ISO 3846:2008-02 (E)

Hydrometry - Open channel flow measurement using rectangular broad-crested weirs

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Symbols 1

5 Installation 2
5.1 General 2
5.2 Selection of site 2
5.3 Installation conditions 3

6 General maintenance requirements 4

7 Measurement of head(s) 5
7.1 General 5
7.2 Stilling or float well 5
7.3 Zero setting 5

8 Rectangular broad-crested weirs 6
8.1 Specification for the standard weir 6
8.2 Location of the head gauge section 7
8.3 Provision for modular flow 7

9 Discharge relationships 7
9.1 Modular flow discharge equation 7
9.2 Modular coefficient of discharge 7
9.3 Limitations for operation in the modular flow range 10
9.4 Drowned flow discharge equation 10
9.5 Limitations for operation in the drowned flow range 10

10 Uncertainties in flow measurement 11
10.1 General 11
10.2 Statement of the uncertainty of a flow measurement in a channel 11
10.3 Combining measurement uncertainties 12
10.4 Uncertainty of discharge coefficient u(C) for the broad-crested weir 13
10.5 Uncertainty budget 13
11 Example 13
11.1 General 13
11.2 Characteristics -- Gauging structure 14
11.3 Characteristics -- Gauged head instrumentation 14
11.4 The discharge coefficient 14
11.5 The discharge estimate 14
11.6 Uncertainty statement 15

Annex A (informative) Modular limit 17

Annex B (informative) Gauged head discharge coefficient and total head discharge coefficient 18

Annex C (informative) Introduction to measurement uncertainty 19

Annex D (informative) Sample measurement performance for use in hydrometric worked examples 26

Bibliography 28