

E DIN EN ISO 19900:2025-10 (E)

Erscheinungsdatum: 2025-09-12

Oil and gas industries including lower carbon energy - General requirements for offshore structures (ISO/DIS 19900:2025); English version prEN ISO 19900:2025

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and abbreviated terms	8
4.1	Symbols	8
4.2	Abbreviated terms	9
5	Design considerations	9
5.1	Functional and operational requirements	9
5.2	Consequence levels	10
5.3	Robustness	11
5.4	Durability	11
5.5	Sustainability	12
5.6	Quality management	12
6	Basis of structural and geotechnical design	12
6.1	Facility location and orientation	12
6.2	Weights	13
6.3	Geotechnical and geophysical conditions	13
6.4	Environmental conditions	13
6.5	Accidental conditions	14
6.6	Topsides structures, air gap and splash zone	14
6.7	Ancillary systems	14
6.8	Inspectability	15
6.9	Jack-ups	15
6.10	Non-oil & gas facilities	15
7	Development of design situations	16
7.1	Hazardous events	16
7.2	Design situations	16
8	Limit states and structure performance	18
8.1	General	18
8.2	Ultimate limit states	18
8.3	Serviceability limit states	19
8.4	Fatigue limit states	19
8.5	Alternative methods for demonstrating structure performance	19
9	Characterization of actions and resistance	19
9.1	Basic variables	19
9.2	Classifications of actions	20
9.3	Permanent actions	20
9.4	Operational actions	20
9.5	Environmental actions	20
9.6	Accidental actions	21
9.7	Repetitive actions	21
9.8	Actions acting in combination	21
9.8.1	General	21

9.8.2	Principal actions.....	22
9.8.3	Companion actions.....	22
9.8.4	Accompanying actions.....	22
9.9	Structural resistance.....	23
9.9.1	Material properties.....	23
9.9.2	Geometrical properties.....	23
9.9.3	Resistance to repetitive actions.....	23
10	Design approaches.....	23
10.1	Design principles and approaches for offshore structures.....	23
10.2	Semi-probabilistic approach.....	24
10.3	Alternative approaches.....	25
10.4	Risk mitigation.....	26
11	Design values for semi-probabilistic approach.....	27
11.1	Partial factor method for offshore structures.....	27
11.2	Hazardous events.....	27
11.3	Representative values.....	27
11.4	Actions.....	28
11.4.1	Representative values of permanent actions.....	28
11.4.2	Representative values of operational actions.....	28
11.4.3	Representative values of environmental actions.....	28
11.4.4	Representative values of accidental actions.....	29
11.4.5	Partial factors for actions.....	29
11.4.6	Actions acting in combination.....	29
11.4.7	Design values of actions and action effects.....	30
11.5	Resistance.....	30
11.5.1	Representative values for material properties.....	30
11.5.2	Representative values for geometrical properties.....	30
11.5.3	Design value of material variables.....	31
11.5.4	Design value of geometric variables.....	31
11.5.5	Design resistance.....	31
11.5.6	Partial factors for materials and resistance.....	32
11.5.7	Resistance for repetitive actions.....	32
11.6	Verification by the partial factor method.....	32
11.6.1	Verification of ULS.....	32
11.6.2	Verification of SLS.....	33
11.6.3	Verification of FLS.....	33
12	Structural modelling and analysis.....	33
12.1	Structural modelling.....	33
12.1.1	General principles of structural and geotechnical modelling.....	33
12.1.2	Static actions.....	34
12.1.3	Dynamic actions.....	34
12.1.4	Actions inducing fatigue.....	34
12.1.5	Fire and explosion design.....	35
12.2	Structural analysis.....	35
12.2.1	General.....	35
12.2.2	Linear analysis.....	36
12.2.3	Non-linear analysis.....	36
12.3	Design assisted by testing.....	36
13	Integrity management and assessment of existing structures and marine systems.....	37
13.1	General.....	37
13.2	Integrity management of structures and marine systems.....	37
13.3	Assessment of existing structures and marine systems.....	38
13.4	Assessment situations and approaches.....	39
	Annex A (informative) Additional information and guidance.....	40
	Bibliography.....	74