

ISO 2394:1998-06 (E)

General principles on reliability for structures

Contents		Page
1	Scope	1
2	Definitions	1
3	Symbols	5
4	Requirements and concepts	6
4.1	Fundamental requirements	6
4.2	Reliability differentiation of structures	7
4.3	Structural design	8
4.4	Compliance	9
4.5	Durability and maintenance	10
5	Principles of limit states design	11
5.1	Limit states	11
5.2	Design	12
6	Basic variables	13
6.1	General	13
6.2	Actions	14
6.3	Environmental influences	15
6.4	Properties of materials	16
6.5	Geometrical quantities	16
7	Models	16
7.1	General	16
7.2	Types of models	17
7.3	Model uncertainties	20
7.4	Design based on experimental models	21
8	Principles of probability-based design	21
8.1	General	21
8.2	Systems reliability versus element reliability	22
8.3	Specified degrees of required reliability	23
8.4	Calculation of failure probabilities	23
8.5	Implementation of probability-based design	24
9	Partial factors format	24
9.1	Design conditions and design values	24
9.2	Representative values of actions	26
9.3	Characteristic values of properties of materials including soils	26
9.4	Characteristic values of geometrical quantities	27
9.5	Load cases and load combinations	27
9.6	Action effects and resistances	27
9.7	Verification for fatigue	28
9.8	Calibration	28
10	Assessment of existing structures	28
10.1	Relevant cases	28
10.2	Principles of assessment	28
10.3	Basic variables	29
10.4	Investigation	29

10.5	Assessment in the case of damage	30
	Annex A: Quality management and quality assurance	31
	Annex B: Examples of permanent, variable and accidental actions 35 Annex C: Models for fatigue .	37
	Annex D: Design based on experimental models	40
	Annex E: Principles of reliability-based design	50
	Annex F: Combination of actions and estimation of action values 62 Annex G: Example of a method of combination of actions	71
	Annex H: Index of definitions	73