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Petroleum and natural gas industries - Drilling and production equipment - Offshore conductor design, setting depth and installation (ISO 3421:2022)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Industries du pétrole et du gaz naturel - Équipements
de forage et de production - Conception des tubes
conducteurs en mer, profondeur de mise en place et
installation (ISO 3421:2022)

Erdöl- und Erdgasindustrie - Bohr- und
Förderausrüstung - Offshore-Leiterauslegung, Setztiefe
und Einbau (ISO 3421:2022)

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EN ISO 3421:2022 (E)

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European foreword

This document (EN ISO 3421:2022) 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 NEN.

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Endorsement notice

The text of ISO 3421:2022 has been approved by CEN as EN ISO 3421:2022 without any modification.

INTERNATIONAL STANDARD

ISO 3421

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Petroleum and natural gas industries — Drilling and production equipment — Offshore conductor design, setting depth and installation

*Industries du pétrole et du gaz naturel — Équipements de forage
et de production — Conception des tubes conducteurs en mer,
profondeur de mise en place et installation*



Reference number
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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.

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).

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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 4, *Drilling and production equipment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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.

ISO 3421:2022(E)

Introduction

This document provides requirements and guidance on the design, setting depth, and installation of offshore conductors used by the petroleum and natural gas industries worldwide. Sound engineering judgment is necessary in the use of this document.

Conductor design addresses actions and action combinations, strength and stability checks, and fatigue checks. Setting depth provides calculation methodologies for different installation methods. Installation identifies relevant methods and their applicability together with corresponding procedures as well as documentation and quality control requirements.

Some background to and guidelines on the use of this document is provided in [Annex A](#).

Petroleum and natural gas industries — Drilling and production equipment — Offshore conductor design, setting depth and installation

1 Scope

This document specifies the requirements and recommendations for the design, setting depth and installation of conductors for the offshore petroleum and natural gas industries. This document specifically addresses:

- design of the conductor, i.e. determination of the diameter, wall thickness, and steel grade;
- determination of the setting depth for three installation methods, namely, driving, drilling and cementing, and jetting;
- requirements for the three installation methods, including applicability, procedures, and documentation and quality control.

This document is applicable to:

- platform conductors: installed through a guide hole in the platform drill floor and then through guides attached to the jacket at intervals through the water column to support the conductor, withstand actions, and prevent excessive displacements;
- jack-up supported conductors: a temporary conductor used only during drilling operations, which is installed by a jack-up drilling rig. In some cases, the conductor is tensioned by tensioners attached to the drilling rig;
- free-standing conductors: a self-supporting conductor in cantilever mode installed in shallow water, typically water depths of about 10 m to 20 m. It provides sole support for the well and sometimes supports a small access deck and boat landing;
- subsea wellhead conductors: a fully submerged conductor extending only a few metres above the sea floor to which a BOP and drilling riser are attached. The drilling riser is connected to a floating drilling rig. The BOP, riser and rig are subject to wave and current actions while the riser can also be subject to VIV.

This document is not applicable to the design of drilling risers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 19900, *Petroleum and natural gas industries — General requirements for offshore structures*

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

ISO 19901-8, *Petroleum and natural gas industries — Specific requirements for offshore structures — Part 8: Marine soil investigations*

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

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