AS 3778.2.2—2001
ISO 1100-1:1996

Australian Standard™

Measurement of water flow in open channels

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

[ISO title: Liquid flow measurement in open channels, Part 2: Determination of the stage-discharge relationship]

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 25 September 2000 and published on 12 March 2001.

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Australian Water and Wastewater Association

Department of Natural Resources, Qld

Institute of Instrumentation and Control Australia

Department of Land and Water Conservation, New South Wales

Department of Public Works and Services, New South Wales

South Australian Water Corporation

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Australian Standard™

Measurement of water flow in open channels

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

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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 Standard is identical to and is reproduced from ISO 1100-1:1996, *Liquid flow measurement in open channels,* Part 2: *Determination of the stage-discharge relationship.*

This Standard is Part 2.3 of AS 3778, *Measurement of water flow in open channels*, which is published in parts as follows:

AS		
3778		Measurement of water flow in open channels
3778.1	Part 1:	Vocabulary and symbols
3778.2	Part 2:	General
3778.2.1	Part 2.1:	Guidelines for the selection of methods of measurement
3778.2.2	Part 2.2:	Establishment and operation of a gauging station (this Standard)
3778.2.3	Part 2.3:	Determination of the stage-discharge relation)
3778.2.4	Part 2.4:	Estimation of uncertainty of a flow-rate measurement
3778.2.5	Part 2.5:	Guidelines for the selection of flow gauging structures
3778.3	Part 3:	Velocity-area method
3778.3.1	Part 3.1:	Measurement by current meters and floats
3778.3.2	Part 3.2:	Measurement by moving boat method
3778.3.3	Part 3.3:	Measurement by slope-area method
3778.3.4	Part 3.4:	Collection and processing of data for determination of errors in measurement
3778.3.5	Part 3.5:	Investigation of total error
3778.3.6	Part 3.6:	Measurement of flow in tidal channels
3778.3.7	Part 3.7:	Measurement by ultrasonic (acoustic) method
3778.3.8	Part 3.8:	Electromagnetic method using a full-channel-width coil
3778.4	Part 4:	Measurement using flow gauging structures
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3778.4.2	Part 4.2:	Rectangular broad-crested weirs
3778.4.3	Part 4.3:	Round-nose horizontal broad-crested weirs`
3778.4.4	Part 4.4:	V-shaped broad-crested weirs
3778.4.5	Part 4.5:	Triangular profile weirs
3778.4.6	Part 4.6:	Flat-V weirs
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3778.4.9	Part 4.9:	Parshall and Saniiri flumes
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3778.4.11	Part 4.11:	End-depth method for estimation of flow in rectangular channels with a free overfall (approximate method)
3778.5	Part 5:	Dilution method
3778.5.1	Part 5.1:	Constant-rate injection method for the measurement of steady flow
3778.5.2	Part 5.2:	Integration method for the measurement of steady flow
3778.6	Part 6:	Measuring devices, instruments and equipment
3778.6.1	Part 6.1:	Rotating element current-meters
3778.6.2	Part 6.2:	Direct depth sounding and suspension equipment
3778.6.3	Part 6.3:	Calibration of rotating element current meters in straight open tanks
3778.6.4	Part 6.4:	Echo sounders for water depth measurements
3778.6.5	Part 6.5:	Water level measuring devices
3778.6.6	Part 6.6:	Cableway system for stream gauging
3778.6.7	Part 6.7:	Ultrasonic (acoustic) velocity meters
3778.6.8	Part 6.8:	Position fixing equipment for hydrometric boats

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References to International Standards should be replaced by references to equivalent Australian Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
1000	SI units and recommendations for the use of their multiples and of certain other units	1000	The international system of units (SI) and its application
31	Quantities, units and symbols	2900	Quantities, units and symbols
		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
1100	Liquid flow measurement in open channels	3778.2.2	Part 2.2: General—Establishment and operation of a gauging station
1100-1	Part 1: Establishment and operation of a gauging station		
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4369	Liquid flow measurement in open channels-The moving-boat method	3778.3.2	Part 3.2: Velocity-area methods — Measurement by moving boat method
1070	Liquid flow measurement in open channels—Slope-area method	3778.3.3	Part 3.3: Velocity-area methods— Measurement by slope-area method
1088	Liquid flow measurement in open channels—Velocity-area methods—Collection of data for determination of errors in measurement	3778.3.4	Part 3.4: Velocity-area methods— Collection and processing of data for determination of errors in measurement
TR 7178	Measurement of liquid in open channels—Investigation of the total error in measurement of flow by velocity-area methods	3778.3.5	Part 3.5: Velocity-area methods— Investigation of total error
2425	Measurement of flow in tidal channels	3778.3.6	Part 3.6: Velocity-area methods — Measurement of flow in tidal channels

NOTES

AUSTRALIAN STANDARD

Measurement of water flow in open channels

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

1 Scope

1.1 This part of ISO 1100 deals with the establishment and operation of a gauging station for the measurement of stage or discharge, or both, of a lake, reservoir, river or artificial open channel.

1.2 Requirements are specified for stage and for stage-discharge stations in natural channels and stations with artificial structures, for direct discharge measurement and for measurement under ice conditions.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1100. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1100 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 31:1992, *Quantities and units,* all parts.

ISO 748:—[1], *Measurement of liquid flow in open channels — Velocity-area methods.*

ISO 772:—[2], *Measurement of liquid flow in open channels — Vocabulary and symbols.*

ISO 1000:1992, *SI units and recommendations for the use of their multiples and of certain other units.*

ISO 1070:1992, *Liquid flow measurement in open channels — Slope-area method.*

ISO 1100-2:1982, *Liquid flow measurement in open channels — Part 2: Determination of the stage-discharge relation.*

ISO 3454:1983, *Liquid flow measurement in open channels — Direct depth sounding and suspension equipment.*

ISO 3846:1989, *Liquid flow measurement in open channels by weirs and flumes — Rectangular broad-crested weirs.*

ISO 3847:1977, *Liquid flow measurement in open channels by weirs and flumes — End-depth method for estimation of flow in rectangular channels with a free overfall.*

ISO 4359:1983, *Liquid flow measurement in open channels — Rectangular, trapezoidal and U-shaped flumes.*

ISO 4360:1984, *Liquid flow measurement in open channels by weirs and flumes — Triangular profile weirs.*

ISO 4369:1979, *Measurement of liquid flow in open channels — Moving-boat method.*

1) To be published. (Revision of ISO 748:1979)

2) To be published. (Revision of ISO 772:1988)