

Australian Standard[®]

Meters for non-urban water supply

**Part 3: Technical requirements for open
channel meters**

STANDARDS
Australia



This Australian Standard® was prepared by Committee CE-024, Measurement of Water Flow in Open Channels and Closed Conduits. It was approved on behalf of the Council of Standards Australia on 9 January 2013.
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The following are represented on Committee CE-024:

- Australian Industry Group
 - Australian Water Association
 - Department of Environment and Resource Management, Qld
 - Institute of Instrumentation, Control and Automation Australia
 - Irrigation Australia
 - National Farmers Federation
 - National Irrigators Council
 - National Measurement Institute
 - University of South Australia
 - Water Services Association of Australia
-

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PREFACE

This Standard was prepared by the Standards Australia Committee CE-024, Measurement of Water Flow in Open Channels and Closed Conduits, to supersede ATS 4747.3—2008, *Meters for non-urban water supply, Part 3: Specification for open channels*.

The objective of the 4747 series of standards is to provide requirements for the installation and commissioning of irrigation and non-urban water meters to meet the requirements of the National Water Initiative Clause 88.

NMI M11-1, *Meters Intended for the Metering of Water in Open Channels and Partially Filled Pipes, Part 1: Metrological and Technical Requirements*, specifies the metrological and technical requirements for pattern approval and verification of water meters to comply with the National Measurement Regulations.

This Standard includes essential requirements that are up to date with current progress in the water meter industry technology.

This document is part of a series of Standards covering the metering of non-urban water supply, as follows:

AS

4747	Meters for non-urban water supply
4747.1	Part 1: Glossary of terms
4747.2	Part 2: Technical requirements for closed conduit meters fully charged
4747.3	Part 3: Technical requirements for open channel meters (this Standard)
4747.5	Part 5: Installation and commissioning of closed conduit meters fully charged
4747.6	Part 6: Installation and commissioning of open channel meters
4747.8	Part 8: In-service compliance for non-urban water meters

The above documents were originally released as Australian Technical Specifications for a period of over two years. Following review and consideration of industry feedback, they have been revised and released as Standards.

Significant changes to the series include the following:

- (a) The method of handling meters that are beyond the limit of what can be practicably pattern-approved has been revised, which applies to AS 4747.2 and AS 4747.3.
- (b) Overlap with the National Measurement Institute (NMI) documents has also been removed, and those documents are to be read in conjunction with the above Standards.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard. An 'informative' appendix is for information and guidance only.

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STANDARDS AUSTRALIA

Australian Standard
Meters for non-urban water supply

Part 3: Technical requirements for open channel meters

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for water meters for use in non-urban applications in open channel and part-filled pipe applications. It primarily applies to metering for irrigation water; however, it is intended that it be used for non-urban water applications other than applications covered by AS 3565.1 or AS 4747.2.

Two types of meters are covered in this Standard, as follows:

- (a) A 'self-contained unit'—a meter that defines its own geometry and is able to be pattern-approved as a complete water meter, calibrated upon assembly and supplied by a single supplier.
- (b) A 'modular metering system'—a device or group of instruments (which may be supplied as a pattern approved metering system) that does not define the installation geometry and requires configuration after installation.

NOTES:

- 1 The requirements for these types of meters to demonstrate compliance with this Standard and hence with the National Framework are set out and illustrated in Section 7.
- 2 Purchasing guidelines are given in Appendix A.

The Standard covers meters that operate under the following conditions:

- (i) Open channels.
- (ii) Working water temperature range of 0.1°C to 30°C. The maximum admissible temperature is 50°C, which is the limiting condition for the meter.
- (iii) Ambient temperatures range of -5°C to 55°C.
- (iv) Ambient humidity range of 0% to 100%, except for remote-indicating devices where the range is 0% to 93%.

NOTE: Meters with undefined or variable profile channel are not covered by this Standard.

1.2 APPLICATION

This Standard is intended to be used to meet the Australian National Water Initiative for metering non-urban water. It shall be read in conjunction with NMI M11-1 and NMI M11-2.

Where applicable, non-urban water meters may be required to be pattern-approved under National Measurement Regulations. Pattern approval requirements principally cover the metrological requirements of NMI M11-1.

Demonstration of compliance with this Standard shall be in accordance with Appendix B.