

norm

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Petroleum and natural gas industries -
Specific requirements for offshore
structures - Part 8: Marine soil
investigations (ISO/DIS 19901-
8:2013, IDT)

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English Version

Petroleum and natural gas industries - Specific requirements for offshore structures - Part 8: Marine soil Investigations (ISO/DIS 19901-8:2013)

Industries du pétrole et du gaz naturel - Exigences spécifiques relatives aux structures en mer - Partie 8: Investigations des sols en mer (ISO/DIS 19901-8:2013)

Erdöl- und Erdgasindustrie - Spezielle Anforderungen für Offshore-Anlagen - Teil 8: Meeresbodenuntersuchungen (ISO/DIS 19901-8:2013)

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Voorbereiding
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Foreword

This document (prEN ISO 19901-8:2013) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by AFNOR.

This document is currently submitted to the parallel Enquiry.

Endorsement notice

The text of ISO/DIS 19901-8:2013 has been approved by CEN as prEN ISO 19901-8:2013 without any modification.

Preview

Voorbeeld
Preview



Petroleum and natural gas industries — Specific requirements for offshore structures —

Part 8: Marine soil Investigations

*Industries du pétrole et du gaz naturel — Exigences spécifiques relatives aux structures en mer —
Partie 8: Investigations des sols en mer*

ICS 75.180.10

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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Foreword

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- *Part 2: Seismic design procedures and criteria*
- *Part 3: Topsides structure*
- *Part 4: Geotechnical and foundation design considerations*
- *Part 5: Weight control during engineering and construction*
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- *ISO 19900, Petroleum and natural gas industries — General requirements for offshore structures*
- *ISO 19901 (all parts), Petroleum and natural gas industries — Specific requirements for offshore structures*
- *ISO 19902, Petroleum and natural gas industries — Fixed steel offshore structures*
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- *ISO/NP 13628-12, Petroleum and natural gas industries - Design and operation of subsea production systems – Part 12: Dynamic production risers*

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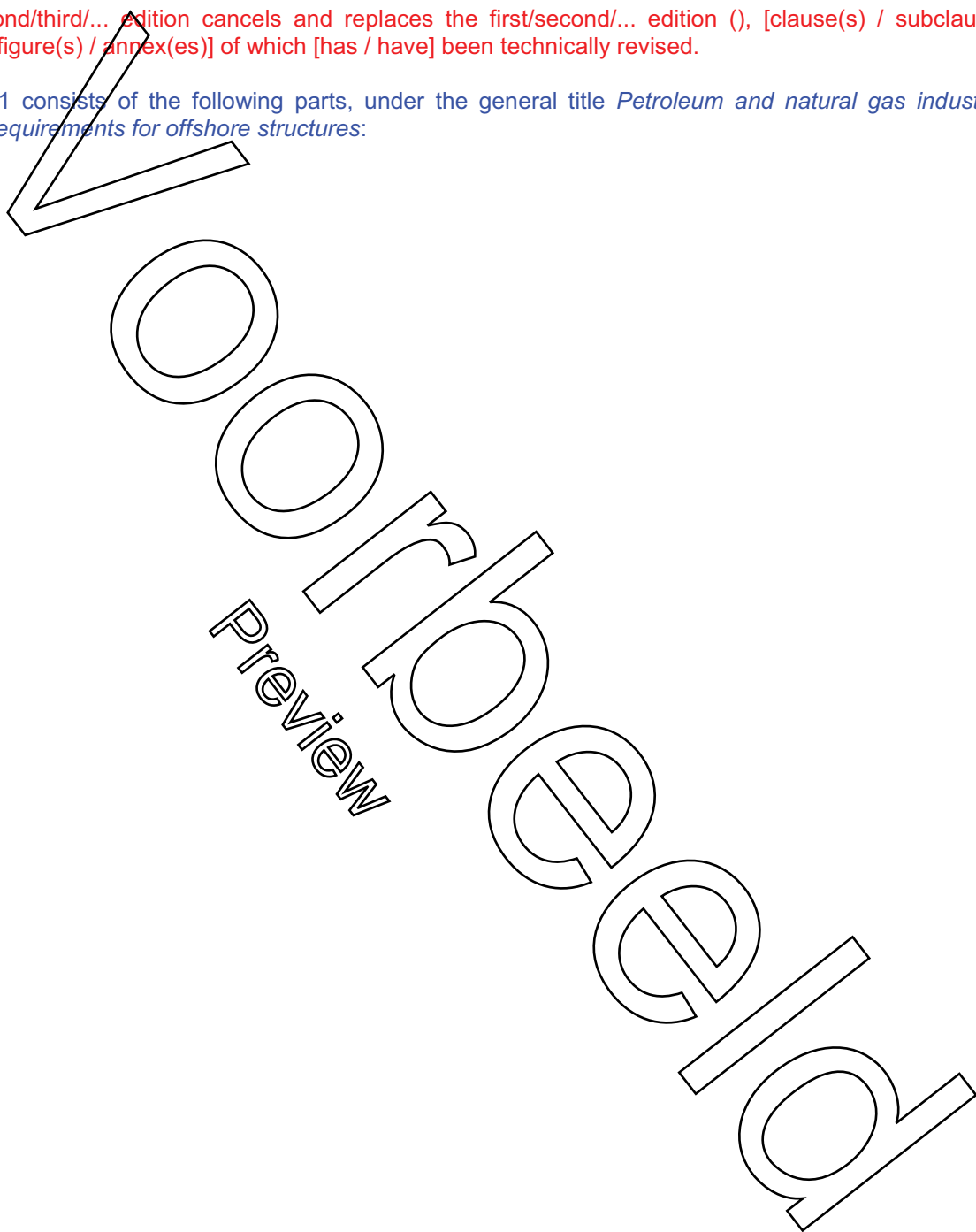
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ISO 19901-8 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures*, Subcommittee SC 7, *Offshore structures*.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

ISO 19901 consists of the following parts, under the general title *Petroleum and natural gas industries — Specific requirements for offshore structures*:



Introduction

The series of International Standards applicable to offshore structures, ISO 19900 to ISO 19906, constitutes a common basis covering those aspects that address design requirements and assessments of all offshore structures used by the petroleum and natural gas industries worldwide. Through their application, the intention is to achieve reliability levels appropriate for manned and unmanned offshore structures, whatever the nature or combination of the materials used.

It is important to recognize that structural integrity is a concept comprising models for describing actions, structural analyses, design rules, safety elements, workmanship, quality control procedures and national requirements, all of which are mutually dependent. The modification of one aspect of design in isolation can disturb the balance of reliability inherent in the overall concept of structural integrity. The implications involved in modifications, therefore, need to be considered in relation to the overall reliability of all offshore structural systems.

This part of ISO 19901 is applicable for marine soil investigation, which is only one of many possible marine site investigations as illustrated in Figure 1 below. The terminology used in Figure 1 and other important terminology are defined and given in Clause 3.

The extent of and what is to be included in a marine soil investigation, such as field programme, equipment to be used, laboratory testing programme, soil parameters to be established (measured, derived, representative) and reporting should be defined in project specifications based on important factors such as type of structures involved, type of soil conditions expected, regional or site-specific investigation, preliminary or final soil investigation.

The reporting can comprise anything from field data only to reporting of soil parameters. An example of reporting format is given in Annex G, Table G.1, but for each project the final reporting structure can be adjusted by deleting inapplicable sections, or by adding new sections.

This part of ISO 19901 gives requirements, recommendations and guidelines for the planning and execution of marine soil investigations and is applicable from the planning phase to reporting of representative soil parameters. It is important to use documented methods when soil parameters are established, and to refer to these methods in the report.

In situ and laboratory testing methods included in this part of ISO 19901 are selected based on their importance in marine soil investigation practice, availability in commercial geotechnical laboratories and the existence of an accepted testing procedure.

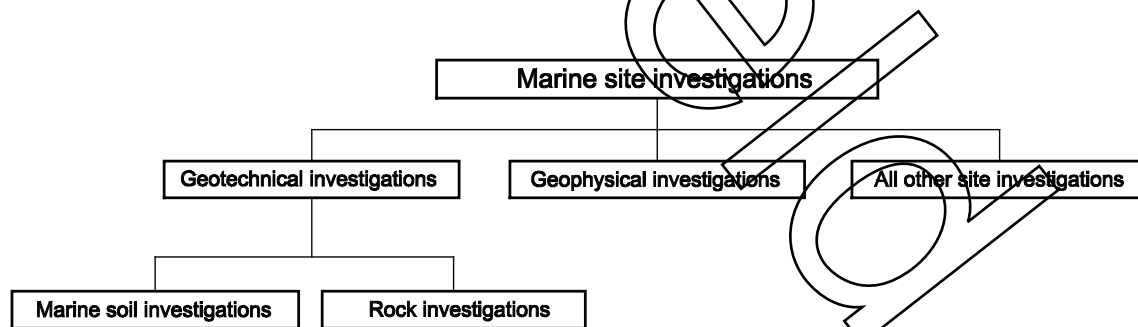


Figure 1 — Illustration showing marine soil investigations as one of many types of marine site investigations

Seabed characterization may require several types of site investigations, for example marine soil investigations and geophysical investigations including geological and geohazard evaluations. For each project the type of site investigations required have to be defined. Of importance for proper seabed characterization is also the consideration of required investigation equipment, equipment deployment mode(s) and methods in order to acquire necessary soil data of adequate quality to target depth.

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This part of ISO 19901 is applicable for marine soil investigations at any water depth and to any depth below seafloor which can be reached with the tools used.

Use of this part of ISO 19901 is based on the assumptions that:

- adequate communication takes place between geotechnical personnel involved in marine soil investigations and the personnel responsible for foundation design, construction and installation of the offshore structures;
- soil parameters are collected, recorded and interpreted by qualified personnel
- project specific scope of work for marine soil investigations is defined by one or more project specifications;

Seabed soils can vary widely, and experience gained at one location is not necessarily applicable at another. The scope of a soil investigation for one type of structure is not necessarily adequate for another. Extra caution is therefore necessary when dealing with unconventional soils or unconventional foundation concepts. Marine soil investigations include both offshore and nearshore soil investigations, which may provide very different challenges.

The detailed requirements for equipment and methods given in this part of ISO 19901 are only applicable if relevant for the scope of work defined in the project specifications.

This part of ISO 19901 is intended to provide flexibility in the choice of soil investigation techniques without hindering innovation.

The primary objectives of this part of ISO 19901 is to provide requirements and guidance for how the most important aspects of a marine soil investigation shall be performed to obtain reliable soil parameters based on documented methods.

In this part of ISO 19901, 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” and “need not” are 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

This part of ISO 19901 includes informative annexes. Informative annexes give additional information intended to assist the understanding or use of the document. They shall not contain requirements, except that Informative annexes may contain optional requirements (for example a test method that is optional may contain requirements), but there is no need to comply with these requirements to claim compliance with this part of ISO 19901.

Petroleum and natural gas industries — Specific requirements for offshore structures — Part 8: Marine soil investigations

1 Scope

This part of ISO 19901 is intended for clients, soil investigation contractors, designers, installation contractors, geotechnical laboratories and public and regulatory authorities concerned with marine soil investigations for any type of offshore and nearshore structures, or geohazard assessment studies, for petroleum and natural gas industries.

This part of ISO 19901 provides requirements, recommendations and guidelines for marine soil investigations regarding:

- a) objectives, planning and execution of marine soil investigations;
- b) deployment of investigation equipment;
- c) drilling and logging;
- d) *in situ* testing;
- e) sampling;
- f) laboratory testing;
- g) reporting.

Rock materials are only covered by this part of ISO 19901 to the extent that ordinary marine soil investigation tools can be used, e.g. for chalk, calcareous soils, cemented soils or similar soft rock. Hard rock investigations are not covered by this part of ISO 19901; see also F.13.

Foundation design is not covered by this part of ISO 19901, but covered in ISO 19901-4 and in the respective design standards for the specific types of offshore structures as listed in the Foreword.

Planning, execution and interpretation of geophysical investigations are not covered by this part of ISO 19901. However, the results from geophysical investigations should, where appropriate, be used for planning, optimization and interpretation of marine soil investigations.

Regarding geohazard assessment studies this part of 19901 does not cover planning, scope and the assessment itself, only the marine soil investigations.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19901-4, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 4: Geotechnical and foundation design considerations*

ISO 22476-1, 2012-05-31, *Geotechnical investigation and testing — Field testing — Part 1: Electrical cone and piezocone penetration tests*

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