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Standards

Irish Standard
I.S. EN ISO 13624-1:2009

Petroleum and natural gas industries - Drilling and production equipment - Part 1: Design and operation of marine drilling riser equipment (ISO 13624-1:2009)

I.S. EN ISO 13624-1:2009

Incorporating amendments/corrigenda issued since publication:

This document replaces:

This document is based on:
EN ISO 13624-1:2009

Published:
15 November, 2009

This document was published
under the authority of the NSAI
and comes into effect on:
17 December, 2009

ICS number:
75.180.10

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ICS 75.180.10

English Version

**Petroleum and natural gas industries - Drilling and production
equipment - Part 1: Design and operation of marine drilling riser
equipment (ISO 13624-1:2009)**

Industries du pétrole et du gaz naturel - Équipement de
forage et de production - Partie 1: Conception et
exploitation des tubes prolongateurs pour les forages en
mer (ISO 13624-1:2009)

Erdöl- und Erdgasindustrien - Bohr- und Förderanlagen -
Auslegung und Betrieb von Bohrförderanlagen auf See
(ISO 13624-1:2009)

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Foreword

This document (EN ISO 13624-1:2009) 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 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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Endorsement notice

The text of ISO 13624-1:2009 has been approved by CEN as a EN ISO 13624-1:2009 without any modification.

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I.S. EN ISO 13624-1:2009
**INTERNATIONAL
STANDARD**

**ISO
13624-1**

First edition
2009-11-15

**Petroleum and natural gas industries —
Drilling and production equipment —**

**Part 1:
Design and operation of marine drilling
riser equipment**

*Industries du pétrole et du gaz naturel — Équipement de forage et de
production —*

*Partie 1: Conception et exploitation des tubes prolongateurs pour les
forages en mer*



Reference number
ISO 13624-1:2009(E)

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Published in Switzerland

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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 13624-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 4, *Drilling and production equipment*.

ISO 13624 consists of the following parts, under the general title *Petroleum and natural gas industries — Drilling and production equipment*:

- *Part 1: Design and operation of marine drilling riser equipment*
- *Part 2: Deepwater drilling riser methodologies, operations, and integrity technical report* (Technical Report)

Introduction

Since the first edition of API RP 16Q was first issued in November, 1993, hydrocarbon exploration in deep-water environments has increased significantly. As a consequence of this, the need has been identified to update that code of practice to address the issues of deep-water drilling risers in sufficient detail to supplement API RP 16Q for drilling in water depths up to 3 048 m (10 000 ft).

Under the auspices of the DeepStar programme, substantial work was commissioned during 1999 and 2000 by the DeepStar Drilling Committee 4502 and lead to the development by several contractors of *Deep-water Drilling Riser Methodologies, Operations, and Integrity Guidelines* in February 2001. These guidelines were intended to supplement the existing text of API RP 16Q (1993). In a subsequent Joint Industry Project funded by DeepStar 5500 and in collaboration with API, these guidelines were supplemented with other identified revisions to produce a draft update second edition of API RP 16Q and an associated API Technical Report 16TR1, designed to be read in conjunction with the revised API RP 16Q and to supplement its contents, by providing additional guidance on recommended riser analysis methodologies through detailed explanations, step-by-step procedures and worked examples.

API publications can be used by anyone desiring to do so. Every effort has been made to assure the accuracy and reliability of the data contained in them. It is the responsibility of the users of this part of ISO 13624 to ensure that its use does not result in any loss or damage or in the violation of any federal, state, or municipal regulation.

Annex A through Annex E are informative.

Petroleum and natural gas industries — Drilling and production equipment —

Part 1: Design and operation of marine drilling riser equipment

1 Scope

This part of ISO 13624 pertains to the design, selection, operation and maintenance of marine riser systems for floating drilling operations. Its purpose is to serve as a reference for designers, for those who select system components, and for those who use and maintain this equipment. It relies on basic engineering principles and the accumulated experience of offshore operators, contractors, and manufacturers.

NOTE Technology is advancing in this field and improved methods and equipment are continually evolving. Each owner and operator is encouraged to observe the recommendations outlined herein and to supplement them with other proven technology that can result in more cost effective, safer, and/or more reliable performance.

The marine drilling riser is best viewed as a system. It is necessary that designers, contractors, and operators realize that the individual components are recommended and selected in a manner suited to the overall performance of that system. For the purposes of this part of ISO 13624, a marine drilling riser system includes the tensioner system and all equipment between the top connection of the upper flex/ball joint and the bottom of wellhead conductor outer casing. It specifically excludes the diverter. Also, the applicability of this part of ISO 13624 is limited to operations with a subsea BOP stack deployed at the seafloor.

Clauses 1 through 7 of this part of ISO 13624 are directly applicable to most floating drilling operations. Special situations are addressed in 8.1 and 8.4 dealing with deep-water drilling and collapse. The special considerations required for guidelineless drilling are addressed in 8.2. In addition, 8.3 and 8.5 address operations in cold-weather conditions and H₂S considerations.

It is important that all riser primary-load-path components addressed in this part of ISO 13624 be consistent with the load classifications specified in ISO 13625.

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 13625, *Petroleum and natural gas industries — Drilling and production equipment — Marine drilling riser couplings*

BS 7910, *Guide to methods for assessing the acceptability of flaws in metallic structures*

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