



# METRO- LOGY

THE EXCELLENCE OF MEASUREMENT  
AND SERVICES



# OUR STRENGTHS

WITH 50 YEARS OF EXPERIENCE  
AND A BROAD SPECTRUM OF KNOW-HOW,  
CERIB'S METROLOGY AND INSTRUMENTATION TEAM  
CAN GUARANTEE YOUR COMPANY  
CERTIFIED EXPERIENCE AND HIGH-QUALITY SERVICE  
CLOSE AT HAND.

## ATTENTIVE TO YOUR NEEDS

Our expertise ensures the quality of your measurements for:

- > controlling your manufacturing processes and guaranteeing the quality of your products
- > taking reliable measurements with dependable traceability
- > connecting your instruments reliably and coherently.

## RECOGNIZED TECHNICAL COMPETENCE

CERIB Épernon is accredited by the French Committee for Accreditation (COFRAC), in accordance with NF EN ISO/IEC 17025, for its operations in the laboratory and in the field.

- > Forces
- > Pressures
- > Weights and weighing
- > Dimensions - Sieves
- > Test machines
- > Thermostatic environmental chambers

CERIB Épernon is ISO 9001 certified by AFNOR Certification for all its metrology operations in the laboratory and in the field.

- > Calibration and/or verification of measurement and testing apparatus



ACCREDITATION N° 1.0001  
MACHINES D'ESSAIS MÉCANIQUES  
ENCEINTES CLIMATIQUES  
PORTÉE DISPONIBLE  
SUR WWW.COFRAC.FR



ACCREDITATION N° 2.1019  
FORCES/ COUPLES  
ACCREDITATION N° 2.1132  
PRESSION  
ACCREDITATION N° 2.1161  
MASSES  
ACCREDITATION N° 2.1954  
DIMENSIONNEL  
PORTÉE DISPONIBLE  
SUR WWW.COFRAC.FR







## CUSTOMIZED SERVICE CLOSE AT HAND

CERIB has more than 600 m<sup>2</sup> of laboratory space in Épernon, south-west of Paris, and 10 mobile laboratories that travel throughout France for assignments in the field.

The CERIB Indian Ocean team based in Saint Denis, on Réunion Island, possesses laboratories and all the technical resources required for carrying out assignments rapidly, all year round, throughout the Indian Ocean area.

Our teams of expert metrologists will attend to your needs and respond rapidly to your requests wherever you may be (France, Europe, further afield).

In addition to calibration services, CERIB can help your company through special intracompany or intercompany training sessions.

## DEDICATED SPACE

We have a platform where customers can download documents issued by CERIB. You can therefore obtain all the PDF files concerning the work we perform for you at your facilities or in our laboratories.

# EXPERTISE

## MECHANICAL TESTING MACHINES

### RANGES

- > Tensile strength: up to 300 kN
- > Compressive strength: up to 6,000 kN
- > Lengths: up to 100 mm

### TYPES OF APPARATUS CALIBRATED

- > Compressive / tensile-strength testing machines
- > Plate bearing test apparatus
- > Pullout test apparatus

### STANDARDS

- > NF EN 12390-4
- > NF EN 772-1
- > NF EN ISO 9513
- > NF EN ISO 7500-1

## FORCES / TORQUES

### RANGES

- > Tensile strength: up to 250 kN
- > Compressive strength: up to 6,000 kN
- > Torque: up to 500 Nm

### TYPES OF APPARATUS CALIBRATED

- > Force sensors
- > Scales
- > Ring dynamometers
- > Torque wrenches
- > Torque meters
- > Stress meters

### STANDARDS

- > Méthodes de mesure internes
- > Norme NF EN ISO 376

## TEMPERATURE / HUMIDITY

### RANGE

- > -20°C to 190°C

### TYPES OF APPARATUS CALIBRATED

- > Temperature measurement chains
- > Thermostatic environmental chambers
- > Ovens
- > Thermostatic baths
- > Preservation trays
- > Air-conditioned rooms
- > Water-bath heating systems

### STANDARDS

- > FD X 15-140
- > NF EN IEC 60068-3-5

## DIMENSIONS

### TYPES OF APPARATUS CALIBRATED

- > Dial gauges
- > Displacement sensors
- > Callipers
- > Depth gauges
- > Sieves
- > Wire sensors, inclinometers
- > Grid sieves
- > Extensometers

## WEIGHTS

### RANGE

- > 1 g to 20 kg

### TYPES OF APPARATUS CALIBRATED

- > Calibration weights

### CALIBRATION METHOD

- > Double weighing

## AND ALSO

## SPECIFIC EQUIPMENT ASSOCIATED WITH MATERIALS TESTING

MICRO-DEVAL

RING AND BALL

LOS ANGELES

COVER METER

MIXER

GYRATORY COMPACTOR

DYNAMIC PENETROMETER

SAND-EQUIVALENT APPARATUS

SLAB COMPACTOR

BENKELMAN BEAM

INTERNAL VIBRATOR

## CLOSE-UP

### 3D GEOMETRICAL MEASUREMENT

#### FIELDS

- > Automatic 3D vision measuring machine
- > XY measuring table, 300 mm x 300 mm, with 0.1- $\mu$ m-resolution linear encoders
- > Optical quality-control system (high-resolution camera, programmable motorized zoom (up to 400x))
- > Lighting control (programmable LEDs)

#### CHARACTERISTICS MEASURED

- > Sieves used for grain-size analysis
- > Geometry (arrises, diameters, radii, etc.)

#### STANDARDS

- > Procedure for sampling meshes of sieves to be checked, as per standards NF EN ISO 3310-1 and 2

### VOLUMES

#### RANGE

- > 2 ml to 10 l

#### TYPES OF APPARATUS CALIBRATED

- > Piston-operated volumetric apparatus
- > Admixture pumps
- > Measuring cylinders

#### STANDARDS

- > Norme NF EN ISO 8655-5
- > NF EN ISO 8655-6

### WEIGHING

#### RANGES

- > 1 g to 3,000 kg with calibration weights
- > Up to 6,000 kg with Leviatys®

#### TYPES OF APPARATUS CALIBRATED

- > Bench scales
- > Floor scales, beltscales (on site)

#### CALIBRATION METHOD

- > As per in-house weighing method

### PRESSURES

#### RANGES

- > From -1 bar to 1,000 bars relative pressure for laboratory and field measurements

#### TYPES OF APPARATUS CALIBRATED

- > Metal pressure gauges
- > Pressure sensors
- > Binder recovery test pressure gauge
- > Vacuum gauges

#### STANDARDS

- > In-house procedure for pressure

### ELECTRICAL MEASUREMENT

#### RANGES

- > 1 mV to 1,020 V
- > 1  $\mu$ A to 20 A
- > 1  $\Omega$  to 1,100 M $\Omega$

#### TYPES OF APPARATUS CALIBRATED

- > Multimeters
- > Current clamps
- > Insulation testers

#### CALIBRATION METHOD

- > As per in-house method, using calibrator



# TAILORED SOLUTIONS

## FOR ALL OUR CUSTOMERS

### INDIVIDUALIZED STUDIES

and fine tuning. These services concern verification procedures consistent with the equipment used:

- choice of parameters to be checked and of the calibration procedure, in accordance with conditions of use,
- fine tuning of calibration procedure, evaluation of measurement uncertainty associated with the check and, where applicable, decision on conformity by means of comparison with an acceptance criterion.

### FIELD CALIBRATION

Field calibration concerns test stands, multi-parameter checks, adjustment of adaptor parts, and setting up for force measurements.

Examples: field weighing stations, force/pressure/dimension measurement on same test stand, creep tests, dynamic measurement, measurement in force range up to 18,000 kN, acquisition of force/time curves for verification of loading ramp-up speeds.

### THE EXPERT PERSONNEL

of CERIB's Metrology teams is individually qualified for each measurement field.

### GUARANTEE

CERIB guarantees the traceability of measurements against national gauging standards.

## IN FRENCH OVERSEAS TERRITORIES AND INTERNATIONALLY

CERIB has facilities on Réunion Island that make all the company's expertise and know-how available to customers in and around the Indian Ocean.



Large numbers of calibration campaigns are also carried out in Guyana, Martinique and Guadeloupe, in French Polynesia, New Caledonia, and in the laboratories of testing centres in Belgium, Algeria, Tunisia, etc.

CERIB also provides services internationally for evaluations and to provide technical assistance for setting up metrology laboratories.





## SCOPE OF INTERVENTION

### CERIB'S METROLOGY TEAM WORKS IN MANY FIELDS

// MECHANICAL INDUSTRIES

// AUTOMOTIVE INDUSTRY

// AERONAUTICS INDUSTRY

// RAILWAY INDUSTRY

// NUCLEAR INDUSTRY

// CHEMICAL AND CHEMICAL-RELATED INDUSTRIES:  
CHEMICALS AND PETROLEUM  
PHARMACEUTICS AND COSMETICS

// CONSTRUCTION AND CONSTRUCTION MATERIALS:  
CONCRETE  
AGGREGATE  
CEMENTS AND HYDRAULIC BINDERS

// ROAD AND GEOTECHNICAL TESTING

// POLYMER AND COMPOSITE MATERIALS

// AGRICULTURE AND AGRI-FOODSTUFFS INDUSTRY



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