AS 2360.8.1—2007
ISO TR 9824:2007
Reconfirmed 2021

Australian Standard®

Hydrometry—Measurement of free surface flow in closed conduits

Part 8.1: Methods

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 5 April 2007.
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The following are represented on Committee CE-024:

- Australian Industry Group
- Australian National Committee on Irrigation and Drainage
- Department of Environment and Water Resources
- Institute of Instrumentation, Control and Automation Australia
- Irrigation Association of Australia
- National Measurement Institute
- Plumbing Products Industry Group
- University of New South Wales
- University of South Australia
- Water Services Association of Australia

This Standard was issued in draft form for comment as DR 07111.

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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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2360.8.1—2007
Hydrometry—Measurement of free surface flow in closed conduits
Part 8.1: Methods

RECONFIRMATION NOTICE

Technical Committee CE-024 has reviewed the content of this publication and, in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 04 January 2021.

The following are represented on Technical Committee CE-024:
Department of Planning, Industry and Environment (NSW)
Australian Bureau of Meteorology
Australian Industry Group
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Australian Hydrographers Association Incorporated
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Part 8.1: Methods

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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.

The objective of this Standard is to specify methods for measuring discharge in large rivers and estuaries by the moving-boat technique.

This Standard is identical to and has been reproduced from, ISO TR 9824:2007, *Hydrometry—Measurement of free surface flow in closed conduits*.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover

(b) In the source text 'ISO TR 9824' should read 'AS 2360.8.1'.

(c) A full point substitutes for a comma when referring to a decimal marker.

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Australian Standard

Hydrometry—Measurement of free surface flow in closed conduits Part 8.1: Methods

1 Scope

This Technical Report provides a synopsis of the methods of flow gauging that can be deployed in closed conduits flowing part full, i.e. with a free open water surface. It provides a brief description of each method with particular reference to other International Standards where appropriate, the attributes and limitations of each technique, possible levels of uncertainty in the flow determinations and specific equipment requirements. The uncertainties quoted herein are expanded uncertainties with a coverage factor of 2 and an approximate confidence level of 95 %.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 772, *Hydrometric determinations — Vocabulary and symbols*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 772 and the following apply.

3.1
free surface flow in closed conduits
flow within closed conduits, under the influence of gravity only, and normally having a free surface

4 Characteristics of a closed conduit system

4.1 Physical structure

Closed conduits can be located below ground (e.g. sewer) or above ground (e.g. culvert). Systems constructed underground usually incorporate a means of access through a suitable sized shaft (manhole) sealed at the surface with a secure, but removable, cover. Access shafts may be provided at frequent intervals along the length of the conduit. It is normal to locate shafts at points of structural change in the system, such as bends, or junctions, or where for some reason, inspection or entry to the system may be required. Access will be subject to strict health and safety conditions and operatives may require special training. Also, access may not be allowed during or following a period of rainfall.