AS 4747.2—2013

Australian Standard®

Meters for non-urban water supply

Part 2: Technical requirements for closed conduit meters fully charged

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

This Standard was issued in draft form for comment as DR AS 4747.2.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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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 4747.2—2008, *Meters for non-urban water supply*, Part 2: *Specification for closed conduit meters fully charged*.

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.

It should be noted that NMI M 10-1, *Meters Intended for the Metering of Non-urban Water in Full Flowing 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 Regulation.

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

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 (this Standard)
4747.3	Part 3:	Technical requirements for open channel meters
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 the NMI documents are to be read in conjunction with the above Standards.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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.

CONTENTS

Page

STANDARDS AUSTRALIA

Australian Standard
Meters for non-urban water supply

Part 2: Technical requirements for closed conduit meters fully charged

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements for water meters for use in non-urban applications. It primarily covers 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.

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

(a) A 'self-contained unit'—a meter that defines its own geometry, 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 described in Section 4 and illustrated in Figure 4.1.

2 Purchasing guidelines are given in Appendix A.

This Standard applies to meters that are—

(i) self-contained or modular and capable of continuously determining, within the accuracy limits, the volume of water that has flowed through them; and

(ii) continuously updating the volume on a cumulative basis.

NOTE: In this Standard a meter installation is considered to include—

(a) the meter, its indicating device and all ancillary equipment; and

(b) the upstream and downstream pipe or emplacement that may have a material effect on the meter unit.

This Standard applies to meters that operate under the following conditions:

(A) Closed conduit under full flow.

(B) Pressure ranges minimum 0.03 MPa to a value specified by the manufacturer. As a minimum, insertion or clamp-on meters will need to have the same working pressure range as the pipes they are designed to operate in.

(C) 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.

(D) Ambient air temperature range of −5°C to 55°C.

(E) Ambient humidity range of 0% to 100% except for remote indicating devices where the range is 0% to 93%.