

ISO/TS 25377:2007-10 (E)

Hydrometric uncertainty guidance (HUG)

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and abbreviations	2
5	ISO/IEC Guide 98 (GUM) -- Basic definitions and rules	4
5.1	General	4
5.2	The uncertainty of sets of measurements	4
5.3	Random and systematic effects	4
5.4	Uncertainty models -- Probability distributions	5
5.5	Combining uncertainties -- The law of propagation	5
5.6	Expressing results	6
6	Open channel flow -- Velocity area methods	6
6.1	General	6
6.2	Mean velocity, \bar{v}	7
6.3	Velocity-area determination	8
6.4	Stationary determination of velocity	9
6.5	Moving determination of velocity	10
6.6	Velocity-area uncertainties	11
6.7	Integration uncertainties () () [*] ,y zu F u F	15
6.8	Perimeter flow uncertainties, ()pu Q	16
7	Open channel flow -- Critical depth methods	16
7.1	General	16
7.2	Head and geometry determination	17
7.3	Iterative calculation	18
7.4	Evaluating uncertainty	18
8	Dilution methods	18
8.1	General	18
8.2	Continuous feed	19
8.3	Transient mass	20
9	Hydrometric instrumentation	21
9.1	Performance specifications	21
9.2	Validity of uncertainty statements	21
9.3	Manufacturer's performance specifications	22
9.4	Performance guide for hydrometric equipment for use in technical standard examples	23
10	Guide for the drafting of uncertainty clauses in hydrometric standards	24
10.1	General	24
10.2	Equipment, methods and measurement systems	24
Annex A (informative)	Introduction to hydrometric uncertainty	26

Annex B (informative) An introduction to Monte Carlo Simulation (MCS)	43
Annex C (informative) Performance guide for hydrometric equipment for use in technical standard examples	48
Bibliography	51