AENOR Asociación Española de Normalización y Certificación

Génova, 6
28004 MADRID España

Centralita 914 326 000
Fax 913 104 596

www.aenor.es

RATIFICACIÓN DE DOCUMENTOS EUROPEOS ENERO 2007

HOJA DE ANUNCIO

En cumplimiento del punto 11.2.6.4 de las Reglas Internas de CEN/CENELEC Parte 2, se ha otorgado el rango de norma española al Documento Europeo siguiente:

Documento Europeo	**Título**	**Fecha de Disponibilidad**
EN ISO 19904-1:2006	Industrias del petróleo y del gas natural. Estructuras marítimas flotantes. Parte 1: Unidades monocasco, unidades semisumergibles y unidades mástil (ISO 19904-1:2006) (Ratificada por AENOR en enero de 2007.)	2006-11-01

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19904-1

November 2006

ICS 75.180.10

English Version

Petroleum and natural gas industries - Floating offshore structures - Part 1: Monohulls, semi-submersibles and spars (ISO 19904-1:2006)

Industries du pétrole et du gaz naturel - Structures en mer flottantes - Partie 1: Unités monocoques, unités semi-submersibles et unités spars (ISO 19904-1:2006)

Erdöl- und Erdgasindustrie - Schwimmende Offshore-Anlagen - Teil 1: Produktions- und Lagerungsanlagen außer Tension-Leg-Anlagen (ISO 19904-1:2006)

This European Standard was approved by CEN on 22 September 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 19904-1:2006: E

Foreword

This document (EN ISO 19904-1:2006) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum 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 European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 19904-1:2006 has been approved by CEN as EN ISO 19904-1:2006 without any modifications.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 19904-1 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*.

ISO 19904 consists of the following parts, under the general title *Petroleum and natural gas industries — Floating offshore structures*:

— *Part 1: Monohulls, semi-submersibles and spars*

Tension leg platforms is to form the subject of a future *Part 2*.

ISO 19904 is one of a series of standards for offshore structures. The full series consists of the following International Standards.

— 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* 1)

— ISO 19903, *Petroleum and natural gas industries — Fixed concrete offshore structures* 1)

— ISO 19904-1, *Petroleum and natural gas industries — Floating offshore structures — Part 1: Monohulls, semi-submersibles and spars*

— ISO 19904-2, *Petroleum and natural gas industries — Floating offshore structures — Part 2: Tension leg platforms* 2)

— ISO 19905-1, *Petroleum and natural gas industries — Site-specific assessment of mobile offshore units — Part 1: Jack-ups* 2)

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1) To be published.

2) Under preparation.

- ISO/TR 19905-2, *Petroleum and natural gas industries — Site-specific assessment of mobile offshore units — Part 2: Jack-ups commentary* 3)

- ISO 19906, *Petroleum and natural gas industries — Arctic offshore structures* 3)

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3) Under preparation.

Introduction

The series of International Standards applicable to types of offshore structure, 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, petrochemical and natural gas industries worldwide. Through their application the intention is to achieve reliability levels appropriate for manned and unmanned offshore structures, whatever the type of structure and the nature or combination of materials used.

It is important to recognize that structural integrity is an overall 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 or structural system. The implications involved in modifications, therefore, need to be considered in relation to the overall reliability of all offshore structural systems.

The series of International Standards applicable to types of offshore structure is intended to provide wide latitude in the choice of structural configurations, materials and techniques without hindering innovation. Sound engineering judgement is therefore necessary in the use of these International Standards.

International Standard ISO 19904 was developed in response to the offshore industry's demand for a coherent and consistent definition of methodologies to design, analyse and assess floating offshore structures of the class described in Clause 1. In particular, this part of ISO 19904 addresses monohulls, semi-submersibles and spars.

Some background to, and guidance on, the use of this part of ISO 19904 is provided in informative Annex A. The clause numbering in Annex A is the same as in the normative text to facilitate cross-referencing.

Petroleum and natural gas industries — Floating offshore structures —

Part 1:
Monohulls, semi-submersibles and spars

1 Scope

This part of ISO 19904 provides requirements and guidance for the structural design and/or assessment of floating offshore platforms used by the petroleum and natural gas industries to support the following functions:

- production;
- storage and/or offloading;
- drilling and production;
- production, storage and offloading;
- drilling, production, storage and offloading.

NOTE 1 Floating offshore platforms are often referred to using a variety of abbreviations, e.g. FPS, FSU, FPSO, etc. (see Clauses 3 and 4), in accordance with their intended mission.

NOTE 2 In this part of ISO 19904, the term “floating structure”, sometimes shortened to “structure”, is used as a generic term to indicate the structural systems of any member of the classes of platforms defined above.

NOTE 3 In some cases, floating platforms are designated as “early production platforms”. This term relates merely to an asset development strategy. For the purposes of this International Standard, the term “production” includes “early production”.

Its requirements do not apply to the structural systems of mobile offshore units (MOUs). These include, among others:

- floating structures intended primarily to perform drilling and/or well intervention operations (often referred to as MODUs), even when used for extended well test operations;
- floating structures used for offshore construction operations (e.g. crane barges or pipelay barges), for temporary or permanent offshore living quarters (floatels), or for transport of equipment or products (e.g. transportation barges, cargo barges), for which structures reference is made to relevant recognized classification society (RCS) rules.

Its requirements are applicable to all possible life-cycle stages of the structures defined above, such as

- design, construction and installation of new structures, including requirements for inspection, integrity management and future removal,
- structural integrity management covering inspection and assessment of structures in-service, and
- conversion of structures for different use (e.g. a tanker converted to a production platform) or reuse at different locations.

The following types of floating structure are explicitly considered within the context of this part of ISO 19904:

a) monohulls (ship-shaped structures and barges);

b) semi-submersibles;

c) spars.

In addition to the structural types listed above, this part of ISO 19904 covers other floating platforms intended to perform the above functions, consisting of partially submerged buoyant hulls made up of any combination of plated and space frame components and used in conjunction with the stationkeeping systems covered in ISO 19901-7. These other structures can have a great range of variability in geometry and structural forms and, therefore, can be only partly covered by the requirements of this part of ISO 19904. In other cases, specific requirements stated in this part of ISO 19904 can be found not to apply to all or part of a structure under design.

In all the above cases, conformity with this part of ISO 19904 will require that the design is based upon its underpinning principles and achieves a level of safety equivalent, or superior, to the level implicit in it.

NOTE 4 The speed of evolution of offshore technology often far exceeds the pace at which the industry achieves substantial agreement on innovation in structural concepts, structural shapes or forms, structural components and associated analysis and design practices, which are continuously refined and enhanced. On the other hand, International Standards can only capture explicit industry consensus, which requires maturation and acceptance of new ideas. Consequently, advanced structural concepts can, in some cases, only be partly covered by the provisions of this part of ISO 19904.

This part of ISO 19904 is applicable to steel floating structures. The principles documented herein are, however, considered to be generally applicable to structures fabricated in materials other than steel.

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 13702, *Petroleum and natural gas industries — Control and mitigation of fires and explosions on offshore production installations — Requirements and guidelines*

ISO 19900:2002, *Petroleum and natural gas industries — General requirements for offshore structures*

ISO 19901-1, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 1: Metocean design and operating considerations*

ISO 19901-7:2005, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 7: Stationkeeping systems for floating offshore structures and mobile offshore units*

ISO 19902:—4), *Petroleum and natural gas industries — Fixed steel offshore structures*

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4) To be published.