

Abstec Calibrations Australia Pty Ltd Accreditation No: 11087

This facility complies with the requirements of ISO/IEC 17025:2005

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1.01 Limit gauges

.01 Plain plug gauges

Up to 100 mm

with least uncertainties of measurement of

$(0.6 + 0.02 L)$ m where L is the diameter in mm

.03 Plain gap gauges

Up to 300 mm with least uncertainties of measurement of

$(2.6 + 0.01 L)$ m where L is the gap in mm

1.02 Jigs, fixtures, cutting tools and components

Types requiring measurements similar to those covered under 1.01 and 1.03 including angle, form and linear measurements up to 1.5 m

with least uncertainties of measurement of δ

$(1 + 0.04L)$ m where L is the length in mm

.01 Jigs and fixtures

.21 Components

As in 1.02.01

1.03 Engineering metrology equipment

.08 Precision spirit levels

Type 1, 10 seconds of arc sensitivity for compliance with AS 2054

with least uncertainties of measurement of δ

3 seconds of arc

.21 Micrometer heads

For compliance with AS 2328

.22 External micrometers

Up to 500 mm for compliance with AS 2102 and BS 870

with least uncertainties of measurement of

$(1.3 + 0.005 L)$ m where L is the length in mm

.23 Internal micrometers

Up to 350 mm for compliance with AS 2102

with least uncertainties of measurement of

$(5.7 + 0.01 L)$ m where L is the length in mm

.24 Micrometer height and depth gauges

Depth micrometers up to 300 mm for compliance with BS 6468

with least uncertainties of measurement of δ

$(3.3 + 0.03 L)$ m where L is the length in mm

1.03 Engineering metrology equipment (Continued)

.25 Electronic indicators, dial gauges and test indicators

Dial gauges for compliance with AS 2103 and BS 907
with least uncertainties of measurement of
 $(1.5 + 0.01L)$ m where L is the length in mm

.27 Electronic and vernier callipers

Up to 1000 mm for compliance with JIS B 7507
with least uncertainties of measurement of
 $(8.7 + 0.06 L)$ m where L is the length in mm
Digital calliper gauges (10 m reading) up to 1000 mm
with least uncertainties of measurement of δ
 $(10 + 0.02L)$ m where L is the length in mm

.28 Electronic and vernier height and depth gauges

Height gauges up to 300 mm for compliance with BS 1643
with least uncertainties of measurement of
 $(7 + 0.01 L)$ m where L is the length in mm

.29 Feeler gauges

For compliance with AS 1655 with least uncertainties of measurement of 2 m

.30 Extensometers

For compliance with AS 1545
with least uncertainties of measurement of
 $(1 + 0.5 L)$ m where L is the extension in mm

.31 Steel rules and measuring tapes

Steel rules up to 2 m with least uncertainties of measurement of
0.04 mm up to 1 m;
0.07 mm from 1 to 2 m
Retractable steel pocket rules to 16 m
with least uncertainties of measurement of 0.5 mm
Tapes up to 32 m with least uncertainties of measurement of
0.2 mm up to 8 m;
0.5 mm from 8 to 16 m;
1 mm from 16 to 24 m;
2 mm from 24 to 32 m

.32 Micrometer setting gauges

Up to 1 000 mm with least uncertainties of measurement of δ
 $(0.4 + 0.003 L)$ m where L is the length in mm

.99 Other measuring instruments and tools

Thickness gauges with least uncertainty of measurement of
0.005 mm up to 25 mm
0.007 mm above 25 mm up to 50 mm

1.08 Length and angle standards

.04 Gauge blocks and accessories

Calibration up to 100 mm for compliance with AS 1457, grade 2

1.09 Precision instruments

.38 Dial gauge calibrators

1.11 Masses

.01 Mass standards

with least uncertainties of measurement of

15 g from 1 mg to 30 g;

30 g from 30 g to 50 g;

50 g from 50 g to 200 g; 70 g from 200 g to 250 g;

1 in 10^5 or 15 mg (whichever is greater) from 200 g to 2 kg;

1 in 10^5 or 0.15 g (whichever is greater) from 2 kg to 30 kg

1.12 Weighing devices

.01 Precision laboratory balances

With least uncertainties of measurement of

2 in 10^5 or 10 g (whichever is greater) from 1 mg to 1 g;

1.5 in 10^6 or 20 g (whichever is greater) above 1 g and up to 1 kg

.02 Industrial balances

With least uncertainties of measurement of

10 mg up to 5 kg;

5 in 10^6 or 80 mg (whichever is greater) above 5 and up to 40 kg

.03 Industrial weighing appliances

Class 3 and 4 instruments to NMI V1 Uniform Test Procedures

with least uncertainties of measurement of

1 in 10^4 up to 25 t

.04 Hopper Weighing Systems

Class 3 and 4 instruments to NMI V1 Uniform Test Procedures

with least uncertainties of measurement of

1 on 10^4 up to 25 t

1.19 Barometers

Calibration in the range 96 to 105 kPa with least uncertainties of measurement of 13 Pa

1.20 Pressure and vacuum measuring devices

Calibration in the range -100 kPa to 200 MPa

with least uncertainties of measurement of

0.02% from -100 kPa to -3 kPa;

1 Pa from -3 kPa to 3 kPa;

0.02% from 3 kPa to 120 MPa;

0.25% from 120 MPa to 200 MPa

1.20 Pressure and vacuum measuring devices (Continued)

.01 Pressure gauges

Including test gauges as defined in AS 1349

.02 Vacuum gauges (bourdon tube)

.11 Pressure transducers

.13 Pressure recorders

.21 Mercury manometers

.22 Other liquid manometers

.23 Digital manometers

1.23 Force measuring devices

Calibration of force measuring systems such as force measuring rings for soils testing and devices used in pre and post-stressing jacks and jacking systems used for stressing tendons in concrete based on 1.26.01 and 1.26.02

Calibration of working force standards at forces up to 20 kN to Class 1 requirements of AS 2193

.01 Calibrating devices

.02 Elastic force measuring devices

.04 Load cells

1.24 Speed measuring devices

.99 Other devices

Calibration of vehicle speed and distance measuring unit with least uncertainties of measurement of 0.25 km/h in the range 20 to 180 km/h for speed 1 m over a distance of 1 km for distance

1.25 Torque measuring devices

.01 Torque wrenches

Calibration in the range 0.1 to 50,000 Nm, with least uncertainties of measurement of 0.5% from 0.1 to 5,500 Nm, and 1.0% from 5,500 to 50,000 Nm

.02 Torque transducers

Calibration in the range 0.1 to 50,000 Nm, with least uncertainties of measurement of 0.2% from 0.1 to 5,500 Nm, and 0.5% from 5,500 to 50,000 Nm.

1.26 Testing machines

.01 Tension and universal machines in tension

Calibration to the following classes of AS 2193

Class AA up to 500 kN

.02 Compression and universal machines in compression

Calibration to the following classes of AS 2193

Class AA up to 500 kN; 580 kN to 2 MN;

Class A up to 2 MN

.11 Vickers hardness machines

Partial and complete calibration from 9.8 to 1176 N to AS 1817 and similar specifications

1.26 Testing machines

.12 Rockwell hardness machines

Partial and complete calibration except depth measuring device (clause 3.4) to AS 1815 and similar specifications

.13 Brinell hardness machines

Partial and complete calibration to AS 1816 and similar specifications

.14 Rockwell superficial hardness machines

partial and complete calibration except depth measuring device (clause 3.4) to AS 2025 and similar specifications

.15 Vickers low-load hardness machines (HV 0.2 to HV 5)

Verification of forces from 9.8 to 49 N to ISO 146-1 and similar specifications

.16 Vickers micro-hardness machines (less than HV 0.2)

Verification of forces to ISO 146-2 and similar specifications

.21 Izod impact machines

partial and complete calibration to AS 1544 and similar specifications

.22 Charpy impact machines

Partial and complete calibration to AS 1544, ASTM E23 (except striker dimensions)

1.27 Ancillary mechanical testing equipment

.01 Portable Brinell measuring microscopes

.02 Indenters for hardness machines

Visual examination

1.32 Resistors, resistance boxes and potential dividers

.01 Precision resistors, resistance boxes and conductance boxes

With least uncertainties of measurement of

10 ppm + 0.5 up to 1 M

50 ppm from 1 to 10 M

0.1% from 10 to 100 M

.02 Volt ratio boxes and potential dividers

With least uncertainties of measurement of

10 ppm for volt ratio boxes to 100 V

50 ppm from 100 to 1 000 V

5 ppm + 5×10^{-7} for variable potential dividers with ratios of 10^{-7} to 1:1

.03 DC shunts

With least uncertainties of measurement of - based on 1.32.01

.04 AC shunts

With least uncertainties of measurement of - based on 1.39.04

1.36 Voltage standards

.01 Standard cells

With least uncertainties of measurement of -5 V

.11 Electronic e.m.f. reference devices

With least uncertainties of measurement of - 5 ppm at 1, 1.018 and 10 V

1.38 Instrument calibrators

With measurement capabilities based on 1.39

.01 D.C. voltage

.02 A.C. voltage

.11 D.C. current

.12 A.C. current

.51 Resistance

1.39 Indicating and recording instruments

.01 D.C. voltmeters

With least uncertainties of measurement of

50 ppm + 5 V from 1 mV to 100 Volt

50 ppm + 10 mV from 100 to 1 000 Volt

.02 A.C. voltmeters

0.07% + 50 V from 10 mV to 1 000 Volts and 50 Hz to 20 kHz

0.15% from 10 mV to 1 000 V and 20 to 50 kHz

1.0% from 10 mV to 1 000 V and 50 to 100 kHz

1.0% from 100 mV to 3 V and 100 to 500 kHz

1.39 Indicating and recording instruments (Continued)

.03 D.C. ammeters

Including clamp-on meters

0.03% from 10 A to 15 A

0.5% from 15 to 200 A

1% up to 1 000 A using multi turn coil

.04 A.C. ammeters

Including clamp-on meters

0.05% from 15 A to 3 A and 50 Hz to 5 kHz

0.15% from 15 A to 1.5 A and 5 to 10 kHz

0.05% from 3 to 15 A and 50 Hz to 1 kHz

0.6% to 600 A at 50 Hz

1% to 1 000 A using multi turn coil - from 50 to 400 Hz

1.39 Indicating and recording instruments

.09 Ohmmeters

with least uncertainties of measurement of -As listed in 1.32.01

.10 LCR meters

Calibration of Capacitance meters only, with least uncertainties of measurement of: 1% + 5 pF from 0.5 nF to 1100 F

.11 Galvanometers and null detectors

.81 Graphic recording instruments

1.40 Bridges, potentiometers, test sets

.01 D.C. bridges

.02 D.C. potentiometers

.11 A.C. bridges

1.41 Frequency and time measuring instruments and standards

.01 Frequency meters

.11 Counters

With least uncertainties of measurement of - 1 part in 10^7 up to 100 MHz

.13 Clocks and watches

.14 Stroboscopes

Calibration of Tachometers

1.39 Indicating and recording instruments

.21 Frequency standards

With least uncertainties of measurement of - as for 1.41.11

1.51 Electronic equipment

.30 Miscellaneous equipment and tests

Verification of Portable Appliance Testers, with least uncertainties of measurement based on 1.32.01, Resistance.

Verification of Residual Current Circuit Breaker Testers, with least uncertainties of measurement of 3% + 1 digit for AC current and 2.5% + 1 ms for time.

1.80 Calibration of temperature measuring equipment

.02 Base metal thermocouples

With least uncertainties of measurement of
(10 + 0.25% E) V from -80 to 1100°C

.05 Metallic resistance thermometers

With least uncertainties of measurement of
0.1°C from -80 to 250°C
0.35°C from 250 to 600°C

.06 Semi-conductor thermometers

With least uncertainties of measurement of
1°C from -80 to 150°C

1.80 Calibration of temperature measuring equipment

.11 Liquid-in-glass thermometers

With least uncertainties of measurement of
0.05°C at 0°C
0.1°C from -80 to 100°C
0.2°C from 100 to 250°C

.21 Vapour pressure thermometers

With least uncertainties of measurement of
0.05°C or ±1% of range (whichever is the greater)
from -30 to 300°C

.22 Filled metal systems

With least uncertainties of measurement of
0.5°C or ±1% of range (whichever is the greater) from -80 to 300°C

.23 Bimetallic systems

With least uncertainties of measurement of
0.5°C or 1% of span (whichever is the greater) from -80 to 300°C

.41 Digital temperature indicator systems

With least uncertainties of measurement of
0.2°C + 1 digit from -80 to 200°C
0.5°C + 1 digit from 200 to 350°C
2.0°C + 1 digit from 350 to 1100°C

1.81 Calibration of ancillary temperature measuring instruments

.01 Portable potentiometers

With least uncertainties of measurement of $0.002\% + 3 \text{ V DC}$

.02 Digital voltmeters

With least uncertainties of measurement of $0.002\% + 3 \text{ V}$ up to 1 V DC including resistance measurement up to 10 M

.03 Resistance bridges

With least uncertainties of measurement of 0.002% or 3 (whichever is the greater) up to 100
 0.005% from 100 to 10 k

.04 Indicators, recorders and controllers

With least uncertainties of measurement of 0.5°C or 0.2% of temperature
 $0.005\% + 5 \text{ V}$ for voltage up to 1 V DC

1.84 Testing of controlled enclosures

.01 Ovens and Furnaces

With least uncertainties of measurement of 0.5°C from -80 to 600°C
 4°C from 600 to 1100°C
by the methods of AS 2853 and similar test procedures

.03 Autoclaves and sterilising ovens

Measurement of temperature and time characteristics
with least uncertainties of measurement of 0.5°C from ambient to 300°C

.04 Industrial freezers

With least uncertainties of measurement of 0.5°C from -80 to 0°C

3.07 Power supplies and stabilisers

.01 Power supplies