



**National Association of Testing Authorities, Australia**  
**SCOPE OF ACCREDITATION**

**Abstec Calibrations Australia Pty Ltd**  
**ABSTEC CALIBRATIONS AUSTRALIA PTY LTD**  
| Accreditation Number: 11087 | Site Number: 11080 |

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**Availability:** Services available to external clients

Note: Not all of the columns of the scope of accreditation displayed include data.

The only data displayed is that deemed relevant and necessary for the clear description of the activities and services covered by the scope of accreditation.

Grey text appearing in a SoA is additional freetext providing further refinement or information on the data in the preceding line entry.

**ISO/IEC 17025 (2017)**  
**Calibration**

SERVICE	PRODUCT	DETERMINANT	TECHNIQUE	PROCEDURE	LIMITATION/RANGE
DC and low frequency electrical metrology - Electrical instrument calibrators	Instrument calibrators	AC current; DC current;	Direct measurement against a reference standard		

**CAPABILITY**

With Calibration and Measurement Capability of -

D.C.current

0.03% from 10 µA to 15 A

0.25% from 15 A to 20 A

0.5% from 20 A to 200 A

1% up to 1 000 A using multi turn coil

A.C. current

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

0.15% from 15 µA 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 Hz to 400 Hz

		AC voltage; DC voltage;	Direct measurement against a reference standard		
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**CAPABILITY**

With Calibration and Measurement Capability of -



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D.C. voltage  
 5  $\mu\text{V/V} + 2 \mu\text{V}$  up to 2 V  
 6  $\mu\text{V/V} + 2 \mu\text{V}$  from 2 V to 20 V  
 11  $\mu\text{V/V} + 2 \mu\text{V}$  from 20 V to 1000 V

A.C.voltage  
 0.02% + 10  $\mu\text{V}$  from 1 mV to 200 mV and 10 Hz to 10 kHz  
 0.04% + 15  $\mu\text{V}$  from 1 mV to 200 mV and 10 kHz to 30 kHz  
 0.1% + 25  $\mu\text{V}$  from 1 mV to 200 mV and 30 kHz to 100 kHz  
 0.02% + 25  $\mu\text{V}$  from 200 mV to 2 V and 10 Hz to 100 Hz  
 0.015% + 25  $\mu\text{V}$  from 200 mV to 2 V and 100 Hz to 2 kHz  
 0.017% + 25  $\mu\text{V}$  from 200 mV to 2 V and 2 kHz to 10 kHz  
 0.04% + 25  $\mu\text{V}$  from 200 mV to 2 V and 10 kHz to 30 kHz  
 0.08% + 200  $\mu\text{V}$  from 200 mV to 2 V and 30 kHz to 100 kHz  
 0.5% + 2 mV from 200 mV to 2 V and 100 kHz to 1 MHz  
 0.015% + 400  $\mu\text{V}$  from 2 V to 20 V and 10 Hz to 100 Hz  
 0.01% + 400  $\mu\text{V}$  from 2 V to 20 V and 100 Hz to 2 kHz  
 0.03% + 50  $\mu\text{V}$  from 2 V to 20 V and 2 kHz to 10 kHz  
 0.07% from 2 V to 20 V and 10 kHz to 30 kHz  
 0.5% from 2 V to 20 V and 30 kHz to 1 MHz  
 0.015% + 5 mV from 20 V to 200 V and 10 Hz to 100 Hz  
 0.013% + 5 mV from 20 V to 200 V and 100 Hz to 10 kHz  
 0.028% + 5 mV from 20 V to 200 V and 10 kHz to 30 kHz  
 0.075% + 22 mV from 20 V to 200 V and 30 kHz to 100 kHz  
 0.015% + 31 mV from 200 V to 1000 V and 40 Hz to 10 kHz  
 0.03% + 50 mV from 200 V to 1000 V and 10 kHz to 30 kHz

	Resistance	Direct measurement against a reference standard	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 10  $\mu\Omega/\Omega + 0.5 \mu\Omega$  from 100  $\mu\Omega$  to 1 M $\Omega$   
 50  $\mu\Omega/\Omega$  from 1 M $\Omega$  to 10 M $\Omega$   
 0.1% from 10 M $\Omega$  to 100 M $\Omega$

DC and low frequency electrical metrology - Electrical measurement and test equipment	Data recorders; Galvano meters and null detectors; LCR meters;	Capacitance	Direct measurement against a reference standard	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 1% + 5 pF from 0.5 nF to 1100  $\mu\text{F}$

	Digital multimeters (DMM); Ohm meters;	Resistance	Direct measurement against a reference standard	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 10  $\mu\Omega/\Omega + 0.5 \mu\Omega$  from 100  $\mu\Omega$  to 1 M $\Omega$   
 50  $\mu\Omega/\Omega$  from 1 to 10 M $\Omega$   
 0.1% from 10 to 100 M $\Omega$



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	Residual current circuit breaker testers	AC current; Resistance;	Direct measurement against a reference standard
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 Portable Appliance Testers  
 10  $\mu\Omega/\Omega$  + 0.5  $\mu\Omega$  from 100  $\mu\Omega$  to 1 M $\Omega$   
 50  $\mu\Omega/\Omega$  from 1 to 10 M $\Omega$   
 0.1% from 10 to 100 M $\Omega$   
 Residual Current Circuit Breaker Testers  
 3% + 1 digit for AC current and 2.5% + 1 ms for time

	Ammeters; Digital multimeters (DMM); Power supplies;	AC current; DC current;	Direct measurement against a reference standard
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 D.C. ammeters  
 0.03% from 10  $\mu$ A to 15 A  
 0.25% from 15 A to 20 A  
 0.5% from 20 A to 200 A  
 1% up to 1 000 A using multi turn coil  
 A.C. ammeters  
 Including clamp-on meters  
 0.05% from 15  $\mu$ A to 3 A and 50 Hz to 5 kHz  
 0.15% from 15  $\mu$ 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 Hz to 400 Hz

	Power supplies; Voltmeters;	AC voltage; DC voltage;	Direct measurement against a reference standard
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 D.C. voltmeters  
 5  $\mu$ V/V + 2  $\mu$ V up to 2 V  
 6  $\mu$ V/V + 2  $\mu$ V from 2 V to 20 V  
 11  $\mu$ V/V + 2  $\mu$ V from 20 V to 1000 V  
 A.C. voltmeters  
 0.02% + 10  $\mu$ V from 1 mV to 200 mV and 10 Hz to 10 kHz  
 0.04% + 15  $\mu$ V from 1 mV to 200 mV and 10 kHz to 30 kHz  
 0.1% + 25  $\mu$ V from 1 mV to 200 mV and 30 kHz to 100 kHz  
 0.02% + 25  $\mu$ V from 200 mV to 2 V and 10 Hz to 100 Hz  
 0.015% + 25  $\mu$ V from 200 mV to 2 V and 100 Hz to 2 kHz  
 0.017% + 25  $\mu$ V from 200 mV to 2 V and 2 kHz to 10 kHz  
 0.04% + 25  $\mu$ V from 200 mV to 2 V and 10 kHz to 30 kHz  
 0.08% + 200  $\mu$ V from 200 mV to 2 V and 30 kHz to 100 kHz  
 0.5% + 2 mV from 200 mV to 2 V and 100 kHz to 1 MHz  
 0.015% + 400  $\mu$ V from 2 V to 20 V and 10 Hz to 100 Hz  
 0.01% + 400  $\mu$ V from 2 V to 20 V and 100 Hz to 2 kHz  
 0.03% + 50  $\mu$ V from 2 V to 20 V and 2 kHz to 10 kHz  
 0.07% from 2 V to 20 V and 10 kHz to 30 kHz



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0.5% from 2 V to 20 V and 30 kHz to 1 MHz  
 0.015% + 5 mV from 20 V to 200 V and 10 Hz to 100 Hz  
 0.013% + 5 mV from 20 V to 200 V and 100 Hz to 10 kHz  
 0.028% + 5 mV from 20 V to 200 V and 10 kHz to 30 kHz  
 0.075% + 22 mV from 20 V to 200 V and 30 kHz to 100 kHz  
 0.015% + 31 mV from 200 V to 1000 V and 40 Hz to 10 kHz  
 0.03% + 50 mV from 200 V to 1000 V and 10 kHz to 30 kHz

DC and low frequency electrical metrology - Electrical standards	Current shunts	Current	Direct measurement against a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 DC shunts  
 0.12% up to 20 A  
 AC shunts  
 0.05% from 15  $\mu$ A to 3 A and 50 Hz to 5 kHz  
 0.15% from 15  $\mu$ A to 1.5 A and 5 Hz to 10 kHz  
 0.05% from 3 A 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 Hz to 400 Hz

	Voltage standards - E.M.F. reference devices; Voltage standards - Standard cells;	Voltage	Direct measurement against a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Standard cells  
 5  $\mu$ V  
 Electronic e.m.f. reference devices  
 5  $\mu$ V/V at 1, 1.018 and 10 V

	Conductance boxes; Precision resistors; Resistance boxes;	Resistance	Direct measurement against a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 10  $\mu\Omega/\Omega$  + 0.5  $\mu\Omega$  from 100  $\mu\Omega$  to 1 M $\Omega$   
 50  $\mu\Omega/\Omega$  from 1 to 10 M $\Omega$   
 0.1% from 10 to 100 M $\Omega$

	AC bridges	Voltage	Direct measurement against a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 2.5% from 1000 V to 22 kV at 50 Hz



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Potential dividers; Voltage ratio boxes;

Voltage; Voltage ratio;

Direct measurement against a reference standard

**CAPABILITY**

With Calibration and Measurement Capability of -  
 volt ratio boxes  
 10  $\mu$ V/V up to 100 V  
 50  $\mu$ V/V from 100 V to 1 000 V  
 variable potential dividers  
 5 ppm +  $5 \times 10^{-7}$

DC and low frequency electrical metrology - High-voltage/high-current standards and equipment

High voltage test sets

Voltage

Direct measurement against a reference standard

**CAPABILITY**

With Calibration and Measurement Capability of -  
 2.5% from 1000 V to 25 kV DC  
 2.5% from 1000 V to 22 kV at 50 Hz

Dimensional metrology - Engineering equipment and precision instruments

Micrometer setting gauges

Length measurements

Comparison with a reference standard

Including compliance with BS 870

From 25 mm to 1000 mm

**CAPABILITY**

With Calibration and Measurement Capability of -  
 1.3  $\mu$ m from 25 mm to 100 mm  
 2.9  $\mu$ m from 100 mm to 300 mm  
 4.5  $\mu$ m from 300 mm to 500 mm  
 5.9  $\mu$ m from 500 mm to 750 mm  
 7.6  $\mu$ m from 750 mm to 1000 mm

Depth and height micrometers; External micrometers; Internal micrometers; Micrometer heads;

Length measurements

Comparison with a reference standard

Micrometer heads  
 Including compliance with AS 2328  
 External micrometers  
 Including compliance with AS 2102 and BS 870  
 Internal micrometers  
 Including compliance with AS 2101 and BS 959  
 Depth micrometers  
 Including compliance with BS 6468 and JIS B7544

**CAPABILITY**

With Calibration and Measurement Capability of -  
 Micrometer heads



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0.4  $\mu\text{m}$  up to 100 mm  
 External micrometers  
 (1.3 + 0.005 L)  $\mu\text{m}$  where L is the length in mm up to 1 000 mm  
 Internal micrometers  
 2.5  $\mu\text{m}$  from 5 mm to 300 mm  
 4.6  $\mu\text{m}$  from 300 to 600 mm  
 8.7  $\mu\text{m}$  from 600 to 1000 mm  
 Depth micrometers  
 3.2  $\mu\text{m}$  form 25 mm to 300 mm

	Bore gauges; Dial gauges; Thickness gauges;	Length measurements	To be determined	Dial gauges Including compliance with AS 2103 and BS 907	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Dial gauges  
 (1.5 + 0.01L)  $\mu\text{m}$  where L is the length in mm from 1 mm to 50 mm  
 Thickness gauges  
 0.005 mm up to 25 mm  
 0.007 mm above 25 mm up to 50 mm  
 Bore gauges  
 4.6  $\mu\text{m}$  from 2 mm to 110 mm

	Centrifuges	Rotational speed	Direct measurement	By in-house method - Test Procedures Manual 5 Section 2.21	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 0.1% or 2 rpm (whichever is greater) from 500 rpm to 50,000 rpm

	Electronic calipers; Vernier calipers;	Length measurements	Comparison with a reference standard	Including compliance with JIS B 7507	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Electronic and vernier callipers  
 (8.7 + 0.06 L)  $\mu\text{m}$  where L is the length in m up to 1 000 mm  
 Digital calliper gauges (10 $\mu\text{m}$  reading)  
 (10 + 0.02 L)  $\mu\text{m}$  where L is the length in mm up to 1 000 mm

	Dial gauges	Length measurements	Comparison with a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 0.4  $\mu\text{m}$  from 0.01 mm to 25 mm  
 0.5  $\mu\text{m}$  from 25 mm to 50 mm

	Straight edges	Length measurements	Direct measurement against a reference standard	Including compliance with AS 1003 and JIS B7514	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 2.2  $\mu\text{m}$  from 250 mm to 500 mm



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2.6  $\mu\text{m}$  from 500 mm to 1000 mm  
 4.4  $\mu\text{m}$  from 1000 mm to 1500 mm

Extensometers	Length measurements	Comparison with a reference standard	Including compliance with AS 1545
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**CAPABILITY**  
 (1 + 0.5 L)  $\mu\text{m}$  where L is the extension in mm up to 200 mm

Vernier height and depth gauges	Length measurements	Comparison with a reference standard	Including compliance with BS 1643, JIS B7517 and JIS B7518
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 4  $\mu\text{m}$  from 100 mm to 600 mm

Bevel protractors	Angle (arc)	Comparison with a reference standard	Protractors Including compliance with AS B139 Precision spirit levels For compliance with AS 2054
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 4 minutes of arc for Bevel Protractors from 150 mm to 300 mm:  
 0.03 degrees for Digital Protractors from 150 mm to 300 mm  
 3 seconds of arc for Precision spirit levels Type 1, 10 seconds of arc sensitivity

Feeler gauges	Length measurements	Comparison with a reference standard	Including compliance with AS 1655
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 2  $\mu\text{m}$  from 0.05 mm to 1 mm

Steel rulers and measuring tapes	Length measurements	Direct measurement against a reference standard	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Steel rules  
 0.04 mm from 1 mm to 1 m  
 0.07 mm above 1 m to 2 m  
 Retractable steel pocket rules  
 0.5 mm from 1 mm to 16 m  
 Tapes  
 0.2 mm from 1 mm to 8 m;  
 0.6 mm above 8 m to 16 m;  
 1 mm above 16 m to 24 m;  
 2 mm above 24 m to 32 m

Squares	Length measurements	Comparison with a reference standard	Including compliance with BS 939 and JIS B7526
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### CAPABILITY

With Calibration and Measurement Capability of -  
 2.6 µm from 75 mm to 200 mm  
 3.1 µm from 200 mm to 400 mm  
 3.9 µm from 400 mm to 700 mm

Dimensional metrology - Jigs, fixtures, cutting tools, machine tools, gears, splines and serrations	Components and QC standards; Jigs and fixtures;	Angle; Form; Length measurements;	Direct measurement		
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### CAPABILITY

Types requiring measurements similar to plain plug gauges, plain ring gauges, plain gap gauges, parallel screw ring gauges, taper screw ring gauges and taper screw plug gauges, including angle, form and linear measurements  
 With Calibration and Measurement Capability of -  
 Linear measurements  
 0.2 µm from 0.01 mm to 100 mm  
 0.5 µm to 1.2 µm from 100 mm to 1000 mm  
 30 µm from 1000 mm to 1500 mm

Dimensional metrology - Length and angle standards	Dial gauge calibrators; Gauge blocks and accessories;	Length measurements	Comparison with a reference standard	Including compliance with AS 1457, grade 2	
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### CAPABILITY

With Calibration and Measurement Capability of -  
 Gauge blocks and accessories  
 0.10 µm from 0.5 mm to 10 mm  
 0.12 µm from 10 mm to 25 mm  
 0.15 µm from 25 mm to 50 mm  
 0.18 µm from 50 mm to 75 mm  
 0.21 µm from 75 mm to 100 mm  
 Dial gauge calibrators  
 0.4 µm from 0.01 mm to 25 mm

Dimensional metrology - Limit gauges and reference standards	Parallel screw plug gauges; Parallel screw ring gauges; Taper screw plug gauges; Taper screw ring gauges;	Major diameter and simple pitch diameter; Minor diameter and simple pitch diameter; Simple pitch diameter only;	Comparison with a reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
 Parallel screw plug gauges  
 4.0 µm from 2 mm to 150 mm  
 Parallel screw ring gauges, taper screw plug gauge, taper screw ring gauges  
 4.7 µm from 2 mm to 150 mm

	Plain gap gauges; Plain plug gauges; Plain ring gauges;	Length measurements	Comparison with a reference standard	Including compliance with BS 969 and AS 1997 for plain plug gauges and plain ring gauges	
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**CAPABILITY**

With Calibration and Measurement Capability of -

Plain plug gauges

1.2 µm from 1 mm to 100 mm

2.1 µm from 100 mm to 200 mm

Plain ring gauges

1.2 µm from 5 mm to 50 mm

2.0 µm from 50 mm to 200 mm

Plain gap gauges

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

Dimensional metrology - Surface topography	Roundness standards	Roundness	Comparison with a reference standard by differential measurement	
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**CAPABILITY**

With Calibration and Measurement Capability of -

0.28 µm from 2 mm to 110 mm

Force metrology - Force measuring and testing equipment including on site calibrations	Tension and universal machines in tension	Force in tension	Comparison measurement with reference load cell	Calibration to Class AA of AS 2193 ISO 7500-1 ASTM E4
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**CAPABILITY**

Including on site calibrations

With Calibration and Measurement Capability of -

0.1% for Class AA from 0.02 N to 500 kN.

	Elastic force measuring devices; Load cells;	Force in compression; Force in tension;	Comparison measurement with reference load cell	Tension Calibration to the following classes of AS 2193 - Class AA from 0.02 N to 500 kN  Compression Calibration to the following classes of AS 2193 Class AA from 0.02 N up to 2 MN Class A from 0.02 N up to 2 MN
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**CAPABILITY**

With Calibration and Measurement Capability of -

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

Tension and universal machines in tension

0.1% for Class AA from 0.02 N to 500 kN

Compression and universal machines in compression

0.1% for Class AA and Class A from 0.02 N to 2 MN

Force metrology - Force measuring and	Compression and universal machines in	Force in compression	Comparison measurement with reference	AS 2193 ISO 7500-1 ASTM E4
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testing equipment	compression		load cell		
including on site calibrations					
<b>CAPABILITY</b> Including on site calibrations With Calibration and Measurement Capability of - 0.1% for Class AA and Class A from 0.02 N up to 2 MN;					
Force metrology - Force standards	Force standards and load cells used as force standards	Force in compression; Force in tension;	Comparison measurement with reference load cell	AS 2193 ASTM E74 ISO 376	
<b>CAPABILITY</b> With Calibration and Measurement Capability of - 0.006% from 0.5 N to 20 kN					
Force metrology - Hardness standards and equipment	Rockwell hardness machines; Rockwell superficial hardness machines;	Rockwell hardness	Comparison with a reference standard	Including compliance with AS 1815, ASTM E18 and ISO 6508 except depth measuring devices	
<b>CAPABILITY</b> Direct and indirect calibration with Calibration and Measurement Capability of - 0.4 to 1.0 Rockwell units in ranges as defined in AS 1815, ASTM E18 and ISO 6508 0.1% of applied load for verification of test force 0.4 seconds for verification of test cycle					
	Brinell hardness machines; Indenters; Portable Brinell measuring microscopes;	Brinell hardness	Comparison with a reference standard	Including compliance with AS 1816, ASTM E10, ASTM E110 and ISO 6506	
<b>CAPABILITY</b> with Calibration and Measurement Capability of - 1.1% to 1.5% Brinell units in ranges as defined in AS 1816, ASTM E10, ASTM E110 and ISO 6506 0.1% of applied load for verification of test force 0.003 mm for verification of indentation length measuring devices					
	Izod impact machines	Izod impact	Comparison with a reference standard	Including compliance with AS 1544, ISO 148-1 and ASTM E23 except striker dimensions	
<b>CAPABILITY</b> With Calibration and Measurement Capability of - 1.4 J from 5 J to 150 J					
	Rubber hardness meters (durometers)	Rubber hardness	Comparison with a reference standard	including compliance with AS 1683.15.2 and ASTM D2240	



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**CAPABILITY**

with Calibration and Measurement Capability of -  
0.2 durometer units from 0 durometer units to 100 durometer units

Charpy impact machines

Charpy impact

Comparison with a reference standard

Including compliance with AS 1544, ISO 148-1 and ASTM E23 (except striker dimensions)

**CAPABILITY**

With Calibration and Measurement Capability of -  
1.4 J from 5 J to 400 J

Vickers hardness machines;  
Vickers low-load hardness machines;  
Vickers micro-hardness machines;

Vickers hardness

Comparison with a reference standard

Vickers hardness machines from 9.8 N to 1176 N  
Vickers low-load hardness machines (HV 0.2 to HV 5)  
Vickers micro-hardness machines (less than HV 0.2)

**CAPABILITY**

Direct and indirect calibration  
with Calibration and Measurement Capability of -  
1.1% to 3% Vickers units as defined in AS 1817, ASTM E92, ASTM 384 and ISO 6507  
0.1% of applied load for verification of test force  
0.4 seconds for verification of test cycle  
0.0005 mm for verification of indentation length measuring devices

Mass - Determination of mass and calibration of weighing devices

Hopper weighing systems;  
Industrial weighing devices;  
Laboratory weighing devices;  
Precision laboratory balances;

Mass

Gravimetric measurement against reference mass

Class 3 and 4 instruments including compliance with NMI NITP 6.1-6.4 National Instrument Test Procedures

Precision laboratory balances from 1 mg to 1 kg;  
Industrial balances up to 40 kg;  
Industrial weighing appliances and Hopper Weighing Systems up to 25 t

including on site calibrations

**CAPABILITY**

Including on site calibrations  
With Calibration and Measurement Capability of -  
Precision laboratory balances  
2 in 10<sup>5</sup> or 10 µg (whichever is greater) from 1 mg to 1 g;  
1.5 in 10<sup>6</sup> or 20 µg (whichever is greater) above 1 g and up to 1 kg;  
Industrial balances  
10 mg up to 5 kg;  
5 in 10<sup>6</sup> or 80 mg (whichever is greater) above 5 and up to 40 kg;  
Industrial weighing appliances and Hopper Weighing Systems  
1 in 10<sup>4</sup> up to 25 t



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	Mass standards	Mass	Gravimetric measurement against reference mass		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 20 µg from 1 mg to 2 g;  
 30 µg from 2 g to 10 g;  
 50 µg above 10 g to 50 g;  
 70 µg above 50 g to 100 g;  
 0.2 mg above 100 g to 200 g;  
 4.5 mg above 200 g to 2 kg  
 5 mg above 2 to 5 kg  
 20 mg above 5 to 10 kg  
 0.2 g above 10 to 20 kg

Pressure metrology - Pressure and vacuum measuring equipment	Barometers	Gauge pressure	Comparison with reference instrument		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 8 Pa from 70 kPa to 120 kPa

	Digital pressure gauges; Manometers; Mechanical pressure gauges; Pressure gauges; Pressure recorders; Pressure transducers; Vacuum gauges;	Absolute pressure; Gauge pressure;	By pressure calibrator; Comparison with dead weight tester; Comparison with reference instrument;	AS 1349 MSA Test Method 1 MSA Test Method 2	
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Absolute Pressure calibrations of Pneumatic devices  
 8 Pa from 0.01 kPa to 120 kPa  
 14 Pa above 120 kPa to 240 kPa  
 0.010% of reading above 240 kPa to 3700 kPa  
 0.0175% of reading above 3700 kPa to 7100 kPa  
 Absolute Pressure calibrations of Hydraulic devices  
 0.01% of reading or 0.08 kPa (whichever is greater) from 600 kPa to 6100 kPa  
 0.01% of reading or 1.3 kPa (whichever is greater) above 6100 kPa to 120.1 MPa  
 0.25% of reading above 120.1 MPa to 200.1 MPa  
 Calibration of Pneumatic devices  
 0.01% of reading or 0.8 Pa (whichever is greater) from -100 kPa to -1.5 kPa  
 1 Pa above -1.5 kPa to -0.001 kPa  
 1 Pa from 0.001 kPa to 1.5 kPa  
 0.01% of reading or 0.8 Pa (whichever is greater) above 1.5 kPa to 100 kPa  
 0.01% of reading above 100 kPa to 700 kPa  
 0.01% of reading above 700 kPa to 3600 kPa  
 0.0175% of reading above 3600 kPa to 7000 kPa  
 Calibration of Hydraulic devices  
 0.01% of reading or 0.08 kPa (whichever is greater) from 500 kPa to 6000 kPa



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0.01% of reading or 1.3 kPa (whichever is greater) above 6000 kPa to 120 MPa  
 0.25% of reading above 120 MPa to 200 MPa

Speed and velocity - Speed measuring devices	Vehicle speed dynamometers	Distance; Speed;	By time and length measurement		
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**CAPABILITY**  
 Calibration of vehicle speed and distance measuring unit  
 With Calibration and Measurement Capability of -  
 0.34 km/h from 20 km/h to 180 km/h  
 1 m over a distance of 1 km

Temperature metrology - Ancillary temperature measuring equipment	Resistance bridges	Resistance to temperature conversion	Direct measurement by electrical input		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 0.002% or 3  $\mu\Omega$  (whichever is the greater) up to 100  $\Omega$   
 0.005% from 100  $\Omega$  to 10 k $\Omega$

	Multi-channel thermocouple data recorders	Volt to temperature conversion	Direct measurement by electrical input		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 Indicators, recorders and controllers  
 0.5°C or 0.2% from -200°C to 1800°C

	Digital voltmeters (DVM) and digital multimeters (DMM)	Volt to temperature conversion	Direct measurement by electrical input		
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**CAPABILITY**  
 With Calibration and Measurement Capability of -  
 DVM and DMM  
 0.005% + 5 $\mu$  V up to 1 V DC  
 Indicators, recorders and controllers  
 0.005% + 5 $\mu$ V for voltage up to 1 V DC

Temperature metrology - Humidity measuring equipment	Hygrometers; Relative humidity sensors;	Relative humidity (RH)	Comparison with a reference standard		
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**CAPABILITY**  
 With Calibration and Measurement capability of -  
 2.0% RH from 10% RH to 90% RH at an ambient temperature of 21 °C to 25 °C for calibration of humidity measuring devices  
 3.0% RH from 10% RH to 90% RH at an ambient temperature of 21 °C to 25 °C for measurement of relative humidity

Temperature metrology - Non-contact temperature measuring equipment	Radiation pyrometers	Temperature	Comparison with a reference standard		
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# National Association of Testing Authorities, Australia

## SCOPE OF ACCREDITATION

### CAPABILITY

With Calibration and Measurement Capability of -  
3.0 °C from -20 °C to 500 °C

Temperature metrology - Temperature measuring equipment	Liquid in glass (LIG) thermometers	Temperature	Measurement against reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
0.05°C at 0°C  
0.1°C from -77°C to -30°C  
0.05°C above -30°C to 25°C

	Base metal thermocouples	Temperature	Measurement against reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
0.2 °C from -90 °C to -30 °C  
0.25 °C from -30 °C to 100 °C  
0.55 °C from 100 °C to 250 °C  
2 °C from 250 °C to 960 °C  
3 °C from 960 °C to 1300 °C

	Surface probes	Temperature	Measurement against reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
3.0 °C from 20 °C to 400 °C

	Vapour pressure thermometers	Temperature	Measurement against reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
0.5 °C or 1% of range (whichever is the greater) from -90 °C to 300 °C

	Bimetallic systems; Filled metal systems;	Temperature	Measurement against reference standard		
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### CAPABILITY

With Calibration and Measurement Capability of -  
Filled metal systems  
0.5 °C or  $\pm 1\%$  of range (whichever is the greater) from -90 °C to 300 °C  
Bimetallic systems  
0.5 °C or 1% of span (whichever is the greater) from -90 °C to 300 °C

	Digital temperature measuring systems	Temperature	Measurement against reference standard		
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# National Association of Testing Authorities, Australia

## SCOPE OF ACCREDITATION

**CAPABILITY**

With Calibration and Measurement Capability of -  
 0.05 °C at 0 °C  
 0.1 °C from -90 °C to -30 °C  
 0.05 °C from -30 °C to 250 °C  
 0.3 °C from 250 °C to 400 °C  
 0.4 °C from 400 °C to 700 °C  
 0.6 °C from 700 °C to 960 °C  
 3 °C from 960 °C to 1100 °C  
 4 °C from 1100 °C to 1300 °C

	Semi-conductor systems	Temperature	Measurement against reference standard		
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 1 °C from -90 °C to 150 °C

	Metallic resistance thermometers	Temperature	Measurement against reference standard		
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 0.05 °C at 0 °C  
 0.1 °C from -90 °C to -30 °C  
 0.05 °C from -30 °C to 250 °C  
 0.25 °C from 250 °C to 450 °C  
 0.3 °C from 450 °C to 600 °C

Temperature metrology - Temperature standards and reference equipment	Dry block calibrators	Temperature	Direct measurement using a reference standard		
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**CAPABILITY**

With Calibration and Measurement capability of -  
 0.1 °C from -90 °C to 250 °C  
 0.2 °C from 250 °C to 960 °C  
 4 °C from 960 °C to 1300 °C

Temperature metrology - Verification of controlled enclosures	Baths	Temperature; Temporal uniformity;	Direct temperature measurement		
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**CAPABILITY**

Including on site calibrations  
 With Calibration and Measurement Capability of -  
 0.05 °C from -90 °C to 400 °C  
 0.2 °C from 400 °C to 500 °C

Temperature metrology - Verification of controlled enclosures	Autoclaves and sterilising ovens; Furnaces; Ovens;	Spatial uniformity; Temperature; Temporal uniformity;	Direct temperature measurement	Ovens and furnaces By the method of - AS 2853	
including on site calibrations					



# National Association of Testing Authorities, Australia

## SCOPE OF ACCREDITATION

**CAPABILITY**

Including on site calibrations  
 With Calibration and Measurement Capability of -  
 Ovens and furnaces  
 0.5 °C from -30 °C to 600 °C  
 4 °C from 600 °C to 1100 °C  
 Autoclaves and sterilising ovens  
 0.5 °C from ambient to 300 °C

Freezers	Spatial uniformity; Temperature;	Direct temperature measurement
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**CAPABILITY**

Including on site calibrations  
 With Calibration and Measurement Capability of -  
 0.5 °C from -90 °C to 0 °C

Time and frequency metrology - Frequency and time standards	Frequency standards	Frequency	Measurement against reference standard
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**CAPABILITY**

With Calibration and Measurement capability of -  
 1 part in 10<sup>7</sup> from 5 Hz to 100 MHz

Time and frequency metrology - Frequency, time and waveform measuring equipment	Clocks and timers; Counters; Frequency meters;	Frequency; Time interval;	Measurement against reference standard
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 Frequency meters  
 1 in 10<sup>6</sup> from 1 Hz to 10 Hz  
 1 in 10<sup>7</sup> from 10 Hz to 100 MHz  
 Counters  
 1 part in 10<sup>7</sup> from 5 Hz to 100 MHz  
 Clocks and watches  
 0.05 seconds from 1 minute to 24 hours

Stroboscopes; Tachometers;	Rotational speed	Comparison with a reference standard
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**CAPABILITY**

With Calibration and Measurement Capability of -  
 Stroboscopes  
 2 rpm from 20 rpm to 50 000 rpm  
 10 rpm from 50 000 rpm to 240 000 rpm  
 Tachometers  
 1 rpm from 20 rpm to 10 000 rpm  
 2 rpm from 10 000 rpm to 240 000 rpm

Torque - Torque measuring and testing equipment	Torque multiplying gearboxes; Torque	Torque	Comparison with a reference standard	ASME B107.300-210
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# National Association of Testing Authorities, Australia

## SCOPE OF ACCREDITATION

	transducers; Torque wrenches;				
including on site calibrations					

**CAPABILITY**

With Calibration and Measurement capability of -

Torque wrenches

0.5% from 0.1 Nm to 1,500 Nm

Torque transducers 0.2% from 0.1 Nm to 5,500 Nm

0.5% above 5,500 Nm to 50,000 Nm

On site calibration at Keswick facility:

Torque multiplying gearboxes including hydraulic, pneumatic and electric torque wrenches

1.0% from 50 to 50,000 Nm

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----- END OF SCOPE -----