AS 3778.3.1—2001
ISO 748:1997

Australian Standard™

Measurement of water flow in open channels

Part 3.1: Velocity-area methods—Measurement by current-meters and floats

[ISO title: Measurement of liquid flow in open channels—Velocity-area methods]

Standards Australia

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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

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Australian Standard™

Measurement of water flow in open channels

Part 3.1: Velocity-area methods—Measurement by current-meters and floats

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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.

This Standard is identical to and is reproduced from ISO 748:1997, *Measurement of liquid flow in open channels—Velocity-area methods.*

This Standard is Part 3.1 of AS 3778, *Measurement of water flow in open channels,* which is published in parts as follows:

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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
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AUSTRALIAN STANDARD

Measurement of water flow in open channels

Part 3.1:
Velocity-area methods—Measurement by current-meters and floats

1 Scope

This International Standard specifies methods for determining the velocity and cross-sectional area of water flowing in open channels without ice cover, and for computing the discharge therefrom.

It covers methods of employing current-meters and floats to measure the velocities. Although, in most cases, these measurements are intended to determine the stage-discharge relation of a gauging station, this International Standard deals only with single measurements of the discharge; the continuous recording of discharges over a period of time is covered in ISO 1100-1 and ISO 1100-2.

NOTE The methods for determining the velocity and cross-sectional area of water flowing in open channels with ice cover are specified in ISO 9196.

2 Normative reference

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

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

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 772 and the following definition apply.

3.1 unit-width discharge
discharge through a unit width of a section at a given vertical

4 Principle of the methods of measurements

4.1 The principle of these methods consists of measuring velocity and cross-sectional area. A measuring site is chosen conforming to the specified requirements; the width, depending on its magnitude, is measured either by means of steel tape or by some other surveying method, and the depth is measured at a number of points across the width, sufficient to determine the shape and area of the cross-section.

Velocity observations are made at each vertical preferably at the same time as measurement of depth, especially in the case of unstable beds. They are made by any one of the standard methods using current-meters. If unit width discharge is required, it is generally computed from the individual observations.

In the integration method, the mean velocity is obtained directly.