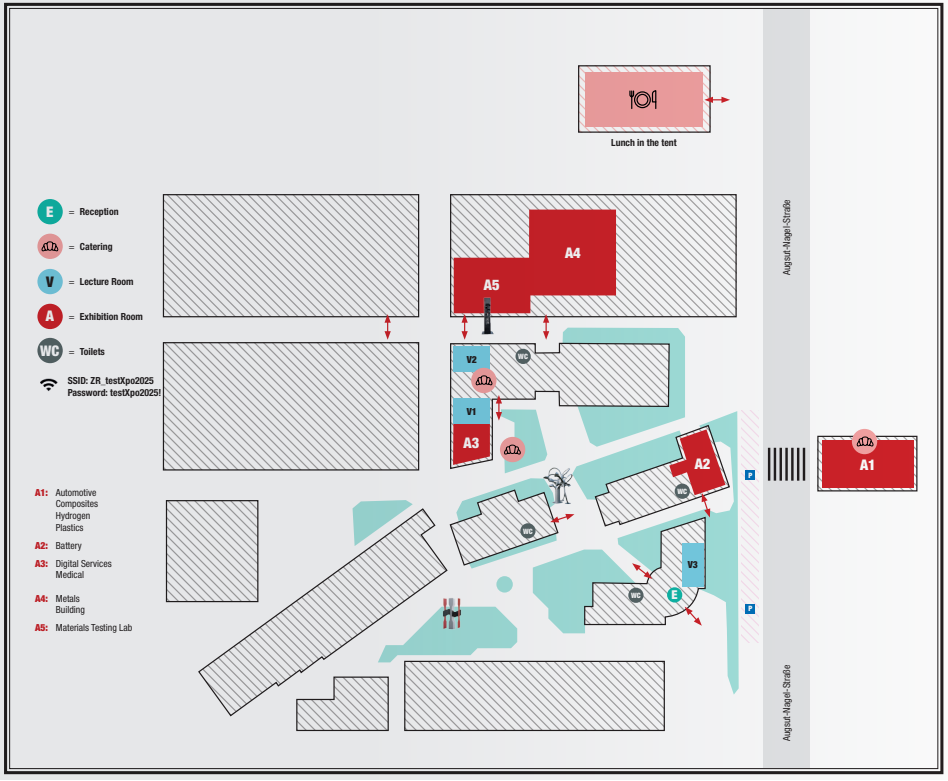
testXpo

33rd International Expo for Materials Testing

October 13 - 16, 2025 at ZwickRoell in Ulm, Germany

SITE MAP


Lunch in the tent
E = Reception
= Catering
V = Lecture Room
A = Exhibition Room
WC = Toilets
SSID: ZR_testXpo2025
Password: testXpo2025!
A1: Automotive
Composites
Hydrogen
Plastics
A2: Battery
A3: Digital Services
Medical
A4: Metals
Building
A5: Materials Testing Lab
A4
A5
V2
V1
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V3
A1
August-Nagel-Straße
August-Nagel-Straße

FOREWORD

Dear Guest,

Welcome to the 33rd testXpo at ZwickRoell in Ulm! This year, we are once again excited to present a variety of product innovations and share valuable industry insights.

You will have the opportunity to explore and experience more than 200 exhibits, with live demonstrations of testing solutions across a wide range of applications. Whether it's plastics, metals, batteries, hydrogen, or medical and pharmaceutical applications, we'll showcase simple, practical solutions designed for every industry. At this event, you'll discover how to implement even the most demanding and customized testing procedures with confidence and precision.

Highlights include:

- **AI meets materials testing:** At various exhibits, we will demonstrate how artificial intelligence makes testing more efficient and safer
- **Automation for any lab:** Our testing assistant ALEX, provides the perfect entry point into tensile and flexure test automation.
- **Accelerate your digital transformation:** With our wide range of digital services, we support you in the consistent digitalization of your testing processes.

testXpo also means that we put our new ideas to the test ourselves—with your help! Only with your feedback can we improve our products and make your testing processes safer and more efficient. Whether at the machines, with our co-exhibitors and presentations, or while networking in the cafés, we hope you have many good conversations and gain valuable input for your testing applications. Thank you for joining us for this special event!

Sincerely,

Klaus Cierocki
CEO

Christine Dübler
CSO

Ping Bu Loke
CTO

CO-EXHIBITORS

A1	A2	A3	A4
Automotive Composites Plastics Hydrogen	Battery	Medical	Metals Building Materials
polymerphys IK		spineserv Medical Device Testing and Services	KARL DEUTSCH
NETZSCH		BASSETTI	IfEP Institut für Eignungsprüfung
KISTLER measure. analyze. innovate.			WERKSTOFFSERVICE MATERIAL ENGINEERING COMPETENCE
HZwo ATLAS MATERIAL TESTING SOLUTIONS			ZEISS
SCIOFLEX HYDROGEN			Gollub Werkstoffprüfung GmbH & Co. KG
W3 SK Strukturleichtbau Kunststoffverarbeitung			Toni Technik

PRESENTATIONS, MONDAY, OCTOBER 13, 2025

Time	Lecture room 1 (Battery Focus Day)
9:30 – 10:00	**A Pressure Independent Lithium-Ion Pouch Cell Expansion – What Role does the Electrode Stiffness play?** Hendrik Laufen, RWTH Aachen
10:15 – 10:45	**Reliability in the Details: Test Methods for Safety-Critical Battery Components** Dr. Robert Stegemann, Accenture Industry X
11:00 – 11:30	**Detailed Characterization of Li-ion Battery Components for Bottom-Up Cell Simulation** Dr. Johannes Macher, Polymer Competence Center Leoben
1:30 – 2:00	**Erschließen Sie das Potenzial Ihres Prüfsystems - Intelligente und zukunftssichere digitale Dienste** Robert Strehle, ZwickRoell GmbH & Co. KG
2:15 – 2:45	**Thermische Ermüdung von Eisenbahnrädern – Einfache Geometrie aber komplexer Schadensmechanismus** Andreas Leitner, W.S. Werkstoffservice
3:00 – 3:30	**DCB-Untersuchungen zur Beeinflussung der Bruchzähigkeit in Naturfaserkunststoffverbunden** Prof. Weißgraeber, Universität Rostock

PRESENTATIONS, MONDAY, OCTOBER 13, 2025

Time	Lecture room 2
9:30 – 10:00	**Unlock the potential of your testing system - Smart and future-proof digital services** Robert Strehle, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Artificial Intelligence in Hardness Testing – How AI Makes Evaluation Faster and More Reliable** Michael Grandits, EMCO-TEST Prüfmaschinen GmbH
11:00 – 11:30	**Customizing - possibilities to overcome the limits of classic hardness testing. From simple specimen grips to special testing machines & automation** Daniel Kraft, EMCO-TEST Prüfmaschinen GmbH
1:30 – 2:00	**Simplified procedures for MFR and MVR measurement** Dennis Stöhr, ZwickRoell GmbH & Co. KG
2:15 – 2:45	**From micro to macro, from series to customizing - The hardness portfolio at ZwickRoell - your complete solution partner** Michael Grandits, EMCO-TEST GmbH
3:00 – 3:30	**Die neuen Fließprüfgeräte bei ZwickRoell** Dennis Stöhr, ZwickRoell GmbH & Co. KG

PRESENTATIONS, TUESDAY, OCTOBER 14, 2025

Time	Lecture room 1 (Pharma/Injection Systems Focus Day)
9:30 – 10:00	**Transport validation of medical devices with NIS as an example** Beate Seidl, PAConsult Meditec GmbH
10:15 – 10:45	**Needle Clogging in pre-filled Syringes: Mechanism, Causes and Consequences for Subcutaneous Drug Distribution** Fabiano Bonaventura, Barbara Braunegger; Novartis Pharmaceutical Manufacturing GmbH
11:00 – 11:30	**Benefits of Autoinjector's release testing based on ZwickRoell solutions** Eric Bigot, Daniel Kaeser, Ypsomed AG
1:30 – 2:00	**Innovating for the Future: Simulated Use Testing of Catheters and Interventional Devices with a New Horizontal System** Peter Schmidt, ZwickRoell GmbH & Co. KG
2:15 – 2:45	**Challenge of the Steel Industry in Material Characterization for the Automotive market** Laurent Durrenberger, ArcelorMittal Maizières
3:00 – 3:30	**ISO Standardization in Metal Testing - News from tensile and ductility testing** Dr. Johannes Aegerter, TCA Test Consulting Aegerter

Time	Lecture room 2
09:30 – 10:00	**Innovative optical extensometer for metals testing** Dr. Erhard Reimann, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Material Properties, Component Testing and Simulation Validation with ARAMIS - Optical 3D Metrology** Markus Klein, Carl Zeiss GOM Metrology GmbH
11:00 – 11.30	**How to measure Viscosity correctly in Quality Control?** Torsten Remmler, NETZSCH Gerätebau GmbH

PRESENTATIONS, TUESDAY, OCTOBER 14, 2025

Time	Lecture room 2
1:30 – 2:00	**Artificial Intelligence in Hardness Testing – How AI Makes Evaluation Faster and More Reliable** Michael Grandits, EMCO-TEST Prüfmaschinen GmbH
2:15 – 2:45	**Erschließen Sie das Potenzial Ihres Prüfsystems - Intelligente und zukunftssichere digitale Dienste** Robert Strehle, ZwickRoell GmbH & Co. KG
3:00 – 3:30	**ARAMIS - Optische 3D Messtechnik in der Materialkennwertermittlung, Bauteilprüfung und Validierung numerischer Simulationen** Dr. Harald Friebe, Carl Zeiss GOM Metrology GmbH

Time	Lecture room 3
9:30 – 10:00	**Materials and Component Testing in the Defense Industry – Challenges and Solutions** Aleksander Koprivc, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Hot Plastics Application with the HDT / Vicat and Drop Weight Tester Portfolio of the ZwickRoell Group** Jie Yuan, ZwickRoell Taicang
11:00 – 11:30	**Unlock the potential of your testing system - Smart and future-proof digital services** Robert Strehle, ZwickRoell GmbH & Co. KG
1:30 – 2:00	**Modernisation of Servo Hydraulic Machines and Systems** Stephan Barret, ZwickRoell Ltd., UK
2:15 – 2:45	**Material- und Bauteilprüfung in der Verteidigungsindustrie – Herausforderungen und Lösungen** Aleksander Koprivc, ZwickRoell GmbH & Co. KG

PRESENTATIONS, WEDNESDAY, OCTOBER 15, 2025

Time	Lecture room 1 (Hydrogen Focus Day)
9:30 – 10:00	**Fracture toughness testing under high pressure hydrogen using electrical potential method** Dr. Stefan Marsoner, Materials Center Leoben Forschung GmbH
10:15 – 10:45	**Material Matters – Novel Hydrogen Research for a Greener Future** Dr. Barrie Goode, Swansea University, UK
11:00 – 11:30	**One-stop testing for the H2 future - from hollow specimens to fracture mechanics at hydrogen** Dr. Bernd Schritesser, SCIOFLEX Hydrogen GMBH
1:30 – 2:00	**Hydrogen Research at ZSW – Fuel Cells, Electrolysers, Component Characterisation** Matthias Messerschmidt, Zentrum für Sonnenenergie- und Wasserstoff-Forschung
2:15 – 2:45	**HIC - Hydrogen Innovation Center** René Hahn/Gregory Hart, HZwo e.V.
3:00 – 3:30	**Efficiency Increase in testile testing of Metals** Dr. Erhard Reimann, ZwickRoell GmbH & Co. KG

Time	Lecture room 2
9:30 – 10:00	**An Investigation into composite additive manufacturing of dynamic response paediatric prosthetic ankle-foot devices** Dr. Abigail Batley; Dr. Tim Reynolds, Bournemouth University, UK
10:15 – 10:45	**Normung in der ISO-Metallprüfung – Neues im Bereich Zug- und Umformprüfung** Dr. Johannes Aegerter
11:00 – 11.30	**Tensile Testing in Metal: ISO 6892-1 vs. ASTM E8 – Similarities, Differences & Key Insights** Dr. Harald Schmid, ZwickRoell GmbH & Co. KG

PRESENTATIONS, WEDNESDAY, OCTOBER 15, 2025

Uhrzeit	Vortragsraum 2
1:30 – 2:00	**ZwickRoell Science Award 2023 – 3rd place:** **Straightforward identification of flow curve and yield locus parameters from three-point bending experiments** Dr. Christoph Hartmann, Technische Universität München, Germany
2:15 – 2:45	**ZwickRoell Science Award 2023 –2rd place:** **Identifying damage mechanisms of composites by acoustic emission and supervised machine learning** Dr. Renato Almeida, Universität Bremen, Germany
3:00 – 3:30	**ZwickRoell Science Award 2023 – 1st place:** **A rapid testing method for assessing mode I fatigue delamination of carbon fibre-reinforced polymer** Dr. Sergi Parareda Oriol, Eurecat, Centre Tecnològic de Catalunya, Spain

Uhrzeit	Vortragsraum 3
9:30 – 10:00	**Unlock the potential of your testing system - Smart and future-proof digital services** Robert Strehle, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Die Prüfgeschwindigkeit im Zugversuch an Kunststoffen: wo steht sie denn? - Ein praxisbezogener Flug über die Normenwerke in der Kunststoffprüfung.** Knut Laumen, polymerphys IK
11:00 – 11:30	**Viskositätsmessungen in der Qualitätssicherung – Worauf muss man achten?** Torsten Remmler, NETZSCH-Gerätebau GmbH
1:30 – 2:00	**Erschließen Sie das Potenzial Ihres Prüfsystems - Intelligente und zukunftssichere digitale Dienste** Robert Strehle, ZwickRoell GmbH & Co. KG

PRESENTATIONS, THURSDAY, OCTOBER 16, 2025

Time	Lecture room 1
9:30 – 10:00	**Der Zugversuch an Kunststoffen nach ISO 527** Helmut Fahrenholz, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Cracked Round Bar Test nach ISO 18489** Johannes Engert, SKZ Würzburg
11:00 – 11.30	**Erschließen Sie das Potenzial Ihres Prüfsystems - Intelligente und zukunftssichere digitale Dienste** Robert Strehle, ZwickRoell GmbH & Co. KG
1:30 – 2:00	**Künstliche Intelligenz in der Härteprüfung – Wie KI die Auswertung schneller und zuverlässiger macht** Michael Grandits, EMCO-TEST Prüfmaschinen GmbH
2:15 – 2:45	**Von Mikro bis Makro. Von Serie bis Customizing - Das Härteportfolio bei ZwickRoell – Ihr Komplettlösungspartner** Michael Grandits, EMCO-TEST GmbH
3:00 – 3:30	**Einführung in die mechanische Prüfung von Faserverbundwerkstoffen** Dr. Hannes Körber, ZwickRoell GmbH & Co. KG

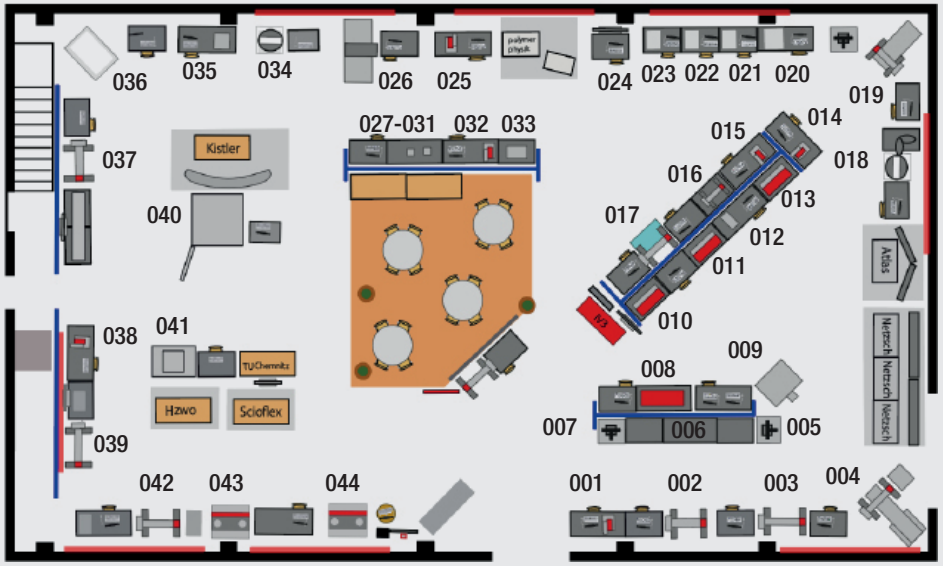
Time	Lecture room 2
9:30 – 10:00	**A Comprehensive Overview of Essential Static Mechanical Testing Methods for Composites** Dr. Hannes Körber, ZwickRoell GmbH & Co. KG
10:15 – 10:45	**Innovative optical extensometer for metals testing** Dr. Erhard Reimann, ZwickRoell GmbH & Co. KG
11:00 – 11:30	**Anwendung des VideoXtens dynamic zur dynamischen Werkstoffcharakterisierung** Dr. Sven Werdin, TU Dresden

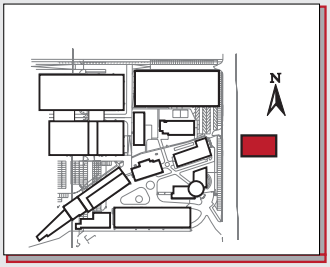
PRESENTATIONS, THURSDAY, OCTOBER 16, 2025

Uhrzeit	Vortragsraum 2
1:30 – 2:00	**The new Melt Flow Plastometers** Dennis Stöhr, ZwickRoell GmbH & Co. KG
2:15 – 2:45	**Testing of plastics - The Flexure Test** Helmut Fahrenholz, ZwickRoell GmbH & Co. KG
3:00 – 3:30	**Unlock the potential of your testing system - Smart and future-proof digital services** Robert Strehle, ZwickRoell GmbH & Co. KG

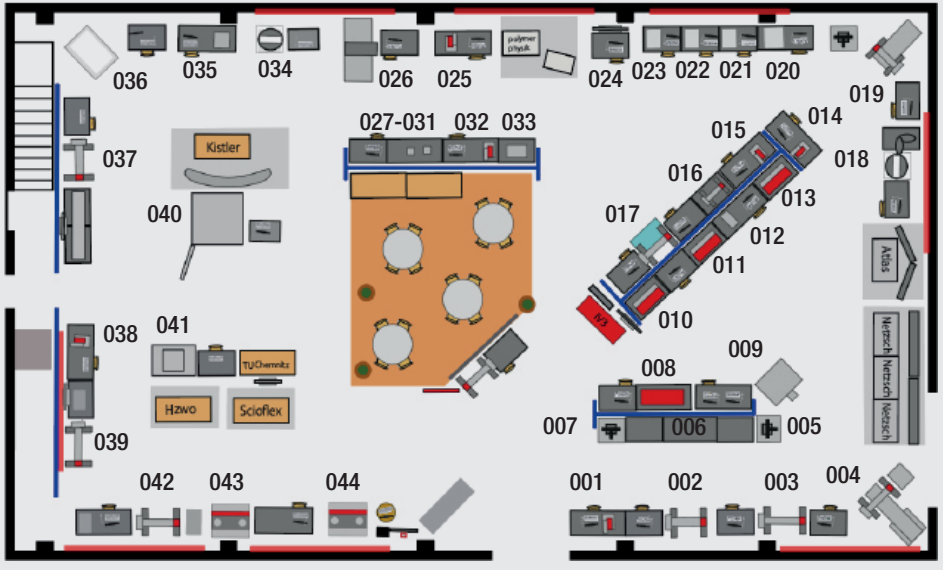
A1 - COMPOSITES

- **(001) Table-top testing machine zwickiLine 1 kN TN**
  G1C to ISO 15024, ASTM D5528
- **(002) Modernized floor-standing testing machine 10 kN**
  Testing of impregnated fiber strands
- **(003) Floor-standing testing machine Z100 TEW AllroundLine**
  Tensile test to ISO 527-4,5; ASTM D3039, in-plane shear test to ISO 14129; ASTM D3518, open-hole tensile strength to ASTM D5766
- **(004) Floor-standing testing machine Z250 SE AllroundLine with temperature chamber**
  Compression test with hydraulic composites compression fixture (HCCF) to ISO 14126, ASTM D6641 or ASTM D3410
- **(005) Specimen grip tree, composites**
- **(006) Tool exhibition for testing sandwich constructions and for composites**
- **(007) Specimen grip tree sandwich construction testing**





A1 - PLASTICS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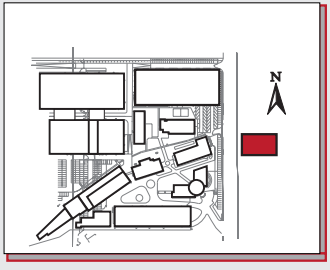
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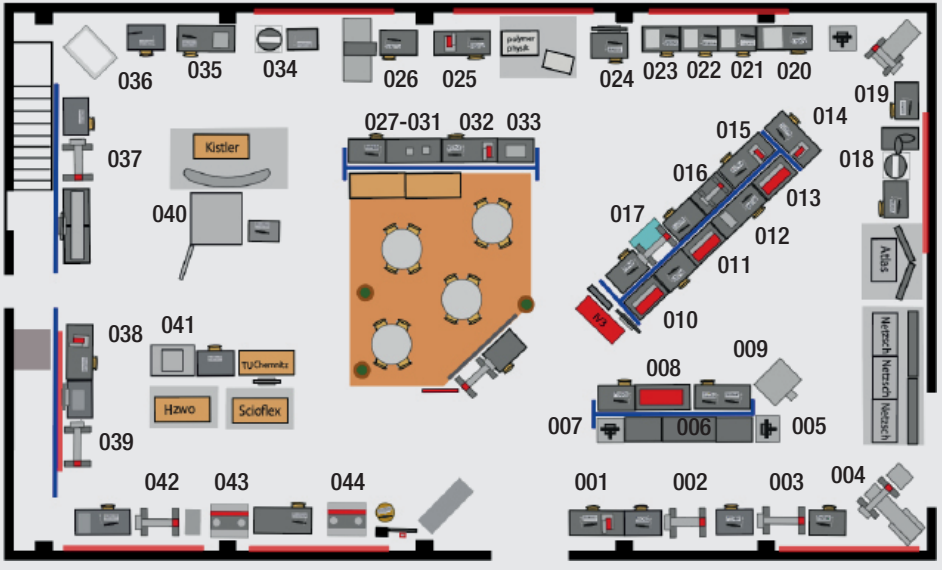
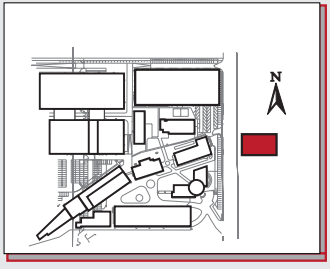
A1 - PLASTICS

- **(008) Amsler HDT/Vicat 6-300 – Allround**
  HDT tests to ISO 75-1 and ASTM D648, Vicat tests to ISO 306 and ASTM D1525
- **(009) Creep testing machine Kappa Multistation 5x10 kN with climatic chamber**
  Creep test with optical measurement at various temperatures to ISO 899-1/-2
- **(010) Pendulum impact tester HIT5P**
  Charpy to ISO 179-1, tensile impact to ISO 8256
- **(011) Pendulum impact tester HIT5.5P**
  Izod to ISO 180 and ASTM D256
- **(012) Notch cutting plane**
  Notches from impact specimens
- **(013) Pendulum impact tester HIT 25 P, instrumented**
  Charpy to ISO 179-1 and -2
- **(014) Table-top testing machine zwickiLine 1 kN**
  Testing of fastening elements
- **(015) Table-top testing machine zwickiLine flexure, 1 kN short**
  Standard-compliant flexure testing - small footprint and easy to use
- **(016) Floor-standing testing machine ProLine 10 kN**
  Tensile test to ISO 527-2 in quality assurance and incoming goods inspections
- **(017) Modernized floor-standing testing machine with automation system ALEX**
  Tensile tests with automatic specimen feeding
- **(018) Electrodynamic testing machine LTM 1 HR with robotic testing system roboTest N**
  Measurement of viscoelastic properties
- **(019) Floor-standing testing machine AllroundLine Z010 TH with temperature chamber**
  Tensile and flexure testing in wide temperature range
- **(020) Aflow extrusion plastometer**
  Automated test sequence and multi-weight tests
- **(021) Mflow extrusion plastometer with weight selector**
  High level of operator safety, preselectable weights
- **(022) Mflow extrusion plastometer with weight lifting unit**
  Very wide MVR, MFR measurement range
- **(023) Mflow extrusion plastometer, basic version**
  MVR, MFR to ISO 1133, ASTM D1238
- **(024) testXpert Analytics**
  For quick analysis of your test and machine data with simple web applications
- **(025) Table-top testing machine zwickiLine 2.5 TN**
  Measurement of the compression stress value and indentation hardness of flexible foam materials
- **(026) Materials testing machines cLine 5 kN**
  Measurement of indentation hardness on mattresses to DIN 53579, ISO 2439 and ASTM D3574
- **(027) Shore A analog without pointer, test weight Shore A**
- **(028) Shore D analog without pointer, test weight Shore D**
  IRHD to ISO 48, ASTM D1415, DIN 53519 Shore to ISO 868 and DIN 53505
- **(029) Shore A digital, test weight Shore A**
- **(030) 3103 IRHD micro with centering device for O-rings**
- **(0) 3105 CombiTest with Shore A, D, and 00**
- **(032) Testing machine zwickiLine 1 kN**
  Tensile and tear growth test on rubber
- **(033) Abrasion tester 6103**
  Abrasion testing to ISO 4649

A1 - HYDROGEN / AUTOMOTIVE





A1 - HYDROGEN / AUTOMOTIVE

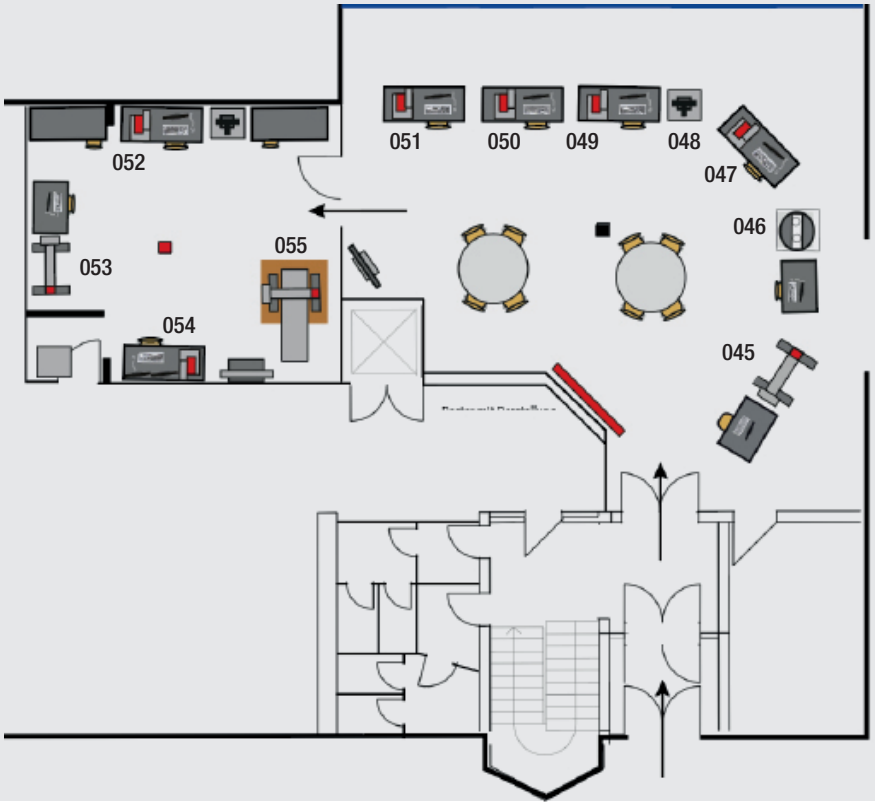
AUTOMOTIVE

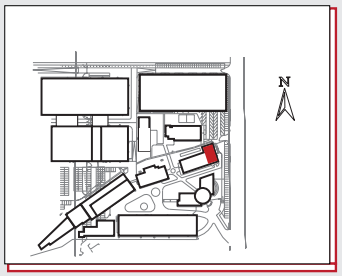
- **(034) Electrodynamic testing machine LTM with torsion**
  Fatigue testing on vehicle seat footrest
- **(035) Modernization with Control Cube**
  Simulation Tests
- **(036) Servohydraulic HC25 Compact**
  Fatigue testing on engine mount
- **(037) Floor-standing testing machine AllroundLine Z050**
  Mini tensile test and small plate bending test on aluminum die-cast specimens
- **(038) Table-top testing machine zwickiLine 2.5 kN with torsion**
  Hairpin flexure test
- **(039) Modernized floor-standing testing machine**
  Hairpin characterization
- **(040) Floor-standing testing machine AllroundLine Z100**
  Damage tests on battery cells using an extreme event chamber
- **(041) Drop weight tester Amsler HIT 2000F**
  Crash test on composite side impact beam

HYDROGEN

- **(042) Floor-standing testing machine AllroundLine Z010**
  Multifunctional Cell Component Analyzer - Characterization of gas diffusion layers (TUC/RUC/PUC)
- **(043) Creep testing machine Kappa 100 SS-CF with hollow specimen technique**
  Slow strain rate test (SSRT) on metallic hollow specimens with pressurized hydrogen in the specimen
- **(044) Kappa 100 SS-CF with hydrogen pressure autoclave**
  Fracture mechanics in hydrogen environments

A2 - BATTERY





A2 - BATTERY

- **(045) Floor-standing testing machine AllroundLine 50 kN**
  Material property determination for battery cell housings

- **(046) Electrodynamic testing machine LTM 1 with torsion**
  Fatigue testing on battery foils

- **(047) Table-top testing machine zwickiLine 0.5 kN**
  Determination of bending stiffness of battery electrodes

- **(048) Specimen grip tree**

- **(049) Table-top testing machine zwickiLine 2.5 kN**
  Determination of adhesive strength of active material coating using Z-direction and 180° peel test

- **(050) Table-top testing machine zwickiLine 5 kN**
  Compressibility measurement on separator using thin layer compression tool (TLC)

- **(051) Table-top testing machine zwickiLine 5 kN**
  Multifunctional Cell Component Analyzer for use in glove box

- **(052) Table-top testing machine zwickiLine 2.5 kN**
  Film tensile test

- **(053) Table-top testing machine AllroundLine 10 kN**
  Multifunctional Cell Component Analyzer for battery electrode characterization

- **(054) Table-top testing machine zwickiLine 1 kN**
  Tensile test on electrode coatings without carrier foil

- **(055) Floor-standing testing machine AllroundLine Z050 with temperature chamber**
  Tests on prismatic cells

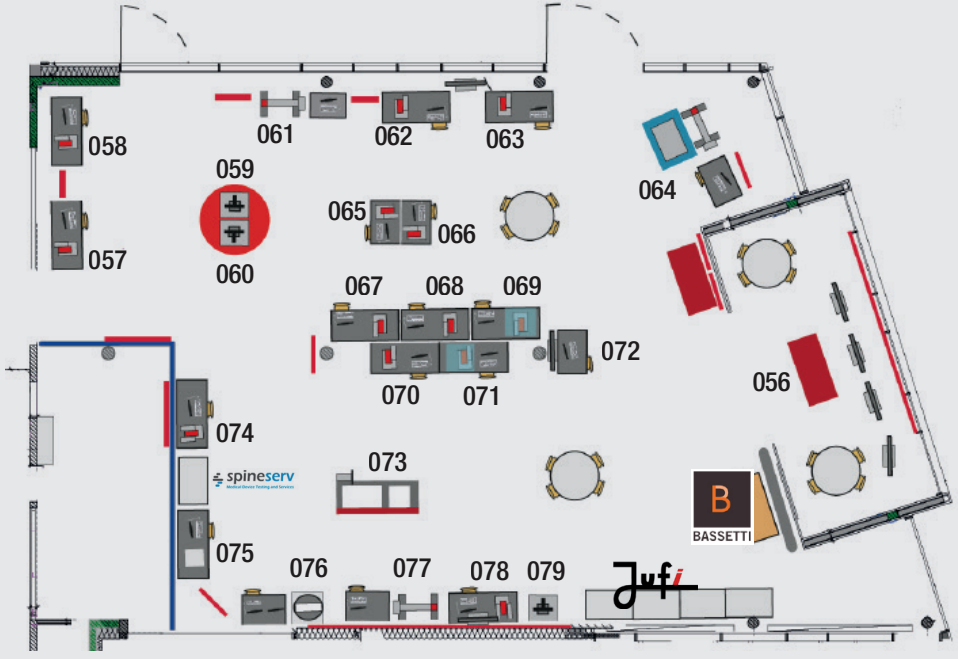
A3 - MEDICAL / DATA MANAGEMENT

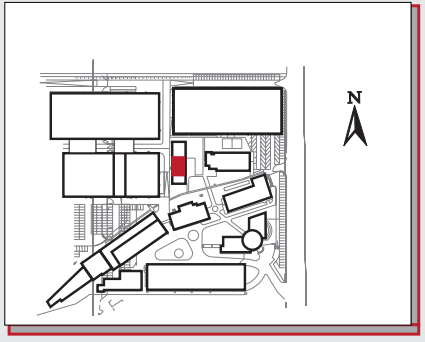
DATA MANAGEMENT

- **(56) testXpert**
  For simple operation, flexible integration, future-proof design and reliable and efficient testing for every application

- **testXpert Analytics**
  For quick analysis of your test and machine data with simple web applications

- **Digital services**
  For long-term machine availability



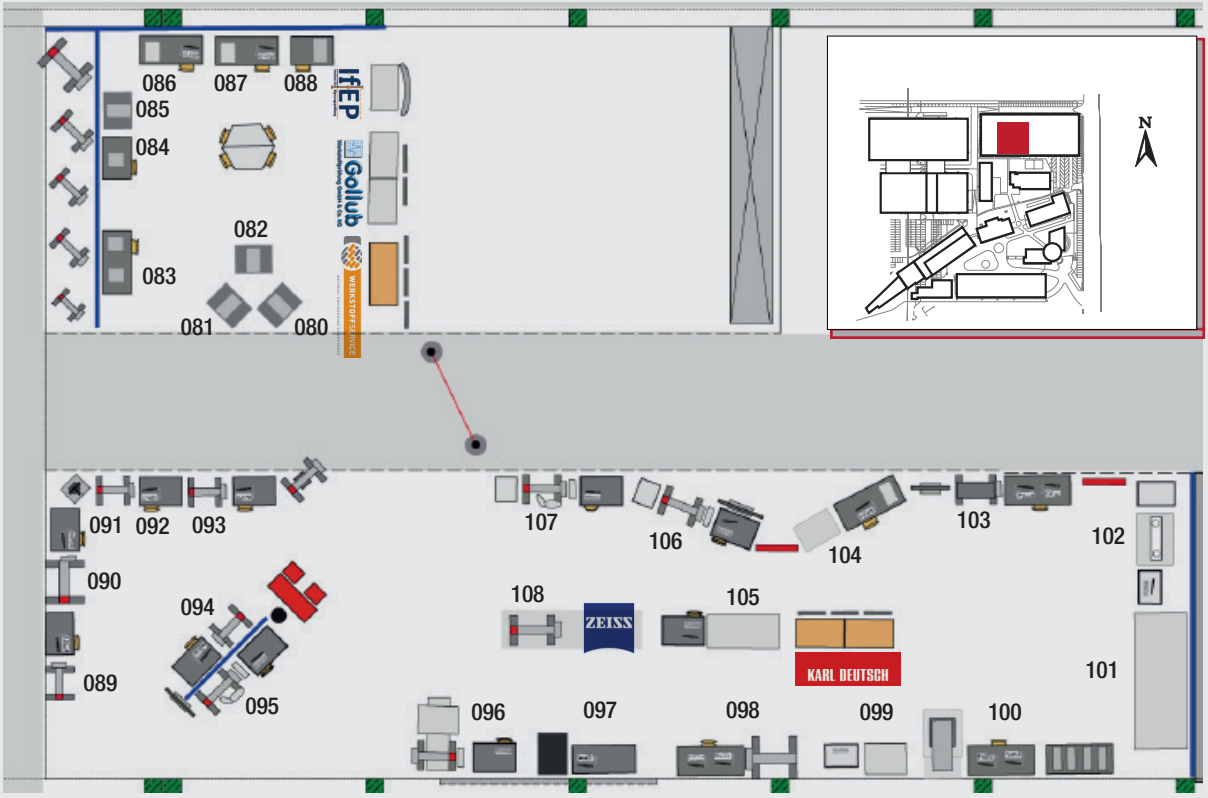


A3 - MEDICAL / DATA MANAGEMENT

MEDICAL

- **(057) Table-top testing machine zwickiLine with XY-table**
  Syringe glide force and dose accuracy
- **(058) Table-top testing machine zwickiLine with turntable**
  Glide force for syringes and cartridges
- **(059) Specimen tree, packaging test**
- **(060) Specimen tree, syringe test**
- **(061) Autoinjector testing system AllroundLine 5 kN**
  ISO 11608-5 Autoinjector testing
- **(062) Table-top testing machine zwickiLine**
  ISO 11608-5 Autoinjector testing
- **(063) Table-top testing machine zwickiLine**
  ISO 11608-6 OBDS/Wearable
- **(064) Lightweight robot robotest N with AllroundLine Torsion with insulin pen test fixture Pen tester with priming station**
  ISO 11608-1 Automated determination of dose accuracy on pen injectors
- **(065) Table-top testing machine zwickiLine**
  Spring testing
- **(066) Table-top testing machine zwickiLine**
  Spring simulation
- **(067) Table-top testing machine zwickiLine 2.5 kN with single testing actuator 1 kN**
  Testing of autoinjectors without medication
- **(068) Table-top testing machine zwickiLine**
  Testing of mechanical components of pen injectors
- **(069) Table-top testing machine zwickiLine**
  ISO 11608-1 Testing of pen injectors
- **(070) Table-top testing machine zwickiLine**
  ASTM F3067 Radial force testing on stents
- **(071) Table-top testing machine zwickiLine with 37°C temperature chamber**
  Glide force tests on stents
- **(072) ZwickRoell qualification service and support services**
- **(073) Horizontal AllroundLine testing machine with water bath**
  ISO 25539-2 Simulated use of catheters and guide wires
- **(074) Table-top testing machine zwickiLine with torsion**
  ISO 80369 Testing of connectors
- **(075) Testing instrument ToniPerm Standard**
  Fineness determination on pharmaceutical powders
- **(076) Electrodynamic testing machine LTM 3 with torsion**
  ASTM F2580 Dynamic testing of hip prostheses
- **(077) Floor-standing testing machine AllroundLine Z005**
  ASTM F1798 Static compression testing on spinal implants
- **(078) Table-top testing machine zwickiLine with torsion**
  ASTM F543 Testing on bone screws for osteosynthesis
- **(079) Specimen tree, biomechanics and orthopedics**

A4 - METALS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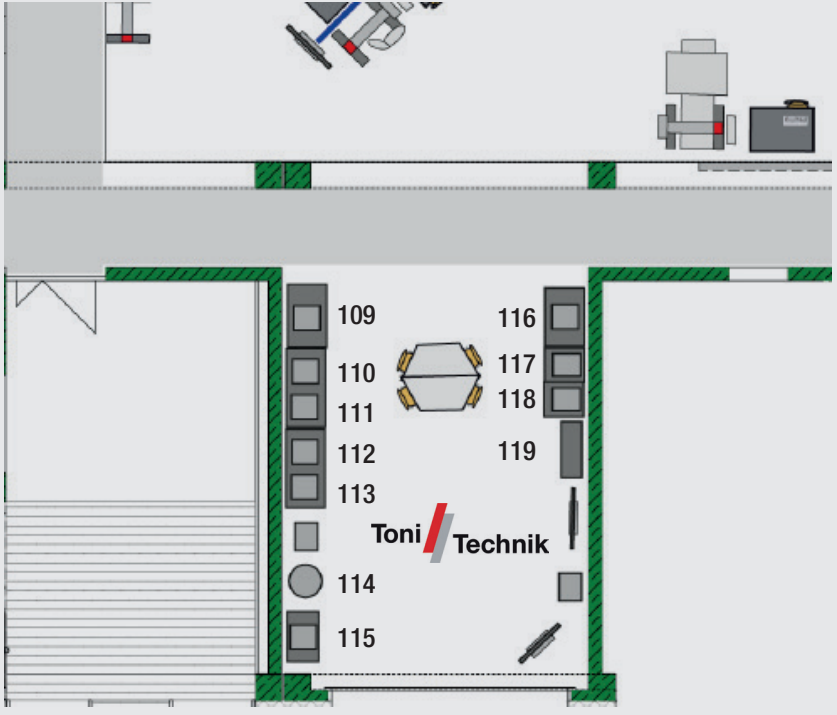
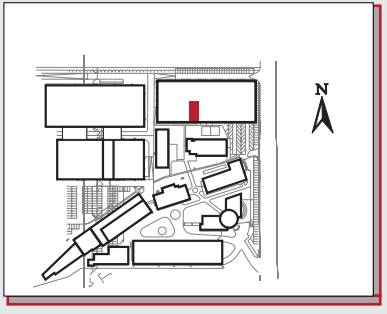
A4 - METALS

- **(080) Fully automatic universal hardness tester Vision 250 Z Pro**
  Welded specimens, pipe segments, screws
- **(081) Universal hardness tester with motorized nose cone Vision 250-Z**
  Hardness testing on large components (engine blocks, forged parts)
- **(082) Universal hardness tester with handwheel Vision 250**
  Tests on compact components (castings, profiles, sheets, molded parts)
- **(083) N3A Manual Rockwell tester**
  HRC testing
- **(084) Fully electronic Rockwell tester DuraJet**
  Rockwell testing, div. components, ball indentation for plastics
- **(085) Universal hardness tester with motorized nose cone DuraVision 300**
  Hardness testing on cast steel, extremely large and heavy test pieces
- **(086) Fully automatic hardness tester for laboratory applications DuraScan 70**
  Curve measurement on embedded specimens
- **(087) Fully automatic hardness tester for laboratory applications DuraScan 70**
  Hardness mapping, welded specimens
- **(088) Vickers, Knoop and Brinell for individual tests and easy curve measurement DuraScan 20**
  Individual measurements, micro-Vickers, Knoop on shafts, threaded fasteners
- **(089) Floor-standing testing machine ProLine Z050**
  Tensile testing to ISO 6892-1 and ASTM E8 on flat specimens
- **(090) Floor-standing testing machine AllroundLine Z100**
  Short clamping length specimen grips and additive materials, 2D DIC
- **(091) Specimen tree expertise**
- **(092) Floor-standing testing machine AllroundLine Z050**
  Extensometry expertise
- **(093) Modernized floor-standing testing machine 100 kN**
  Lap shear test on riveted or welded specimens
- **(094) Floor-standing testing machine AllroundLine Z010**
  Tensile testing on thin sheet metal and foil materials
- **(095) Modernized testing machine with automation system ALEX**
  Automated tensile test on flat specimens
- **(096) Floor-standing testing machine AllroundLine Z100 with robotic testing system roboTest L**
  Automated tensile test on flat specimens
- **(097 Sheet metal testing machine BUP200**
  Hole expansion test with AI crack detection to ISO 16630
- **(098) Modernized servohydraulic testing machine**
  High cycle fatigue testing
- **(099) Vibrophore 250 two-in-one**
  Fracture mechanics using CT specimens as an example
- **(100) Servohydraulic testing machine HC100**
  Low cycle fatigue for high-temperatures on round specimens
- **(101) Biaxial testing machine**
  Cruciform tests
- **(102) Materials testing machine Z2000E**
  Tensile tests on heavy plate
- **(03) Floor-standing testing machine AllroundLine Z100 TEW with high-temperature furnace**
  High-temperature tensile test to ISO 6892-2 with furnace carousel
- **(04) Creep testing machine Kappa 100 SS-CF for high-temperature research**
  Thermomechanical fatigue testing according to the European Code of Practice
- **(105) Pendulum impact tester HIT 450P**
  Pendulum impact test on metals to ISO 148-1 and ASTM E23
- **(106) Floor-standing testing machine AllroundLine Z250 SN**
  Tensile test on round specimens and reinforcing steel (incl. condition monitoring)
- **(107) Floor-standing testing machine AllroundLine Z050 with automation system ALEX**
  Tensile test to ISO 6892-1 on round specimens
- **(108) Floor-standing testing machine AllroundLine Z100 THW**
  3D DIC with ARAMIS system (GOM / ZEISS)

A4 - BUILDING MATERIALS





A4 - BUILDING MATERIALS

- **(109) ToniSET Compact**
  Automatic, computer-controlled Vicat needle instrument with six measuring stations for determining the setting properties of binders

- **(110) ToniSET TWO**
  Automatic Vicat needle instrument with two or one measuring station for determining the setting properties of binders

- **(111) ToniCHAT**
  Le Chatelier water bath for up to 16 Le Chatelier rings acc. to EN 196-3

- **(112) ToniPerm Standard**
  Blaine air-permeability apparatus, automated version to EN 196 and ASTM C204

- **(113) ToniPERM II**
  Blaine electronic air-permeability apparatus, for automated determination of the specific surface area to EN 196 and ASTM C204

- **(114) ToniCAL Trio**
  Calorimeter for continuous determination of the total evolved heat of hydration of binding materials, preferably cement according to ASTM C1702

- **(115) ToniFORCE**
  Fully automatic penetrometer for determination of the setting behavior of concrete, gypsum, mortar and multilayer building materials (3D printing method), for example, according to ASTM C403

- **(116) ToniMIX**
  Mortar mixer for the production of mortar for standard prisms according to EN 196-1, EN 480 and EN 196-3

- **(117) ToniVIB**
  Vibrating table for the standard-compliant compaction of cement mortar and other binding materials to EN 196-1

- **(118) Water storage performance unit for cement specimens**

- **(119) ToniPRAX**
  Combined 300 kN compression and 20 kN flexure testing machine for tests on prisms 40 x 40 x 160 mm to EN 196 and ISO 679. Design according to DIN 51220; EN ISO 7500-1

SAFETY INSTRUCTIONS

This information is provided to make sure you have a safe and enjoyable time while visiting our campus. We ask that you please read this information carefully and follow the instructions accordingly. It applies to all our customers and visitors. We wish you a safe and enjoyable visit.

General safety regulations:

Smoking prohibited in all buildings

Taking photographs is prohibited on the entire plant premises

Video surveillance on the entire company premises

No unauthorized copying. In particular, we would like to point out the copyright protection of all drawings and circuit diagrams.

Do not leave **the marked traffic areas.** Do not step near the machines.

SAFETY INSTRUCTIONS

General safety regulations:

When entering the building, please familiarize yourself with the displayed **escape and rescue plans.**

In the event of an accident, please follow the instructions on the **information boards**.

Trucks and forklifts regularly operate on the company premises. Therefore, please look out for moving vehicles when crossing the traffic areas.

Do not stand or walk under **suspended loads**.

Caution: An automated guided vehicle (AGV) is in motion on the factory premises.

We would like to thank you for visiting us and look forward to welcoming you again at next year's testXpo – the International Expo for Materials Testing – in Ulm, from October 12–15, 2026.

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