

Classification of Scopes in ISO/IEC 17025 (Calibration)

Introduction

Scopes of accreditation is defined by the classifications below. Detailed descriptions of the laboratory's accredited capabilities are contained in one text that appears under the specific parameters and which contains the following elements:

- Measurement ranges for each parameter;
- A least uncertainty of measurement - A Calibration Measurement Capability (CMC) in terms of uncertainty of measurement; and
- Where applicable, a reference to a standard, specification, or in-house calibration procedure.

For example:

Pressure and vacuum measuring devices

Pressure gauges Calibration in the range 1.5 kPa to 70 MPa including test gauges as defined in AS 1349 with least uncertainties of measurement of 0.050%

Accreditation for these scopes may be granted in whichever applicable field of calibration and/or sampling associated with subsequent calibration that best suits the concerned authority.

The scope of accreditation may be extended provided that the laboratory complies with conditions for accreditation for the classes of scopes or specific measurements involved. Where the existing classes do not cover the needs of a laboratory, PAB welcomes proposals for additional classes to be included in this field.

Limit Gauges

Plain plug gauges

Plain ring gauges

Plain gap gauges

Taper plug gauges

Taper ring gauges

Parallel screw plug gauges

Parallel screw ring gauges

Adjustable thread caliper gauges for parallel threads

Taper screw plug gauges

Taper screw ring gauges

Adjustable thread caliper gauges for taper threads

Profile gauges

Position and receiver gauges

Spline and serration gauges

Jigs, Fixtures, Cutting Tools and Components

Jigs and fixtures

Cutting tools

Components

Engineering metrology equipment

Surface plates

Toolmakers' flats

Straightedges

Squares

Angle plates

Bevel protractors

Engineer's parallels

Precision spirit levels

Micrometer water levels

Precision vee blocks
Optical flats
Optical parallels
Thread measuring accessories
Sine bars and sine tables
Dividing heads and tables
Eccentric mandrels
Micrometer heads
Internal/External micrometers
Micrometer height and depth gauges
Electronic indicators, dial gauges and test indicators
Bore gauges
Electronic/vernier/dial calipers
Electronic and vernier height and depth gauges
Feeler gauges
Extensometers
Steel rules and measuring tapes
Micrometer setting gauges

Machine tools

Geometric features
Positioning accuracy
Performance tests

Surface topography

Surface texture
Roundness
Roundness standards

Gears, splines and serrations**Length and angle standards**

Angle gauges and precision polygons
External cylindrical Standards
Internal cylindrical standards
Gauge blocks and accessories
Length bars and accessories
Precision circular scales
Precision graticules
Precision linear scales
Surface finish reference standards
Screw pitch reference standards
Spherical standards

Dimensional Precision Instruments

Auto collimators
Alignment telescopes
Optical plumb lines
Optical levels
Photogrammetric cameras
Laser alignment and leveling equipment
Electronic levels
Engineers' comparators
Height setting micrometers
Length measuring machines
Coordinate length measuring machines

Screw diameter measuring machines
Screw pitch measuring machines
Gear and hob measuring equipment
Precision projection apparatus
Dial gauge calibrators
Extensometer calibrators
Displacement instruments

Survey and alignment equipment

Theodolites
Optical plumb lines
Optical levels
Laser alignment and levelling equipment
Survey staffs
Survey tapes
Tape testing benches
Electronic distance measuring (EDM) equipment
Baselines

Masses

Determination of mass

Weighing devices

Precision laboratory balances
Industrial balances
Industrial weighing appliances
Hopper weighing systems

Volumetric equipment

Volumetric glassware
Special laboratory volumetric apparatus
Industrial volumetric proving measures
Standard measures
Pipe provers
Industrial storage tanks
Road and rail tankers

Density Measurement

Density of solids
Density of liquids
Density of gases

Hydrometers

Density hydrometers
Alcoholometers
Brix hydrometers
LPG hydrometers

Densitometers

Liquid densitometers
Gas densitometers
Other densitometers

Flow measuring devices

Anemometers
Sonic Nozzles

Orifice meters
Gas meters
Liquid meters
Current meters
Open channel water meters
Weir type structures

Oil and gas measurement systems

Gas Emission Tester-Analyzer

Measuring instruments on type approval tests

Non-automatic weighing devices
Liquid measuring instruments
Liquor dispensers
Length measuring instruments
Area measuring instruments
Farm milk tanks
Load cell
Weighing-in-motion systems
Belt conveyor weighers
Totalising hopper weighers
Automatic catchweighers
Multi-dimensional measuring instruments
Automatic tank level gauges
Gas measuring instruments

Barometers

Aneroid barometers
Barographs
Mercury barometers
Gauge barometers
Altimeters
Other barometers

Pressure and vacuum measuring devices

Pressure gauges
Vacuum gauges
Pressure transducers/transmitter
Pressure recorders
Mercury manometers
Other liquid manometers
Digital manometers
Pressure control devices

Pressure gauge testers

Pneumatic operated piston gauges
Hydraulic operated piston gauges
Pressure calibrators

Force measuring devices

Elastic force measuring devices/ Proving Ring
Load cells
Force gauges

Speed measuring devices

Tachometers

Speedometers
Velocity transducers

Torque measuring devices

Torque wrenches/drivers
Torque transducers/analyzers/meters
Torque multiplying gearboxes

Testing machines

Tension and universal machines in tension
Compression and universal machines in compression
Vickers hardness machines
Rockwell hardness machines
Brinell hardness machines
Rockwell superficial hardness machines
Vickers low-load hardness machines (HVO.2 to HVS)
Vickers micro-hardness machines (less than HVO.2)
Izod impact machines
Charpy impact machines
Resilience testing machines
Deadweight rubber hardness testers
Deadweight micro-hardness rubber testers
Rubber hardness meters (durometers)
Plastic hardness testers
Torsion machines
Tension-torque machines
Road friction testers

Ancillary mechanical testing equipment

Portable Brinell measuring microscopes
Indenters for hardness machines
Hardness blocks for metals testing
Hardness blocks for rubber and plastic testing
Thickness gauges for textiles, rubber and plastic
Specimen cutters for rubber and plastic
Paper products testing equipment

Ancillary testing equipment for construction materials

Test sieves
Ovens
Dial gauges and other displacement measuring devices
Vicat apparatus
Penetrometers and penetration cones
Penetration needles
Nuclear moisture/density gauges

Resistors, resistance boxes and potential dividers

Precision resistors, resistance boxes and conductance boxes
Volt ratio boxes and potential dividers
DC shunts
AC shunts

Capacitors

Precision capacitors
Capacitance attenuators

Capacitance potential dividers

Magnetic materials and instruments

Magnetic materials

Magnets, solenoids and Helmholtz coils

Magnetic permeameters

Magnetic frames and squares

Fluxmeters/ Gauss meters

Magnetometers and search coils

Hibbert magnetic standards and other flux linkage generators

Flux density meters

Inductors and transformers

Inductors, self and mutual

Ratio transformers

Power transformers and reactors

Current transformers and protective current transformers

Voltage transformers and protective voltage transformers

Audio transformers

R.F. transformers

Pulse transformers

Auto transformers

Phase shifting transformers

Reference ballasts

Neutral earthing transformers

Voltage standards

Standard cells

Electronic e.m.f. reference devices

Precision transfer instruments

A.C./D.C. transfer instrument

Electrical Instrument calibrators

D.C. voltage

A.C. voltage

DC current

AC current

Resistance

Capacitance

Inductance

Electrical Indicating and Recording instruments

D.C. voltmeters

A.C. voltmeters

D.C. ammeters

A.C. ammeters

Wattmeters

Varmeters

Phase angle indicators

Power factor meters

Ohmmeters

LCR meters

Galvanometers and null detectors

Electricity meters

Graphic recording instruments

Digital storage recorders
Instrumentation tape recorders
Electric field strength meters
Digital multimeters/ Analog multimeters
pH meters
Conductivity meters
Resistivity meters
Clamp meters

Bridges, potentiometers, test sets

D.C. bridges
D.C. potentiometers
A.C. bridges
A.C. potentiometers
Ratiometers
Current transformer testing sets
voltage transformer testing sets
Partial discharge test equipment
High voltage test sets

Frequency and time measuring instruments and standards

Frequency meters
Wavemeters
Counters
Time Interval meters
Clocks and watches
Stroboscopes
Tachometers
Frequency standards
Time interval calibration
Coordinated Universal Time (CUT)
Sound level meters

Waveform measuring instruments

Frequency characteristics
Input characteristics
Timing characteristics
Distortion

Power supplies**Signal sources**

Frequency characteristics
Output characteristics
Modulation characteristics
Sweep characteristics

Electronic equipment

High voltage impulse and disturbance tests
Transducer indicators and calibrators
Charge amplifiers
Doppler radar equipment
EMI/EMC Equipment

High voltage equipment

Direct voltage tests
Alternating voltage tests
Impulse voltage tests
Impulse current tests
Partial discharge tests
Dielectric tests
Switching impulse voltage tests

Optical fibre systems instruments**Calibration of temperature measurement equipment**

Rare metal thermocouples
Base metal thermocouples
Temperature fixed points
Metallic resistance thermometers
Semi-conductor thermometers
Liquid-in-glass thermometers
Optical pyrometers
Radiation pyrometers and infra-red thermometers
Vapour pressure thermometers
filled metal systems
Bimetallic systems
Digital quartz frequency units
Digital temperature indicator systems

Calibration of ancillary temperature measuring instruments

Portable potentiometers
Digital voltmeters
Resistance bridges
Indicators, recorders and controllers
Temperature Transmitters (T/C and RTD)
Strip lamps
Blackbody sources

Calibration of clinical thermometers

Liquid-in-glass
Disposable
Electronic

Testing of temperature-controlled enclosures

Ovens, Furnaces and baths
Incubators
Autoclaves and sterilizing ovens
Industrial freezers
Chamber

Hygrometry

Calibration of humidity measuring devices
Measurement of relative humidity
Measurement of dew point
Testing of environmental/humidity chambers

Ancillary testing equipment for paints and petroleum products

Wet film thickness gauges
Fineness of grind gauges

Viscometers
Flow cups
Scratch needles
Ovens
Pensky-Martens apparatus

Electromedical Devices

Approval test
Performance test

Surface Temperature Measurement

Photometry Equipment

Lux meter/Light meter

Particle Counters

Air type
Liquid type