

AS 3778.2.4—2001  
ISO/TR 5168:1998

AS 3778.2.4

Australian Standard™

## **Measurement of water flow in open channels**

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

[ISO title: Measurement of fluid flow—Evaluation of uncertainties]



**S t a n d a r d s** 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 29 September 2000 and published on 12 March 2001.

---

The following interests are represented on Committee CE-024:

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  
Sydney Water Corporation  
University of New South Wales  
University of Adelaide  
University of Technology, Sydney

---

### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Australia web site at [www.standards.com.au](http://www.standards.com.au) and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Australian Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.com.au](mailto:mail@standards.com.au), or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 001.

---

AS 3778.2.4—2001

Australian Standard™

## **Measurement of water flow in open channels**

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

Originated as AS 3778.2.4—1990.  
Second edition 2001.

#### **COPYRIGHT**

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd  
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 3632 7

## PREFACE

This Standard was prepared by the Standards Australia Committee CE-024, Measurement of Water Flow in Open Channels and Closed Conduits.

This Standard is identical to and is reproduced from ISO/TR 5168:1998, *Measurement of fluid flow—Evaluation of uncertainties*.

This Standard is Part 2.4 of AS 3778, *Measurement of water flow in closed conduits*, 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 (this Standard)
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
3778.6.7	Part 6.7:	Ultrasonic (acoustic) velocity meters
3778.6.8	Part 6.8:	Position fixing equipment for hydrometric boats

Under arrangements made between Standards Australia and the international Standards bodies, ISO and IEC, as well as certain other Standards organizations, users of this Australian Standard are advised of the following:

- (a) Copyright is vested in Standards Australia.
- (b) The number of this Standard is not reproduced on each page. Its identity is shown only on the cover and title pages.
- (c) In the source text ‘this International Standard’ should read ‘this Australia Standard’.
- (d) Where the word ‘fluid’ appears, it should be read as ‘water’.
- (e) A full point should be substituted for a comma when referring to a decimal marker.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-