



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

Appointment as an Approving Authority for Utility Meters

In accordance with Regulation 76 of *National Measurement Regulations 1999* (Cth), in force under the *National Measurement Act 1960* (Cth), the Chief Metrologist hereby appoints

**University of South Australia
(ABN 37 191 313 308)**

Operating at:
**Australian Flow Management Group
Building L, Corner of University Boulevard North and Campus Lane
Mawson Lakes
SA 5095**

as an approving authority for the pattern approval examining of:

Water Meters

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

Dated this Ninth day of August 2023

Signed

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

Schedule to Appointment as an Approving Authority for Utility Meters

University of South Australia
(ABN 37 191 313 308)

Operating at:
Australian Flow Management Group
Building L, Corner of University Boulevard North and Campus Lane
Mawson Lakes
SA 5095

Scope of Appointment

- (i) Water meters with a flowrate range of 0.000833 L/s to 520 L/s.

Classes of water meters which may be tested

- (i) Class 1 and Class 2 as defined in document 'NMI R 49-1 Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements'.
- (ii) Class 2.5 as defined in document 'NMI M 10-1 Meters Intended for the Metering of Water in Full Flowing Pipes. Part 1: Metrological and Technical Requirements'.

Tests

- (i) For Class 1 and Class 2 water meters intended for the metering of cold potable water and hot water as defined in 'NMI R 49-2 Water Meters Intended for the Metering of Cold Potable Water. Part 2: Test methods'.

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Chief Metrologist
National Measurement Institute

External examination

6.4 Examination Procedures

Performance Tests for all Water Meters

- 7.3 Static pressure test
- 7.4 Determination of intrinsic errors (of indication)
- 7.5 Water temperature test
- 7.5a Water temperature test for T30 water meters
- 7.6 Overload water temperature test
- 7.7 Water Pressure Test
- 7.8 Reverse flow test
- 7.9 Pressure loss test
- 7.10 Flow disturbance tests
- 7.11 Durability tests
- 7.12 Magnetic field testing
- 7.13 Test on ancillary devices of a water meter

Performance Tests Related to Influence Factors and Disturbances

- 8.2 Dry heat (non-condensing)
- 8.3 Cold
- 8.4 Damp heat, cyclic (condensing)
- 8.5 Power supply variation
- 8.6 Vibration (random)
- 8.7 Mechanical shock
- 8.8 AC mains voltage dips, short interruptions and voltage variations
- 8.9 Bursts on signal lines
- 8.10 Bursts (transients) on AC and DC mains
- 8.11 Electrostatic discharge
- 8.12 Radiated electromagnetic fields
- 8.16 Static magnetic field
- 8.17 Absence of flow test

- (ii) For Class 2.5 water meters intended for the metering of water in full flowing pipes as defined in 'NMI M 10-2 Meters Intended for the Metering of Water in Full Flowing Pipes. Part 2: Test Methods'.

External examination

5.3 Examination procedures

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

Performance Tests

- 6.2 Static pressure test
- 6.3 Determination of intrinsic errors of indication and the effects of meter orientation.
- 6.4 Absence of flow test
- 6.6 Flow reversal test
- 6.7 Pressure loss test
- 6.8 Flow disturbance tests
- 6.9 Endurance tests
- 6.10 Water quality disturbance test
- 6.12 Installation Tests
- 6.13 Test for cartridge meters and meters with interchangeable inserts
- 6.14 Maintenance tests

Performance Tests for Electronic Meters and Mechanical Meters Fitted with Electronic Devices

- 7.2 Dry heat (non-condensing)
- 7.3 Cold
- 7.4 Damp heat cyclic (condensing)
- 7.5 Power voltage variation
- 7.6 Vibration
- 7.7 Mechanical shock
- 7.8 Short-time power reductions
- 7.9 Bursts
- 7.10 Electrostatic discharge
- 7.11 Electromagnetic susceptibility
- 7.12 Water
- 7.13 Dust

Statutory Conditions

This appointment as an approving authority for utility meters under regulation 76 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;

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- (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.

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. 17135.
- (ii) The authority shall not engage a responsible agent or arrange for any test(s) to be performed 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 the reporting of test results;
- (v) During the term of this appointment all staff with substantive responsibility for performing testing 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.

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