



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

**Appointment as a Verifying Authority
for
Reference Standards of Measurement and Physical Quantities of
Artefacts**

In accordance with Regulation 73 of *National Measurement Regulations 1999* (Cth), in force under the *National Measurement Act 1960* (Cth), the Chief Metrologist hereby appoints:

**Keysight Technologies Australia Pty Ltd
(ABN 25 167 128 878)**

Operating at:
**745 Springvale Road
Mulgrave VIC 3170**

to be a Verifying Authority for the verification of reference standards of measurement under regulation 13 and the verification of physical quantity of artefacts under Regulation 34C of the *National Measurement Regulations 1999* (Cth) for the physical quantity of:

Length, Mass, Volume, Density, Flow, Temperature, Frequency

This appointment is for the period from 22 December 2023 to 21 December 2026 and is limited to the range specified in the attached schedule, and the use of procedures approved by the Chief Metrologist.

Dated this Twenty First day of December 2023

Signed

James Cantrill
For Dr Richard Bruce Warrington
Chief Metrologist
National Measurement Institute

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Schedule to Appointment as a Verifying Authority for Reference Standards of Measurement and Artefacts

Keysight Technologies Australia Pty Ltd
(ABN 25 167 128 878)

Operating at:
745 Springvale Road
Mulgrave VIC 3170

Physical Quantity	Range of Standard(s) and Artefact(s)	Least Uncertainty
Length		
Measuring tapes	up to 15 m	0.40 mm
	above 15 m up to 30 m	0.65 mm
	above 30 m up to 50 m	0.32 + 0.018L mm
	above 50 m up to 100 m	0.23 + 0.022L mm (where L is in metres for length)
Mass		
Mass Standards	from 1 mg to 1 g	6 µg
	at 2 g	8 µg
	at 5 g	20 µg
	at 10 g	30 µg
	at 20 g	40 µg
	at 50 g	0.1 mg
	at 100 g	0.2 mg
	at 200 g	0.3 mg
	at 500 g	0.5 mg
	at 1 kg	1.0 mg
	at 2 kg	4 mg
	at 5 kg	7 mg
	at 10 kg	10 mg
	at 20 kg	20 mg
	at 25 kg	500 mg
	from 50 kg to 100 kg	3 g
	at 250 kg	7 g
	at 500 kg	22 g
	at 1 000 kg	50 g

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For Dr Richard Bruce Warrington
Chief Metrologist
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Physical Quantity	Range of Standard(s) and Artefact(s)	Least Uncertainty
Determination of mass	up to 25 t	5 in 10 ⁴
Volume		
Volumetric glassware	at 200 µL at 2 mL at 20 mL at 200 mL at 500 mL	0.3 µL 1.1 µL 6 µL 22 µL 97 µL
Industrial volumetric proving measures	up to 2 000 L (using volumetric methods) 10 000 L (using gravimetric methods)	0.02% 0.008%
Standard measures	up to 500 L (volume standard) up to 25 L (inspection standards)	0.01% 0.02%
Density		
Density of liquids	from 995 kg/m ³ to 1000 kg/m ³	0.06 kg/m ³
Flow rate		
Liquid (water) meters - including on-site calibrations	from 0.2 L/min up to 0.8 L/min above 0.8 L/min to 1 L/min above 1 L/min to 20 L/min above 20 L/min to 400 L/min	3.5% of reading 0.75% of reading 0.4% of reading 0.07% of reading (min. test volume of 400 mL)
Temperature		
Base metal thermocouples	from -55 °C to 180 °C	0.1 °C
Metallic resistance thermometers	from -55 °C to 300 °C	0.05 °C
Surface probes	from 0 °C to 20 °C above 20 °C to 300 °C	0.7 °C 1.2 °C

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Physical Quantity	Range of Standard(s) and Artefact(s)	Least Uncertainty
Liquid-in-glass thermometers	from -55 °C to 0 °C	0.1 °C
	at 0 °C	0.01 °C
	above 0 °C to 180 °C	0.05 °C
	from 180 °C to 300 °C	0.2 °C
Vapour pressure thermometers	from -55 °C to 20 °C	0.2 °C
	above 20 °C to 180 °C	1 °C
Filled metal systems	from -55 °C to 20 °C	0.2 °C
	above 20 °C to 180 °C	1 °C
Bimetallic systems	from -55 °C to 20 °C	0.2 °C
	above 20 °C to 180 °C	1 °C
Frequency	from 1 mHz to 12.4 GHz	5 parts in 10 ¹²
	from 12.4 GHz to 46 GHz	2 parts in 10 ¹⁰
	from 46 GHz to 50 GHz	8 parts in 10 ⁸

Signatories

The following persons are the permitted signatories under this appointment:

Name	Physical Quantity	Range
Ian Tovey	Length, Mass, Volume, Flow	as per the scope of this schedule
Gwenda Rowsell	Length, Mass, Volume, Flow, Density	as per the scope of this schedule
Richard Amstutz	Temperature	as per the scope of this schedule
Les Thomaidis	Frequency	as per the scope of this schedule

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Statutory Conditions

This appointment as a verifying authority for reference standards of measurement under regulation 73 of the *National Measurement Regulations 1999* (Cth) is subject to the conditions stated in regulation 77 of the *National Measurement Regulations 1999* (Cth) as amended. At the time of appointment regulation 77 contains the following conditions

- (a) That the authority participate in training, related to the performance of the duties of an authority, required by the Chief Metrologist;
- (b) That the authority report, as required by the Chief Metrologist, about its performance of its duties;
- (c) That the authority, and any responsible agent or employee of the authority, comply with the *National Measurement Act 1960* (Cth) and the *National Measurement Regulations 1999* (Cth) and any condition stated in the instrument of appointment.
- (d) That the authority comply with any determinations applying to the authority under regulation 20 of the *National Measurement Regulations 1999* (Cth).

Additional Conditions

In addition to the statutory conditions of appointment of authorities contained in regulation 77 of the *National Measurement Regulations 1999* (Cth) this appointment is also subject to the following conditions:

- (i) Continuing accreditation against AS ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories* in the form of NATA accreditation No. 99
- (ii) The authority shall not engage a responsible agent or arrange for any standard of measurement to be verified by an agent or anyone under its supervision without obtaining the prior consent of the Chief Metrologist in writing;
- (iii) Discharge of all financial obligations to the National Measurement Institute in respect of this appointment;
- (iv) Compliance with the formatting and/or any other requirements of the Chief Metrologist and/or the National Measurement Institute with respect to certificates of verification of reference standards of measurement;

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- (v) During the term of this appointment each signatory under this appointment must attend a legal metrology seminar conducted by the Policy and Regulatory Services Section of the Legal Metrology Branch of the National Measurement Institute;
- (vi) This appointment revokes and replaces any previous appointments and/or any extensions granted to any previous appointments.

Notes:

James Cantrill
For Dr Richard Bruce Warrington
Chief Metrologist
National Measurement Institute