

AS 3778.3.4—1990
ISO 1088: 1985

Australian Standard[®]

**Measurement of water flow in open
channels**

**Part 3: Velocity-area methods
Method 3.4: Collection and
processing of data for
determination of errors in
measurement**

This Australian Standard was prepared by Committee CE/24, Measurement of Water Flow in Open Channels and Closed Conduits. It was approved on behalf of the Council of Standards Australia on 9 April 1990 and published on 10 December 1990.

The following interests are represented on Committee CE/24:

Association of Consulting Engineers of Australia
Australian Water and Wastewater Association
Board of Works, Melbourne
Department of Water Resources, NSW
Engineering and Water Supply Department of South Australia
Forestry Commission, NSW
Institute of Instrumentation and Control
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First published as AS 3778.3.4—1990.

Incorporating
Amdt 1—1991

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 6298 6

PREFACE

This Standard was prepared by the Standards Australia Committee on Measurement of Water Flow in Open Channels and Closed Conduits. It is identical with and has been reproduced from ISO 1088—1985, *Liquidflow measurement in open channels—Velocity-area methods—Collection and processing of data for determination of errors in measurement*.

This Standard is one of a series which deals with methods of measurement of water flow in open channels. The series when complete will consist of the following parts:

Part 1: Vocabulary and symbols

Part 2.1: General—Guidelines for the selection of methods of measurement

Part 2.2: General—Establishment and operation of a gauging station

Part 2.3: General—Determination of the stage-discharge relation (this Standard)

Part 2.4: General—Estimation of uncertainty of a flow-rate measurement

Part 2.5: General—Guidelines for the selection of flow gauging structures

Part 3: Velocity-area methods

Method 3.1: Measurement by current-meters and floats

Method 3.2: Measurement by moving-boat method

Method 3.3: Measurement by slope-area method

Method 3.4: Collection and processing of data for determination of errors in measurement (this Standard)

Method 3.5: Investigation of total error

Method 3.6: Measurement of flow in tidal channels

Method 3.7: Measurement by ultrasonic (acoustic) method

Method 3.8: Electromagnetic method using a full-channel-width coil

Part 4: Measurement structure methods

Method 4.1: Thin-plate weirs

Method 4.2: Rectangular broad-crested weirs

Method 4.3: Round-nose horizontal broad-crested weirs

Method 4.4: V-shaped broad-crested weirs

Method 4.5: Triangular profile weirs

Method 4.6: Flat-V weirs

Method 4.7: Rectangular, trapezoidal and U-shaped flumes

Method 4.8: Trapezoidal profile weirs

Method 4.9: Parshall and Saniiri flumes

Method 4.10: End-depth method for estimation of flow in rectangular channels with a free overfall

Method 4.11: End-depth method for estimation of flow in non-rectangular channels with a free overfall (approximate method)

Part 5: Dilution methods

Method 5.1: Constant-rate injection method for the measurement of steady flow

Method 5.2: Integration method for the measurement of steady flow

Part 6.1: Measuring devices, instruments and equipment—Rotating element current-meters

Part 6.2: Measuring devices, instruments and equipment—Direct depth sounding

Part 6.3: Measuring devices, instruments and equipment—Calibration of rotating element current-meters in straight open tanks

Part 6.4: Measuring devices, instruments and equipment—Echo sounders for water depth measurements

Part 6.5: Measuring devices, instruments and equipment—Water level measuring devices

Part 6.6: Measuring devices, instruments and equipment—Cableway system for stream gauging

Part 6.7: Measuring devices, instruments and equipment—Ultrasonic (acoustic) velocity meters

Part 6.8: Measuring devices, instruments and equipment—Position fixing equipment for hydrometric boats

For the purposes of this Australian Standard, the ISO text should be modified as follows:

(a) Wherever the words 'International Standard' appear referring to this Standard, they should be read as 'Australian Standard'.

(b) Wherever the word 'fluid' appears, it should be read as 'water'.

(c) Substitute a point (.) for a comma (,) as a decimal marker.

(d) The references to other publications should be replaced by references to Australian Standards as follows.

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO		AS	
		3778	Measurement of water flow in open channels
772	Liquid flow measurement in open channels—Vocabulary and symbols	3778.1	Part 1: Vocabulary and symbols
5168	Measurement of fluid flow—Estimation of uncertainty of a flow-rate measurement	3778.2.4	Part 2.4: General estimation of uncertainty of a flow-rate measurement
748	Liquid flow measurement in open channels—Velocity-area methods	3778.3	Part 3: Velocity-area methods
		3778.3.1	Method 3.1: Measurement by current-meters and floats

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