

ISO 1070:2018 (E)

Hydrometry — Slope-area method

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Principle of the method of measurement
5	Selection and demarcation of site
5.1	Initial survey of site
5.2	Selection of site
5.3	Demarcation of site
6	Measurement of slope
6.1	High-water marks
6.2	Crest-stage gauges
6.3	Pressure transmitters
6.4	Reference gauge
7	Determination of slope
8	Cross sections of a stream
8.1	Number and location of cross sections
8.2	Measurement of cross-sectional profiles
9	Computation of discharge
9.1	General
9.2	Uniform cross sections
9.2.1	General
9.2.2	Determination of the mean cross-sectional area and mean wetted perimeter of the reach
9.2.3	Determination of hydraulic radius
9.2.4	Determination of the mean velocity in the reach
9.2.4.1	Using Manning's formula
9.2.4.2	Using Chezy's formula
9.2.4.3	Manning and Chezy coefficients
9.2.4.4	Using the Darcy-Weisbach (Colebrook-White) formula
9.3	Non-uniform cross sections (2-cross-section formulation)
9.3.1	General
9.3.2	Computation of conveyance
9.3.3	Evaluation of the friction slope
9.4	Composite cross sections
9.5	Computation of discharge using three or more cross sections
9.6	State of flow
10	Alternative methods to estimate conveyance
10.1	General
10.2	Divided channel method
10.3	Conveyance estimation system

11 Uncertainty in flow measurement

- 11.1 Definition of uncertainty**
- 11.2 Sources of uncertainty for a uniform reach**
 - 11.2.1 General considerations**
 - 11.2.2 Uncertainty of the mean cross-sectional area**
 - 11.2.3 Uncertainty in the calculation of the mean wetted perimeter**
 - 11.2.4 Uncertainties in determination of the friction slope**
 - 11.2.5 Uncertainty due to the choice of the rugosity coefficient**
 - 11.2.6 Overall uncertainty in the measurement of discharge**

Annex A (informative) Approximate value of coefficients n and C for open channels

Annex B (informative) Approximate value of Strickler-coefficients kSt for natural streams

Annex C (informative) US Soil Conservation Service method of estimating Manning's n

Annex D (informative) Conveyance estimation system

- D.1 General**
- D.2 Components of CES**
- D.3 Calculating conveyance in CES**

Page count: 27