

Australian Standard[®]

**Liquid flow measurement in open
channels**

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



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The following are represented on Committee CE-024:

- Australian Industry Group
 - Department of Natural Resources and Water, Qld
 - Institute of Instrumentation, Control and Automation Australia
 - Irrigation Australia
 - National Measurement Institute
 - NSW Department of Commerce
 - University of New South Wales
 - Water and Wastewater 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 AS 3778.6.6—1992.

The objective of this Standard is to provide general description, functional requirements, specification and guidelines for the design, and for the operation and maintenance of a cableway system used for stream gauging.

This Standard is identical with, and has been reproduced from ISO 4375:2000/Corrected in 2003, *Hydrometric determination—Cableway system for stream gauging*.

This Standard is Part 6.6 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
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
3778.4.1	Part 4.1:	Thin-plate weirs
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
3778.4.7	Part 4.7:	Rectangular, trapezoidal and U-shaped flumes
3778.4.8	Part 4.8:	Trapezoidal profile weirs
3778.4.9	Part 4.9:	Parshall and Saniiri flumes
3778.4.10	Part 4.10:	End-depth method for estimation of flow in rectangular channels with a free overfall
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 (this Standard)
3778.6.7	Part 6.7:	Ultrasonic (acoustic) velocity meters
3778.6.8	Part 6.8:	Position fixing equipment for hydrometric boats
3778.7	Part 7:	Determination of volume of water and water level in lakes and reservoirs

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 4375' should read 'AS 3778.6.6'.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO		AS	
31.3	Quantities and units Part 3: Mechanics	—	
748	Measurement of liquid flow in open channels—Velocity area method	3778.3.1	Part 3.1: Measurement of water flow in open channels—Velocity area methods—Measurement by current meters and floats
772	Hydrometric determinations—Vocabulary and symbols	3778.1	Measurement of water in open flow channels, Part 1: Vocabulary and symbols

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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AUSTRALIAN STANDARD

Liquid flow measurement in open channels

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

1 Scope

This International Standard defines the requirements for equipment, anchorage, supports and accessories for cableway systems for use in stream gauging. Systems which are operated either entirely from the river bank or from a suspended personnel carriage (also called a “cable car”) are discussed. This International Standard does not concern methods for making a discharge measurement which are described in ISO 748.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 31-3:1992, *Quantities and units — Part 3: Mechanics*.

ISO 748:1997, *Measurement of liquid flow in open channels — Velocity-area methods*.

ISO 772:1996, *Hydrometric determinations — Vocabulary and symbols*.

ISO 772:1996 Amd 1¹⁾, *Hydrometric determinations — Vocabulary and symbols*.

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 772, its amendment 1 and ISO 31-3 as well as the following apply.

**3.1
cable**

wire rope of simple or complex structure or wire cord, fixed or moving in a cableway system

1) To be published.