

# Kiwa Cermet Italia Laboratories

Gruppo Kiwa Italia



▶ **Trust  
Quality  
Progress**

# Calibration of Measuring Instruments

**Kiwa Cermet Italia Italia carries out the calibration of equipment for the following measures:**

- LENGTH
- ROUNDNESS AND PROFILE
- FLATNESS AND ROUGHNESS
- FORCE
- PRESSURE
- HARDNESS
- RESILIENCE
- TORQUE
- CORNER AND LEVEL
- MASS
- TEMPERATURE
- AC AND DC VOLTAGE
- AC AND DC
- ELECTRICAL RESISTANCE
- FREQUENCY AND TIME
- ACTIVE ENERGY

**Kiwa Cermet Italia** Laboratories combine the calibration of instruments with the characterization of materials, components and products: only testing provides objective evidence for the validation of the design process and attestation of product conformity.

**Kiwa Cermet Italia** laboratories run testing to guarantee:

- the conformity of the product with mandatory and/or voluntary requirements
- the validation of declared performance
- the quality level of the product

Safety, Reliability and Functionality are the characteristic element of the product, that can be fully appreciated only through tests carried out by authoritative and skilled laboratories.



## Reference samples

- Parallel-planar blocks (\*)
- Roughness samples (\*)
- Round, spherical, hemispherical and swirling samples (\*)
- Optical disks for flatness and parallelism measurements (\*)
- Plastic and metallic thickness samples (\*)
- Zeroing Rods (\*)
- Angle blocks, goniometers, level gauges and inclinometers
- Scales (\*)
- Mass samples
- Hardness samples for metals, plastics and elastomers
- Reference Master

## Electrical Metrology

- Digital and analogical multimeters, testers, voltmeters, ammeters and ohmmeters (\*)
- Resistance gauges, earth electrode resistance, resistivity gauges (\*)
- Generators and probes for high voltage (\*)
- Shunt (\*)
- Dielectric Strength (\*)
- Multifunction Calibrators (\*)
- Oscilloscopes and Scopemeter (\*)
- Insulation gauges
- Resistors (\*)
- Amperometric clamps and clamp transducers (\*)
- Voltage Supplies (\*)
- Electrical safety tests (\*)
- Welders
- Electric energy meter (\*)

Find out more about our Laboratory services by scanning the **QR Code** or by following this link: [bit.ly/kiwa\\_labs](https://bit.ly/kiwa_labs)



## Frequency and time measures

- Clock/timepiece
- Frequency counter, counters, quartz
- precision oscillators (\*)
- Function Generators (\*)
- Digital and analogical chronometers (\*)

## Laboratory Equipment

- Parallel planar blocks calibration equipments (\*)
- Coordinate Measuring Machines (CMM) (\*)
- One - dimensional measuring machines
- 1,2,3 - axis measuring microscopes
- Roughness, roundness and profile gauges
- Profile projectors
- Tool setters
- Tracers
- Torsiometers and torque transducers (\*)
- Torque bars
- Step gauges
- Surface plates
- Strength application and measuring systems (\*)
- Displacement and elongation measuring systems (\*)
- Brinell hardness testing machines, Vickers,
- Rockwell on metal materials (\*)
- Charpy pendulum for resilience testing on metallic materials (\*)
- Resilience testing pendulum for testing on plastic materials (\*)
- Shore and IRHD durometers for testing on plastic materials (\*)
- Dynamometers and load cells
- Scales

## Measuring instruments

- Sliding Calipers for external, internal, depth and height measures (\*)
- Comparators and Linear Transducers (\*)
- Outside, Depth and 2-Point Micrometers (\*)
- Mechanical and Digital Altimeters (\*)
- Truschini (\*)
- Threaded, cylindrical and tapered rings and pads
- Smooth rings and pads (\*)
- Grooved rings and pads
- Set squares, cylinders and prism models,
- sharp edged rules, sine bars
- Measuring tapes (\*), ribs and laser distance meters
- Thickness gauges (mechanical, magnetic and ultrasonic thickness gauges)
- Bore gauge
- Dimensional, shape and angle gauge
- Levels and theodolites
- Torque wrenches, torque screwdrivers (\*) and torque multipliers
- Pressure gauges and pressure transducers,
- Vacuumeters and vacuum gauges
- Temperature strings, thermometers, infrared thermometers, thermal cameras, pyrometers and data loggers
- Thermo-hygrometers, thermo-hygrograph and hygrometers
- Tachometers
- Anemometers and Thermo-anemometers
- Luxmeters
- Densimeters
- Graduated pipettes and beaker

# Testing Laboratory Activities

- Characterization of equipment and devices with electrical and electromechanical operation
- Functional tests on finished products
- Environmental impact and corrosion testing
- Geometric and dimensional characterization of mechanical components
- Analysis of metallic materials, surface treatments and metallographies
- Welding process and operators qualification
- Mechanical, static and dynamic tests
- Failure analysis
- Technical assistance for the development of new products, materials and processes
- Product conformity assessment according to EU directives
- Periodical verifications of measuring instruments for legal use

## Metallographic tests

- Chemical analysis with optical emission spectrometer on Fe, Al, Cu, Ni, Mg alloys (\*)
- Chemical analysis of carbon and sulfur
- content (ASTM E1019) (\*)
- Chemical analysis with microsound EDS for qualitative and semiquantitative
- determination of base materials, surface replenishment and of foreign particles deposition

## Material analysis

- Macroscopic observations for macrostructural alignment (ASTM E 340) (\*)
- Microscopic observations for microstructural alignment (ASTM E 407) (\*)
- Scanning electron microscope (SEM) and EDS microprobe examinations
- Inclusion Content determinations (ASTM E 45 - A Method) (\*)
- Austenitic grain determinations, including heat treatment
- (UNI EN ISO 643; ASTM E112) (\*)
- Ferrite presence assessments
- Heat treatments with heating up to 1100 ° C
- Vickers Hardness and Microhardness in low load tests (ASTM E 384; ISO 6507-1) (\*)
- Determinations and verifications of the depth of carburized and hardened cases through Vickers tests (UNI EN ISO 2639)
- Metallic and other inorganic coatings - Vickers and Knoop microhardness tests
- (UNI EN ISO 4516)
- Measurements of thickness of hardened surface layers on ferrous parts
- (UNI 11153-1; UNI 11153-2; UNI 11153-3)
- Measurements Of Coating Thickness through Metallographic method (UNI EN ISO 1463) (\*)
- Welding operators and processes qualifications (ASME IX, EN standards)

## Chemical Tests

- Dye spot tests with prior Nitric Acid treatment (UNI 9834)
- Estimation of loss of absorptive power of
- anodic oxide coatings after sealing
- Weighing tests on zinc protective coatings on steel wire (UNI EN 10244-1,-2)
- Determination of the phosphate coat weight
- Determination of the chromium inversion film weight

## Corrosion tests

- Corrosion Testing according to ASTM A262 Practice E
- Corrodokote corrosion test (CORR test, UNI EN ISO 4541)
- Corrosion tests in artificial atmospheres - salt spray chamber NSS, ASS, CASS (UNI EN ISO 9227)



## Non-destructive testing (NDT)

- Visual testing (UNI EN 13018)
- Penetrant testing of welds (UNI EN 571-1)
- Magnetic particle testing (UNI EN ISO 9934/1)

## Noise and vibration tests

- Sound pressure and sound power levels measurements (UNI EN ISO 3746)
- Vibration and acceleration measurements

## Mechanical tests

- Tensile testing on metallic materials (UNI EN ISO 6892-1; ASTM E8) (\*)
- Resilience tests at room temperature, low and high temperature (EN 10045/1; ASTM E23)
- Brinell hardness tests on metallic materials (UNI EN ISO 6506/1; ASTM E10) (\*)
- Vickers hardness tests on metallic materials (UNI EN ISO 6507/1; ASTM E140; ASTM E92; ASTM E384) (\*)
- Rockwell hardness tests on metallic materials (UNI EN ISO 6508/1; ASTM E18) (\*)
- Vickers HV hardness tests on welds (UNI EN 1043/1) (\*)
- Shore hardness tests on plastics and elastomers (ISO 868, ISO 7619/1, ASTM D2240)
- Compression tests (UNI 558)
- Bend tests (UNI EN ISO 7438)
- Flanging tests (UNI EN ISO 8494)
- Single-axial fatigue tests on standard specimens and drawing components
- Rotating bending fatigue tests
- Determination of fatigue life expectancy with method stair case (UNI 3964)
- Dynamic fatigue tests for endosseous dental implants (UNI EN ISO 14801)
- Determination of resistance to vertical impact by dropping (UNI EN 22248)
- Impact tests

## Tests on paints and varnishes

- Cross-cut tests (UNI EN ISO 2409)
- Determination of gloss value (UNI EN ISO 2813)
- Determination Of The Hardness - Pencil Test (UNI 10782)
- Bend tests with cylindrical mandrel (UNI EN ISO 1519)
- Bend tests with conical mandrel (UNI EN ISO 6860)
- Tests of resistance to contact with acids / bases, hydrocarbons, oil and other substances
- Heat-shock resistance tests
- Impact resistance tests (ASTM D2794)
- Heat and hygroscopic conditioning tests in climate chamber
- Corrosion tests in artificial atmospheres - salt spray chamber NSS (UNI EN ISO 9227)
- Exposure of coatings to artificial weathering, to fluorescent UV lamps and water according to ASTM G 154-00 and UNI EN ISO 11507

## Health and safety at work (Legislative decree 81/2008)

- Electromagnetic pollution measurements
- Noise pollution measurements
- Illumination and photobiological measurements
- Handarm vibrations measurements

## Tests for finished products and components

- Static and dynamic stress tests on finished products
- Dimensional and geometrical characterization of finished products (\*)
- Failure analysis
- Degrees of protection provided by enclosures (IP code) against foreign matters and water IP XX (CEI EN 60529)
- Salt spray chamber conditioning tests (UNI EN ISO 9227)
- Heat and hygroscopic conditioning tests in climate chamber
- Exposure of coatings to artificial weathering, to fluorescent UV lamps and water according to ASTM G 154-00 and UNI EN ISO 11507
- Determination of the degree of contamination on mechanical components
- Conformity assessment on Individual Protection Devices (IPDs)
- Conformity assessment on sports equipment
- Conformity assessment on accessories for building (handles, hinges)
- Conformity assessment on enclosure, cases and containers
- Conformity assessment on measuring systems for liquids other than water (MID MI-005) (\*)
- Conformity assessment on automatic weighing instruments (AWIs) (MID MI-006) (\*)
- Conformity assessment on material measures and capacity serving measures (glasses and containers) (MID MI-008)
- Conformity assessment on dimensional measuring instruments (MID MI-009)

## Instruments management computerised system (SIGS)

Kiwa Cermet Italia developed an advanced instruments management system based on the use of the SIGS platform, thanks to the in-depth experience and technical expertise in the calibration of several types of instruments. The SIGS system allows:

- Correct metrological confirmations, issued regarding customer's requirements
- Barcode information management directly available
- Computerized and paperless management of calibration certificates
- User-friendly, responsive and multi-accessibility platform
- Schedule management
- Drifts analysis, instrument performance monitoring

For further information: [laboratorio@kiwacermet.it](mailto:laboratorio@kiwacermet.it)

# Testing and trials on products

**Kiwa Cermet Italia**, through the Group's network of laboratories completed by the accredited partner lab support, offers a wide variety of tests for different product types. A high skilled staff, up to date equipment, notifications and accreditations guarantee valid and repeatable test results.

With **Kiwa Cermet Italia**'s support, companies can dispose of a highly qualified laboratory service without costs of equipment maintaining and for an suitable internal structure. Test results can be targeted to the certification needs or the instrumental verification of developed product, to confirm quality over time or to assess possible purchases.

Depending on the type of product, our laboratories perform the following tests:

- Environmental tests
- Electrical safety
- Electromagnetic Compatibility (EMC)
- Performance
- Usability
- Corrosion
- Aging
- Mechanical resistance
- Hydraulic tests
- Chemical tests
- Organoleptic tests
- Biocompatibility building materials

## Discover the ACCREDIA accreditation valorized quality

ACCREDIA is the only accreditation body in Italy according to the 765/2008/EC Regulation. In this respect, only accredited testing and calibration laboratories can provide reliable, credible, and internationally accepted conformity statements to the market.

ACCREDIA evaluates and assesses skills, verifies laboratories behavior and performances. The accreditation obtained by **Kiwa Cermet Italia** attests to the quality of our laboratory activities through an independent verification of compliance of management systems and competences with internationally recognized regulatory requirements.

Relying on the experience and the expertise of its high skilled staff and modern equipment, **Kiwa Cermet Italia** Laboratories have received important awards, including:

- LAB N° 0001 and LAT N° 052 ACCREDIA accreditations according to ISO/IEC 17025 standard
- Laboratory listed in the "High Technology Network" of Emilia Romagna Region register
- Laboratory listed in Ministry of Education, University and Research' qualified laboratory register
- NADCAP Accreditation for Material Testing
- CB Testing laboratory accredited to perform test programmes and issue Test Reports (TRs) for IEC International Standards.



(\*) Activities covered by accreditation can be consulted at [www.accredia.it](http://www.accredia.it)



LAB N° 0001  
LAT N° 052

Test reports and calibration certificates bearing the ACCREDIA mark guarantee the compliance with rigorous international requirements, under constant and strict ACCREDIA surveillance.

The ILAC MRA trademark on test reports and calibration certificates states that the existence of a Multilateral Agreement, i.e. the mutual recognition of activities between accreditation bodies in Europe and the World.

## Trust Quality Progress

Kiwa Italy Group offers a wide range of services in the TIC domains, supporting organizations in innovation and growth challenges.

With more than 30 years of activity, Kiwa Italy Group operates as an independent body for the certification of goods, services, systems and persons, and for the verification, testing and calibration of products and equipment, offering a complete and comprehensive range of services, that can take into account specific needs also at the local level.

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