
**Petroleum and natural gas
industries — General requirements
for offshore structures**

*Industries du pétrole et du gaz naturel — Exigences générales
relatives aux structures en mer*

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols and abbreviated terms	8
4.1 Symbols	8
4.2 Abbreviated terms	9
5 Fundamental requirements	9
5.1 General	9
5.2 Structural integrity requirements	10
5.3 Functional requirements	10
5.4 Requirements for specific phases of the life of the structure	11
5.4.1 Planning	11
5.4.2 Construction and deployment	11
5.4.3 Structural integrity management	11
5.4.4 Decommissioning and removal	11
5.5 Requirements for durability and robustness	12
5.5.1 Durability, maintenance and inspection	12
5.5.2 Robustness	12
6 Basis for design/assessment	13
6.1 General	13
6.2 Platform location and orientation	13
6.3 Physical environmental conditions	14
6.4 Geotechnical and geophysical conditions	14
6.4.1 Marine site investigations	14
6.4.2 Seabed instability	15
6.4.3 Seabed disturbance	15
6.5 Specific design/assessment requirements	16
6.5.1 Topsides structures	16
6.5.2 Deck elevation	16
6.5.3 Splash zone	17
6.5.4 Stationkeeping systems	17
6.5.5 Conductor and riser systems	17
6.5.6 Foundations and anchoring	17
6.5.7 Additional operational requirements	18
7 Development of design/assessment situations	18
7.1 Hazards	18
7.2 Hazardous events	18
7.3 Exposure levels	19
7.3.1 General	19
7.3.2 Exposure level L1	20
7.3.3 Exposure level L2	20
7.3.4 Exposure level L3	20
7.4 Design/assessment situations	21
7.4.1 General	21
7.4.2 Operational design/assessment situations	21
7.4.3 Extreme design/assessment situations	22
7.4.4 Abnormal design/assessment situations	22
7.4.5 Accidental design/assessment situations	23
7.4.6 Short duration design/assessment situations	23
7.4.7 Serviceability design/assessment situations	24

8	Limit state verification	24
8.1	General	24
8.2	Basic variables and representative values	25
8.3	Limit states	26
8.3.1	Categories of limit states	26
8.3.2	Ultimate limit states	26
8.3.3	Abnormal/accidental limit states	27
8.3.4	Serviceability limit states	27
8.3.5	Fatigue limit states	27
8.4	Limit state verification procedure	28
9	Actions	28
9.1	Classifications of actions	28
9.2	Permanent actions and their representative values	29
9.3	Operational actions and their representative values	29
9.4	Environmental actions and their representative values	30
9.5	Accidental actions and their representative values	31
9.6	Repetitive actions	31
10	Design values and partial factors	32
10.1	Design values of actions	32
10.2	Actions acting in combination	32
10.2.1	Principal and companion actions for the same action type	32
10.2.2	Principal and accompanying actions for specific design/assessment situations	33
10.3	Design values of resistance	33
10.3.1	General	33
10.3.2	Design values of materials including soils	33
10.3.3	Design values of geometric variables	34
10.3.4	Uncertainties in analysis models	34
10.4	Partial factors for operational and extreme design/assessment situations	34
10.5	Partial factors for abnormal and accidental design/assessment situations	34
10.6	Partial factors for serviceability design/assessment situations	35
10.7	Partial factors for fatigue design/assessment verification	35
10.8	Probabilistic modelling and analysis	35
11	Models and analysis	35
12	Quality management	36
12.1	General	36
12.2	Installation inspection	36
12.3	In-service inspection, maintenance and repair	36
12.4	Records and documentation of design and construction	37
12.4.1	General	37
12.4.2	Calculations	37
12.4.3	Weight and centre of gravity reports	38
12.4.4	Drawings and specifications	38
13	Assessment of existing structures	38
13.1	General	38
13.2	Condition assessment	39
13.2.1	General	39
13.2.2	Service and operating requirements	39
13.2.3	Environmental conditions	39
13.2.4	Testing, inspection, maintenance and repair history	39
13.3	Action assessment	40
13.4	Resistance assessment	40
13.5	Component and system failure consequences	40
13.6	Mitigation	40
Annex A (informative) Additional information and guidance		41
Bibliography		64

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 7, *Offshore structures*.

This third edition cancels and replaces the second edition (ISO 19900:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

- Terms and definitions have been updated;
- Design/assessment situations are described, and the process for limit state design/assessment verification has been clarified;
- Contents have been reorganized and many clarifications to provisions have been made;
- [Annex A](#) has been reorganized to mirror the numbering of the normative clauses and it has been updated with substantial guidance moved from normative clauses.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The International Standards on offshore structures prepared by TC 67/SC 7 (i.e. ISO 19900, the ISO 19901 series, ISO 19902, ISO 19903, ISO 19904-1, the ISO 19905 series, ISO 19906) constitute a common basis addressing design requirements and assessments of all types of offshore structures used by the petroleum and natural gas industries worldwide.

NOTE These are sometimes referred to as the ISO 19900 series on offshore structures.

Through their application, the intention is to achieve adequate structural integrity and performance based on reliability levels appropriate for manned and unmanned offshore structures, whatever the nature or combination of the materials used.

Structural integrity is an overall concept comprising: models for describing actions, structural analyses, design rules, safety elements, workmanship, quality management, and national requirements, all of which are mutually dependent. The modification of any of these elements in isolation can cause an imbalance or inconsistency, with possible impact on the reliability inherent in the offshore structure. The implications involved in modifying one element, therefore, need to be considered in relation to all the elements and the overall reliability of the offshore structure.

The International Standards on offshore structures prepared by TC 67/SC 7 are intended to provide latitude in the choice of structural configurations, materials and techniques and to allow for innovative solutions. Sound engineering judgement is, therefore, necessary in the use of these documents.

[Figure 1](#) gives a general indication of the relationships between the International Standards on offshore structures prepared by TC 67/SC 7.

This document, i.e. ISO 19900, follows the principles of ISO 2394 and is the unifying document for International Standards on offshore structures prepared by TC 67/SC 7, which encompass both specific requirements for offshore structures (the ISO 19901 series) and “structure type” documents (ISO 19902, ISO 19903, ISO 19904-1, ISO 19905-1, ISO 19905-3, and ISO 19906).

The ISO 19901 series addresses particular aspects of the design, construction, and operation of offshore structures for the petroleum and natural gas industries. The provisions can be applicable to structures of different types, materials and operating environments.

In addition to the relationships between the “structure type” documents and the ISO 19901 series, there is also some interdependence among the “structure type” documents, in that one can reference another, e.g. ISO 19906 on arctic offshore structures builds upon the requirements of ISO 19902 on fixed steel offshore structures.

In ISO International Standards, the following verbal forms are used:

- “shall” and “shall not” are used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted;
- “should” and “should not” are used to indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited;
- “may” is used to indicate a course of action permissible within the limits of the document;
- “can” and “cannot” are used for statements of possibility and capability, whether material, physical or causal.

Additional information and guidance are given in [Annex A](#), where the clause numbering mirrors the normative clauses to facilitate cross referencing.

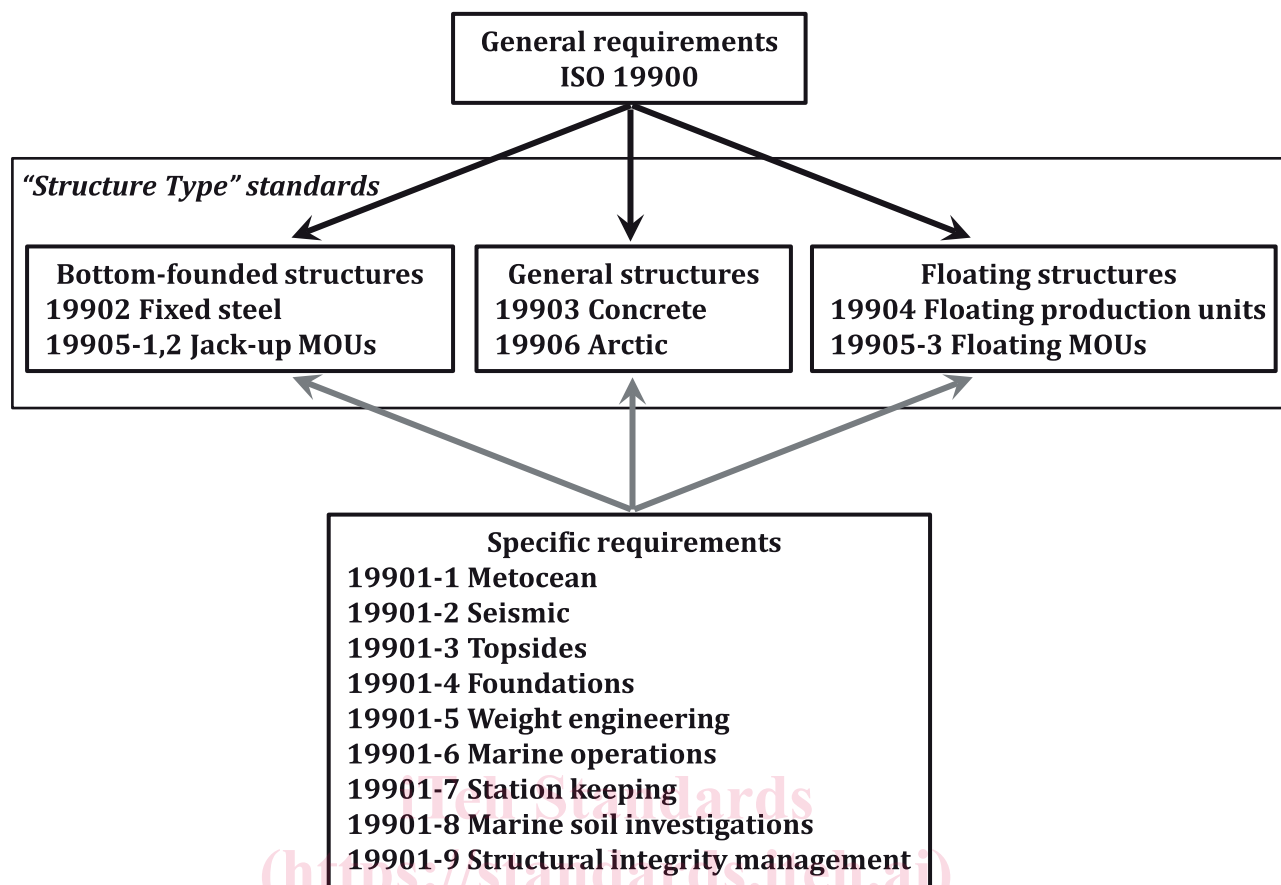


Figure 1 — Relationship of International Standards on offshore structures prepared by TC67/SC7

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