

Methods of

Measurement of liquid flow in open channels —

Part 7: The measurement of liquid level
(stage)

Co-operating organizations

The Instrument Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- British Calibration Service
- British Clock and Watch Manufacturers' Association
- British Electrical and Allied Manufacturers' Association
- British Industrial Measuring and Control Apparatus Manufacturers' Association*
- British Mechanical Engineering Confederation
- British Nautical Instrument Trade Association
- British Railways Board
- British Scientific Instrument Research Association
- British Steel Industry
- Electrical Research Association
- Electricity Council, the Generating Board and the Area Boards in England and Wales
- Electronic Engineering Association
- Engineering Equipment Users' Association
- Gauge and Tool Makers' Association
- Hevac Association
- Institute of Measurement & Control
- Institution of Chemical Engineers
- Institution of Electrical Engineers
- Institution of Heating and Ventilating Engineers
- Institution of Mechanical Engineers
- Institution of Production Engineers
- Ministry of Defence, Air Force Dept.
- Department of the Environment
- National Coal Board
- National Engineering Laboratory (Department of Trade and Industry)*
- Oil Companies Materials Association
- Scientific Instrument Manufacturers' Association*
- Water-tube Boilermakers' Association

The organization marked with an asterisk in the above list, together with the following were directly represented on the committee entrusted with the preparation of this standard:

- Department of Agriculture and Fisheries for Scotland
- Department of the Environment-Hydraulics Research Station
- Institution of Civil Engineers
- Water Resources Board

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Foreword

This Standard makes reference to the following British Standard:

BS 3680, *Methods of measurement of liquid flow in open channels.*

BS 3680-1, *Glossary of terms.*

BS 3680-3, *Velocity area methods.*

BS 3693, *Recommendations for the design of scales and indexes.*

BS 3693-1, *Instruments of bold presentation and for rapid reading.*

This British Standard has been prepared under the authority of the Instrument Industry Standards Committee; it describes the construction and installation of gauges and ancillary equipment used in the measurement of water level (stage) in open channels.

The measurement of stage is the most important of all the measurements made in the course of flow measurement because it is the base to which all other measurements are related. The measurement required is the elevation of the plane of the water surface at the site by reference to a fixed datum e.g. the zero mark of the reference gauge, the crest or invert of the measuring structure or the level corresponding to zero flow.

The reading of stage may be required as a single instantaneous measurement, as a short series of instantaneous measurements or as a continuous or virtually continuous record of the fluctuations of the stage.

Various devices which are described later may be used as auxiliary aids to improve the convenience or the frequency with which the measurements can be made.

This Part of this British Standard continues the series, listed below, concerned with the various techniques used for the measurement of fluid flow in open channels.

- *Part 1: Glossary of terms;*
- *Part 2: Dilution methods¹⁾;*
- *Part 2A: Dilution methods: constant rate injection;*
- *Part 2B: Dilution methods: sudden injection¹⁾;*
- *Part 2C: Dilution methods: radioisotope techniques;*
- *Part 3: Velocity area methods;*
- *Part 4: Weirs and flumes;*
- *Part 4A: Thin plate weirs and venturi flumes;*
- *Part 4B: Long base weirs;*
- *Part 4C: Flumes¹⁾;*
- *Part 5: Slope-area method of estimation;*
- *Part 6: Measurement of flow in tidal channels¹⁾;*
- *Part 7: The measurement of stage;*
- *Part 8: Current meters¹⁾;*
- *Part 8A: Current meters incorporating a rotating element¹⁾;*
- *Part 8B: Current meters: suspension equipment¹⁾;*
- *Part 8C: Current meters: rating procedure¹⁾;*
- *Part 9: Water level instruments;*
- *Part 9A: Pressure-actuated water level instruments: installation and performance.*

¹⁾ In course of preparation.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 11 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

