BS EN ISO 35102:2021
Incorporating corrigendum May 2022

BSI Standards Publication

Petroleum and natural gas industries — Arctic operations — Escape, evacuation and rescue from offshore installations

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 35102:2021. It is identical to ISO 35102:2020. It supersedes BS ISO 35102:2020, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/17, Materials and equipment for petroleum, petrochemical and natural gas industries.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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31 May 2022	This corrigendum renumbers BS ISO 35102:2020 as BS EN ISO 35102:2021

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EN ISO 35102

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English Version

Petroleum and natural gas industries - Arctic operations - Escape, evacuation and rescue from offshore installations (ISO 35102:2020)

Industries du pétrole et du gaz naturel - Opérations en Arctique - Fuite, évacuation et sauvetage depuis les installations en mer (ISO 35102:2020)

Erdöl- und Erdgasindustrie - Arktisbetrieb - Flucht, Evakuierung und Rettung von Offshore-Anlagen (ISO 35102:2020)

This European Standard was approved by CEN on 5 December 2021.

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European foreword

The text of ISO 35102:2020 has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 35102:2021 by 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.

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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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Endorsement notice

The text of ISO 35102:2020 has been approved by CEN as EN ISO 35102:2021 without any modification.

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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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This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 8, *Arctic operations*.

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 arctic operations (ISO 35101, ISO 35102, ISO 35103, ISO 35104, ISO/TS 35105 and ISO 35106) address design and operational requirements and provide guidance on their use by the petroleum and natural gas industries in offshore arctic and cold regions. These documents promote internationally agreed approaches for oil and gas operations in arctic and cold region offshore environments. They were developed in response to the offshore oil and gas industry's demand for a coherent and consistent definition of methodologies to design, analyze, assess and operate arctic and cold region offshore structures. Through their proper application, the intention is to help ensure the safety of life and to minimize damage to the arctic environment. These documents are intended to provide wide latitude in the selection of design and operational solutions without hindering innovation. Even so, sound engineering judgement is expected in the application of these documents.

Personnel working in petroleum and natural gas industries in the arctic offshore face a number of risks from the physical and work environments. These include prolonged periods of darkness (in the winter) and light (in the summer), remoteness, cold ambient air temperatures, wind chill, dense fog, cold water temperatures, sea ice in varying concentrations and thickness and potentially, icebergs. These environmental factors can affect worker safety, should the installation’s integrity be compromised. Additionally, these harsh environmental factors can have a negative impact on equipment.

The escape, evacuation and rescue (EER) system facilitates the successful escape from an incident, subsequent precautionary or emergency evacuation from the installation, and the ultimate rescue of installation personnel. The EER provisions are the compensating measures mitigating risks which facilitate the safety of personnel working in arctic and cold region offshore environments.

This document specifies requirements and recommendations applicable to design and operational aspects of EER from oil and gas installations deployed in arctic and cold region offshore environments. Through their application, the intention is to achieve reliability levels appropriate for manned and normally unmanned offshore installations, regardless of the type of structure/facility and the nature or combination of the materials used and the severity of the environment to which the installation is subjected.

The EER provisions are largely performance-based stipulations which include verifiable attributes or benchmarks that provide qualitative levels or quantitative measures of performance. The key characteristic of a performance-based standard is that it is focused on what needs to be achieved rather than on how it should be done. One of the performance targets is that use of the EER minimizes the possibility of casualties in the process. The performance target is developed in the context of a design HSE case.

The main body of this document considers the overall EER system design and operational aspects. Annex A provides EER system design and operational background information and guidance intended to assist the user of this document in understanding the requirements and how they can be met. The clause numbering in Annex A is the same as in the main body text to facilitate cross-referencing. Annex B provides a risk analysis example and information pertaining to operational EER systems.

In this document, the following verbal forms are used:

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” indicates a permission;

— “can” indicates a possibility or a capability.

Users of this document are expected to be familiar with ISO 15544, ISO 17776 and ISO 31000.

INTERNATIONAL STANDARD **ISO 35102:2020(E)**

Petroleum and natural gas industries — Arctic operations — Escape, evacuation and rescue from offshore installations

1 Scope

This document establishes the principles, specifies the requirements and provides guidance for the development and implementation of an escape, evacuation and rescue (EER) plan. It is applicable to offshore installation design, construction, transportation, installation, offshore production/exploration drilling operation service life inspection/repair, decommissioning and removal activities related to petroleum and natural gas industries in the arctic and cold regions.

Reference to arctic and cold regions in this document is deemed to include both the Arctic and other locations characterized by low ambient temperatures and the presence or possibility of sea ice, icebergs, icing conditions, persistent snow cover and/or permafrost.

This document contains requirements for the design, operation, maintenance, and service-life inspection or repair of new installations and structures, and to modification of existing installations for operation in the offshore Arctic and cold regions, where ice can be present for at least a portion of the year. This includes offshore exploration, production and accommodation units utilized for such activities. To a limited extent, this document also addresses the vessels that support ER, if part of the overall EER plan.

While this document does not apply specifically to mobile offshore drilling units (MODUs, see ISO 19905-1) many of the EER provisions contained herein are applicable to the assessment of such units in situations when the MODU is operated in arctic and cold regions.

The provisions of this document are intended to be used by stakeholders including designers, operators and duty holders. In some cases, floating platforms (as a type of offshore installations) can be classified as vessels (ships) by national law and the EER for these units are stipulated by international maritime law. However, many of the EER provisions contained in this document are applicable to such floating platforms.

This document applies to mechanical, process and electrical equipment or any specialized process equipment associated with offshore arctic and cold region operations that impacts the performance of the EER system. This includes periodic training and drills, EER system maintenance and precautionary down-manning as well as emergency situations.

EER associated with onshore arctic oil and gas facilities are not addressed in this document, except where relevant to an offshore development.

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 15544, *Petroleum and natural gas industries — Offshore production installations — Requirements and guidelines for emergency response*

ISO 17776, *Petroleum and natural gas industries — Offshore production installations — Major accident hazard management during the design of new installations*