnesium Carbon



Test machine	Test standard	Vehicle categories	Wheel diameter	Wheel width	Max. torsion	Speed range	Basic material
Alternating torsional test	OE's specification StVZO	M1, M1G, N1, N1G L	10–22"	3.5–9"	1800 Nm	Var. speed up to 18 Hz	Steel Aluminium Magnesium Carbon
Dynamic torsional test	OE's specification StVZO	L	14–21"	1.6–8"	3000 Nm	1–10 Hz	Steel Aluminium Magnesium Carbon

Material properties	Test standard	Vehicle categories	Wheel diameter	Wheel width	Max. load	Speed range	Basic material
0.2% yield strength, tensile strength, ultimate strain, micrograph inspection	OE's specification StVZO ECE	M1, M1G, N1, N1G L M2, M3, N2, N3, O3, O4 O1, O2	All	All	250 kN	Not specified	Steel Aluminium Magnesium Carbon



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