ZwickRoell GmbH & Co. KG • August-Nagel-Str. 11 • 89079 Ulm • Germany

Company Profile | ZwickRoell Authorized Partner Laboratory

Gesellschaft für Werkstoffprüfung mbH (GWP)
Munich
Georg-Wimmer-Ring 25
85604 Zorneding
Saarland
Auf Nauwies 10
66806 Ensdorf

SPC Werkstofflabor GmbH (SPC)
Westhausen
Auf Nauwies 10
66806 Ensdorf
Steinheim non-destructive testing site
SPC Werkstofflabor GmbH
Daimlerstraße 10

Contact

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Certifications

Accredited compliant to DIN EN ISO/IEC 17025
TISAX certified

Service Overview / Expertise

| Industries

Automotive, mechanical and plant engineering, electrical engineering & electronics, metals industry & aluminum, raw materials industry, aerospace, defense, medical engineering, energy & environment, construction industry

| Materials & Components

Plastics, metals, composite materials

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| Test Methods

Metallographic examinations
Welded-joint assessment using transverse sections, macroscopic examinations, optical microscopy, transmitted-light microscopy on thin sections, scanning electron microscopic examinations (SEM), microstructure assessments, grain-size determinations, assessment of non-metallic inclusions, assessment of graphite formation in cast iron

Chemical and spectral analyses
Optical emission spectroscopy analysis (OES analyses), analysis of carbon, sulfur, hydrogen, oxygen, nitrogen in metals, analysis of trace elements, phase analysis using X-ray diffractometry (XRD), EDX analysis (scanning electron microscopy), chemical analysis of electrolytes and electrodes

Mechanical tests
Hardness tests, tensile tests, Charpy impact test, flexure and impact flexure tests on plastics and Dynstat specimens, rubber and elastomer testing, r- and n-value determination during tensile tests

Non-destructive testing
2D X-ray inspection: Defect analysis, 3D X-ray inspection: volume, porosity, foam structures, target-actual comparison using CT, wall-thickness analysis using CT and X-ray, analysis of cavities and pores in castings, visual testing (VT) – visual inspection of surfaces, penetrant testing (PT), magnetic particle testing (MT) – surface and near-surface defects in ferromagnetic materials, ultrasound testing (UT) – volume defects, thickness, cavities, cracks,
radiographic testing (RT / CT) – volume defects, pores, welded joints, eddy current testing (ECT) – surface/near-surface defects, coating thicknesses, conductivity, tightness/leak testing

Thermal analyses
Thermogravimetric analysis (TGA), differential thermal analysis (DTA), determination of the melting temperature and melting enthalpy (DSC), determination of reaction temperatures and enthalpy of reaction, determination of thermal extension of solid bodies

Fire and fire-protection tests
Fire behavior compliant to, glow wire test/hot-scratch test, oxygen index, maximum average rate of heat emission (MARHE), fire test, fire tests on complete e-vehicle systems

Surface tests and coatings
Color measurement, coating-quality tests, Mercedes, Honda, abrasion, scratch and wear resistance, coating-thickness determination, cross cutting test

Plastics / thermoplastics
Density determination, tensile and flexure tests, fogging behavior, determination of bake-hardening and material requirements for injection-molded parts

Airbag materials and energetic materials
Airbag materialography, dust and gas analysis, characterization of airbag fabric and pyrotechnic propellants, environmental simulation and performance tests, material tests on igniters and modules

Environmental and emissions tests
Thermal desorption analysis, total carbon emissions, formaldehyde emission/determination, odor test, resistance to media

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Managing Directors:
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| Technical Equipment

Microscopy & material analysis
Field emission scanning electron microscope, scanning electron microscope, stereo microscope, reflected-light microscope, metallography, confocal microscope

Computer tomography (CT)
Micro- to high-energy CT, micro-CT, nano-CT linear accelerator, CT for large objects

Thermal analyses & TGA / DSC
Macro thermogravimetric analysis (TGA), differential scanning calorimetry (DSC)

Spectroscopy & analytics
Fourier transform infrared spectrometer (FTIR), mass spectrometer (MS), gas chromatograph (GC), atomic absorption spectrometer (AAS), metal analyzer

Mechanical materials testing machines
Linear tester/scratch hardness tester, multi-impact tester, pendulum impact tester, universal testing machine/tensile testing machine

Fire & safety tests
Fire chamber for determination of the burning rate, UL94 fire chamber, test chamber with extinguishing and flooding functions, abuse test chambers with flue gas purification, high-temperature test chamber for batteries

Environment & climate tests
Environmental stress chamber, alternating-climate cabinet, climate test cabinet, sun simulation, xenon climate shock

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