

A background image showing a close-up of a hand holding a white, textured object, possibly a piece of fabric or a small component, against a blurred background. The image is overlaid with a subtle, repeating geometric pattern of interlocking lines.

QUALITY ASSURANCE
SOLUTIONS

 FOR US, IT'S PERSONAL

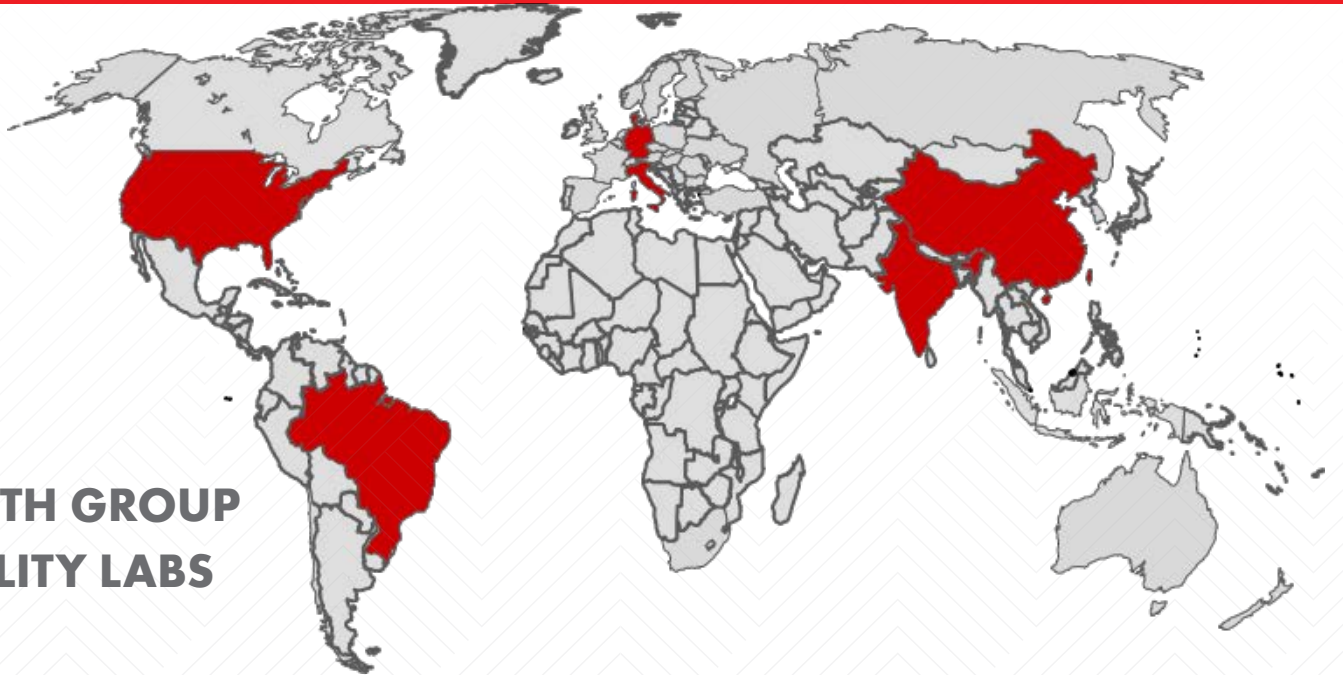
WÜRTH IS QUALITY: EVERYWHERE & EVERY TIME

Würth has a Global Supplier Quality Engineering (SQE) Network with Supplier Quality Engineers around the world. We utilize one audit format to ensure global consistency. Suppliers are continuously audited in an effort to ensure our suppliers have corporate and social responsibility processes in place, have sound manufacturing practices and a good supplier quality program themselves.

Through our audit process, we are able to identify areas needing improvement so we can minimize risk for Würth and our customers. In addition, when weaknesses are identified, Würth will work side-by-side with our suppliers to ensure sound actions are taken to improve their processes. The overall emphasis of our global network is to ensure quality product is delivered to our customers on time.

#1 INDUSTRIAL DISTRIBUTOR IN THE WORLD

**WÜRTH GROUP
QUALITY LABS**

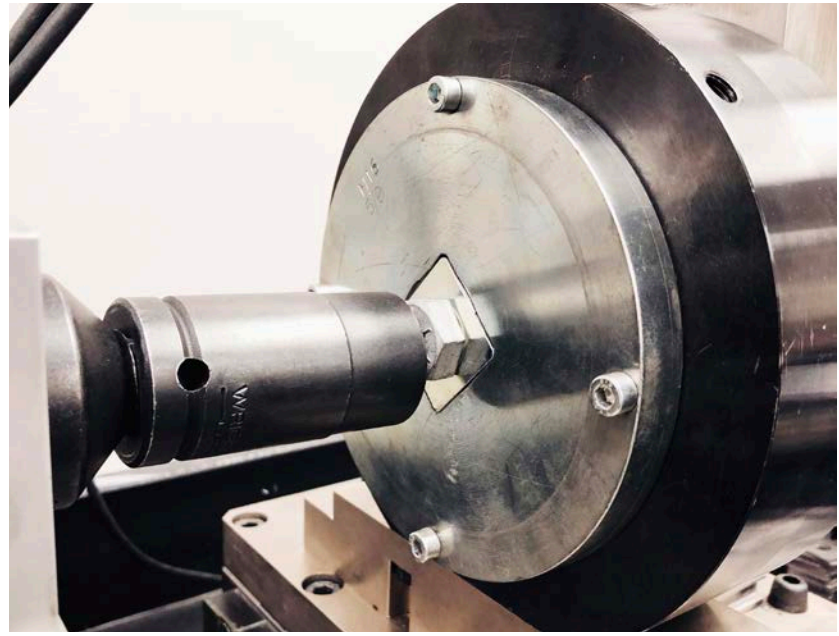


GLOBALLY ACCREDITED LABORATORIES

Würth provides trust and certainty to their customers when it comes to product testing. With our A2LA accredited quality lab located in North America, our four additional ISO 17025 accreditations globally in both Europe and Asia, and our lab in South America, we are able to do more than just ensure the quality of incoming goods, but can offer testing services to our customers. Our accreditation serves as proof of our technical competence in addition to the conformity with standards and specifications that are firmly anchored in our quality management.



Mitutoyo Ph-a14 Optical Comparator



Coefficient of Friction Tester

COMPREHENSIVE TESTING SOLUTIONS

Würth's product testing capabilities include a vast array of testing through:

- General Inspection Laser Lab System
- Rockwell and Vickers Hardness Testers
- Micro Hardness Testers
- X-Ray Coating Thickness Testers
- Friction Coefficient Testing
- Salt Spray Cabinet
- Thermo Scientific XRF Analyzer.

GET TO KNOW WÜRTH

- **Family Owned, Family Culture**
- **World's Largest Global Sales Force**
- **Flexible, Proactive, Local Support**
- **Industry Leading Technology**
- **Partnership Approach**



Rockwell Tester

TESTING SOLUTIONS

SCREW CONNECTIONS

Friction coefficient testing

A pre-tensioned screw connection is not possible without friction. At the same time, the friction coefficient must be as stable as possible to allow an easy assembly and maximum load-bearing capacity. We test standard screws 1/4" - 1" (M6 - M24).

This unit is capable of testing to a torque of up to 1,000 ft - lbs. and screws of up to 1" in diameter depending on grade and part configuration.

Torsion testing — testing of special screws

Many products and components are subjected to torsional forces during their operation. We have the ability to test fasteners which are subject to such torsional stresses when used in various applications. By testing them in torsion, we are able to simulate real life service conditions, check product quality, and ensure they meet their requirements.

MATERIAL SCIENCE

Material verification analysis

Our portable X-ray fluorescence spectrometer is a non-destructive analytical device used to verify the elemental composition of materials. A 50kV x-ray tube provides twice as much x-ray flux as a 40kV tube. PC software is used to remotely control unit, view analyses, and generate reports.



Thermo Scientific Niton XL 3tX-ray Fluorescence Analyzer

Salt Spray Cabinet



SURFACES

Corrosion testing — when mist turns salty

Our cabinet allows us to test the resistance and protection level of coatings by exposing the test samples to a controlled sodium chloride solution. The solution continuously attacks the surface of the test samples in the salt spray chamber for a specified amount of time based on the requirements. The testing time can last from a few hours up to several thousand hours. Upon conclusion of the test, the levels of white rust and red rust can be assessed.

HARDNESS TESTS

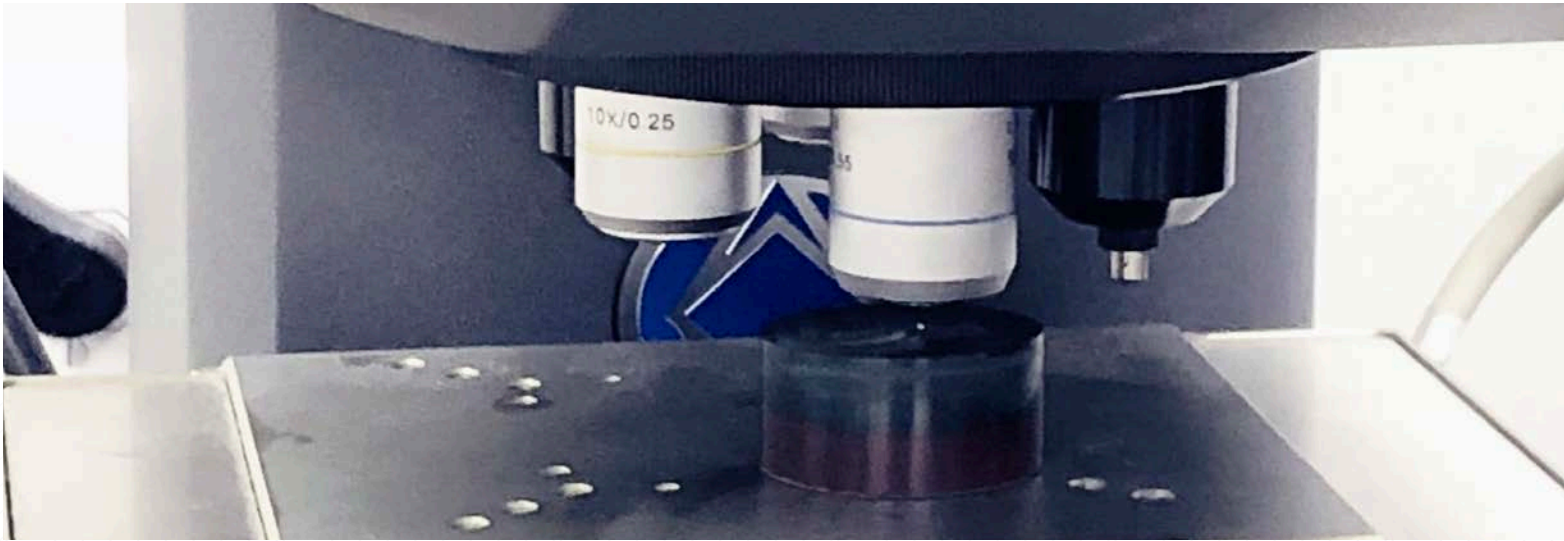
Metal Components

Our hardness testing capabilities includes Rockwell testing methods for determining the core hardness on metallic fastening components in line with current standards as well as Vickers and Knoop testing methods for evaluating the depth of case hardness on, among other things, tapping screws and thread rolling screws. Thanks to state-of-the-art equipment, simultaneous testing is also possible improving our productivity.

Rubber and Plastic Components

Plastics and rubber are tested for their hardness using the Shore A and Shore D methods for elastomers or thermoplastic elastomers depending on their hardness.

Rockwell and Vickers Hardness Testers



GEOMETRY

3D measuring — by sight, by touch and by laser

Our coordinate measuring machine (CMM) is a device that measures the geometry of physical objects by sensing discrete points on the surface of the object with a probe. CMMs typically specify a probe's position in terms of its displacement from a reference position in a three-dimensional Cartesian coordinate system (i.e., with X, Y, and Z axes). To play it safe and exclude the influence of temperature fluctuations and the change of length of the component, the 3D measuring instrument is located in a temperature controlled room for constant temperature and humidity.

Laser lab system

The LaserLab allows for SPC sampling, audits and first part inspection up to 1,000 times faster than traditional manual gaging techniques. The inspection rate per sample averages 20 seconds with Diameter range: 2mm-36mm and Part Length Range 15mm to 150mm. LaserLab measurements greatly reduces part to part variability by eliminating operator error and the uncertainty of other test instruments. Having a fully traceable NIST calibration cone and built in comprehensive thread database, tolerances and ranges can be accurately detected and met for not only dimensional, but advanced thread measurements.

ACCREDITED TEST LABORATORY

We are accredited as an official test center for many standardized testing methods according to DIN EN ISO/IEC. Laboratory accredited to 17025 by A2LA. Certificate number: 2816.01.

A FOCUS ON PROGRESS

The current list (last updated May 17, 2019) provides an overview of our methods. However, our goal is to continue to obtain accreditation for further testing methods and provide our customers with the documented evidence they need to drive their businesses forward.

TRUST AND CERTAINTY

The official recognition of our services means one thing in particular for our customers: we are a reliable and objective partner for quality assurance and product development in line with international requirements for measuring and testing technology. It also means that our customers are justified in placing their trust in our laboratory services. We have a flexible scope of accreditation that allows us to use the accredited methods regardless of the version of the standard.

WURTH SERVICE SUPPLY INC.
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ACCREDITED TESTING METHODS

Test	Test Method(s)
Mechanical Testing	
Rockwell Hardness (HRBW, HRC, HR15N, HR30N)	ASTM E18, F606/F606M; SAE J78, J81, J417, J933, J995; ISO 898-1, 898-2, 898-5, 898-61, 2320
Microhardness (Knoop and Vickers) (500g and 200g)	ASTM E384; SAE J78, J81, J933
Metallographic Evaluation	
Case Depth (Total and Effective)	SAE J423, J933
Preparation	ASTM E3
Microetching	ASTM E407
Depth of Decarburization	ASTM A574/A574M, F835/F835M, F2328; ISO 898-1, 898-5

WÜRTH INDUSTRY FAMILY OF COMPANIES

Standard	Test Method(s)
Surface Discontinuities	ASTM F788, F812, F835, F912, F912M; SAE J122, J1231, J10611, J1199; ISO 6157-1, 6157-2, 6157-3
Coating Thickness (X-Ray)	ASTM B568
Hydrogen Embrittlement	ASTM F606/F606M; SAE J78, J81, J773, J1237
Proof Load (Internal Threads)	ASTM F606/F606M
Salt Spray Testing	ASTM B117
Screw Test	
Drill Drive	SAE J78
Drive Torque	SAE J81
Torque	
Torsional Strength	SAE J78, J81, J933, J1237; ISO 898-1, 2320
Prevailing Torque	ASME B18.16M; IFI 101, 100/107, 124, 125
Torque-Tension (k-factor)	ISO 16047
X-Ray Fluorescence Spectrometry (XRF) (Semi-quantitative)	ASTM E572, E1621
Dimensional Testing	
External Pitch Diameter	Pitch micrometer, Tri-Roll gages, Go/No-Go gages
External Major Diameter	Micrometer, Optical comparator
External Minor Diameter	Optical comparator
Internal Pitch Diameter	Functional threaded plug gages
Internal Minor Diameter	Go/No-Go plain plug gage
Surface Roughness	Profilometer
Total Indicated Runout (TIR)	Dial/Digital indicator on bench, center or drop stand
Recess Check	Recess penetration gage, ANSI B18.6.3



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