
**Hydrometry — Measurement of liquid
flow in open channels —**

Part 2:

**Determination of the stage-discharge
relationship**

*Hydrométrie — Mesurage du débit des liquides dans les canaux
découverts —*

Partie 2: Détermination de la relation hauteur-débit



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1100-2 was prepared by Technical Committee ISO/TC 113, *Hydrometry*, Subcommittee SC 1, *Velocity area methods*.

This third edition cancels and replaces the second edition (ISO 1100-2:1998). Most of the clauses have been updated and technically revised. Major revisions have been made to Clause 5, including a new figure of a stage-discharge relationship and shift curves. Clause 7 has been revised to be consistent with new standards on uncertainty.

It also incorporates the Technical Corrigendum ISO 1100-2:1998/Cor.1:2000.

ISO 1100 consists of the following parts, under the general title, *Hydrometry — Measurement of liquid flow in open channels*:

- *Part 1: Establishment and operation of a gauging station*
- *Part 2: Determination of the stage-discharge relationship*

Hydrometry — Measurement of liquid flow in open channels —

Part 2:

Determination of the stage-discharge relationship

1 Scope

This part of ISO 1100 specifies methods of determining the stage-discharge relationship for a gauging station. A sufficient number of discharge measurements, complete with corresponding stage measurements, are required to define a stage-discharge relationship to the accuracy required by this part of ISO 1100.

Stable and unstable channels are considered, including brief descriptions of the effects on the stage-discharge relationship of shifting controls, variable backwater and hysteresis. Methods of determining discharge for twin-gauge stations, ultrasonic velocity-measurement stations, electromagnetic velocity-measurement stations and other complex rating curves are not described in detail. These types of rating curve are described separately in other International Standards, Technical Specifications and Technical Reports, which are listed in Clause 2 and the Bibliography.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 748, *Hydrometry — Measurement of liquid flow in open channels using current-meters or floats*

ISO 772, *Hydrometry — Vocabulary and symbols*

ISO 5168, *Measurement of fluid flow — Procedures for the evaluation of uncertainties*

ISO 9123, *Measurement of liquid flow in open channels — Stage-fall-discharge relationships*

ISO 15769, *Hydrometry — Guidelines for the application of acoustic velocity meters using the Doppler and echo correlation methods*

ISO/TS 24154, *Hydrometry — Measuring river velocity and discharge with acoustic Doppler profilers*

3 Symbols

For the purposes of this document, the symbols given in ISO 772 and the following apply:

A cross-sectional area

B cross-sectional width

β power-law exponent (slope on logarithmic plot) of the rating curve