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BS EN ISO 17349:2016



BSI Standards Publication

Petroleum and natural gas industries — Offshore platforms handling streams with high content of CO₂ at high pressures

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This British Standard is the UK implementation of EN ISO 17349:2016.

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 secretary.

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March 2016

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English Version

**Petroleum and natural gas industries - Offshore platforms
handling streams with high content of CO₂ at high
pressures (ISO 17349:2016)**

Industries du pétrole et du gaz naturel - Plates-formes
en mer traitant des courants à fort teneur en CO₂ à
haute pression (ISO 17349:2016)

Erdöl-, petrochemische und Erdgasindustrie - Dampf
mit hohem CO₂ Gehalt bei hohen Drücken und hohen
Durchflussraten - Richtlinien (ISO 17349:2016)

This European Standard was approved by CEN on 10 January 2016.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

This document (EN ISO 17349:2016) 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.

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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

Endorsement notice

The text of ISO 17349:2016 has been approved by CEN as EN ISO 17349:2016 without any modification.

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Abbreviated terms	4
5 Overview of CO₂-rich streams behaviour	5
5.1 General.....	5
5.2 Hydrate formation.....	5
5.3 CO ₂ solid formation.....	6
5.4 Flow metering.....	6
6 Blow down, depressuring and relieving of plant and equipment	6
7 Flare and vent system configuration	7
7.1 General.....	7
7.2 System selection.....	7
7.3 System configuration.....	8
7.3.1 Flare.....	8
7.3.2 Vent.....	9
8 Materials	9
8.1 Corrosion.....	9
8.1.1 General.....	9
8.1.2 Internal corrosion control by dehydration.....	9
8.1.3 CRAs.....	10
8.1.4 Internal corrosion protecting chemicals.....	10
8.1.5 Internal organic coatings.....	10
8.2 Brittle fracture.....	10
8.3 Ductile fracture.....	10
8.4 Lubricants.....	10
8.5 Non-metallic seals for CO ₂ service.....	11
9 Safety	11
9.1 General.....	11
9.2 Impacts of the loss of containment of CO ₂ -rich streams.....	11
9.2.1 General.....	11
9.2.2 Respiratory physiological parameters.....	12
9.2.3 Low temperature impact.....	12
9.2.4 CO ₂ -rich stream BLEVE.....	12
9.3 Hazard identification and risk assessment and management.....	12
9.3.1 General.....	12
9.3.2 Hazard identification.....	13
9.3.3 Risk assessment and management.....	13
9.4 Consequence analysis.....	14
9.4.1 General.....	14
9.4.2 CO ₂ dispersion.....	14
9.4.3 Effects of cold CO ₂ jet.....	14
9.5 CO ₂ detection.....	14
9.6 Strategies.....	15
Annex A (informative) Evaluation of EOS for CO₂-rich streams	16
Annex B (informative) Hydrate formation	22
Annex C (informative) Water content specification	26

This is a preview of "BS EN ISO 17349:2016". [Click here to purchase the full version from the ANSI store.](#)

Annex D (informative) Depressuring of CO₂-rich streams	33
Annex E (informative) Configuration of flare and vent systems	37
Annex F (informative) Boiling liquid expanding vapour explosion (BLEVE)	40
Annex G (informative) Methodology for evaluation of running ductile fracture	42
Annex H (informative) Non-metallic materials for use in CO₂ service	44
Annex I (informative) CO₂ toxicology information	45
Bibliography	48

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

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Introduction

In recent years, the oil industry has been facing challenges in developing and operating high-CO₂ content offshore fields. The CO₂-rich streams, separated from the produced natural gas, can be injected to enhance oil recovery from the reservoirs. Even in cases where the oil recovery increase is not so significant, operators have to consider the CO₂-rich stream compression and injection, in order to avoid its venting to the atmosphere.

Main concerns comprise surface safety system and material selection areas, which lack specific standards and regulations for this scenario. The commercial tools available, for instance, to model the dispersion of gases, need to be validated for CO₂ and CO₂/hydrocarbon mixtures, which have distinctive thermodynamic behaviour. This will affect the choice of materials and plant design.

This International Standard addresses concepts and criteria for processing CO₂-rich streams, as a supplement to existing standards for offshore installations.

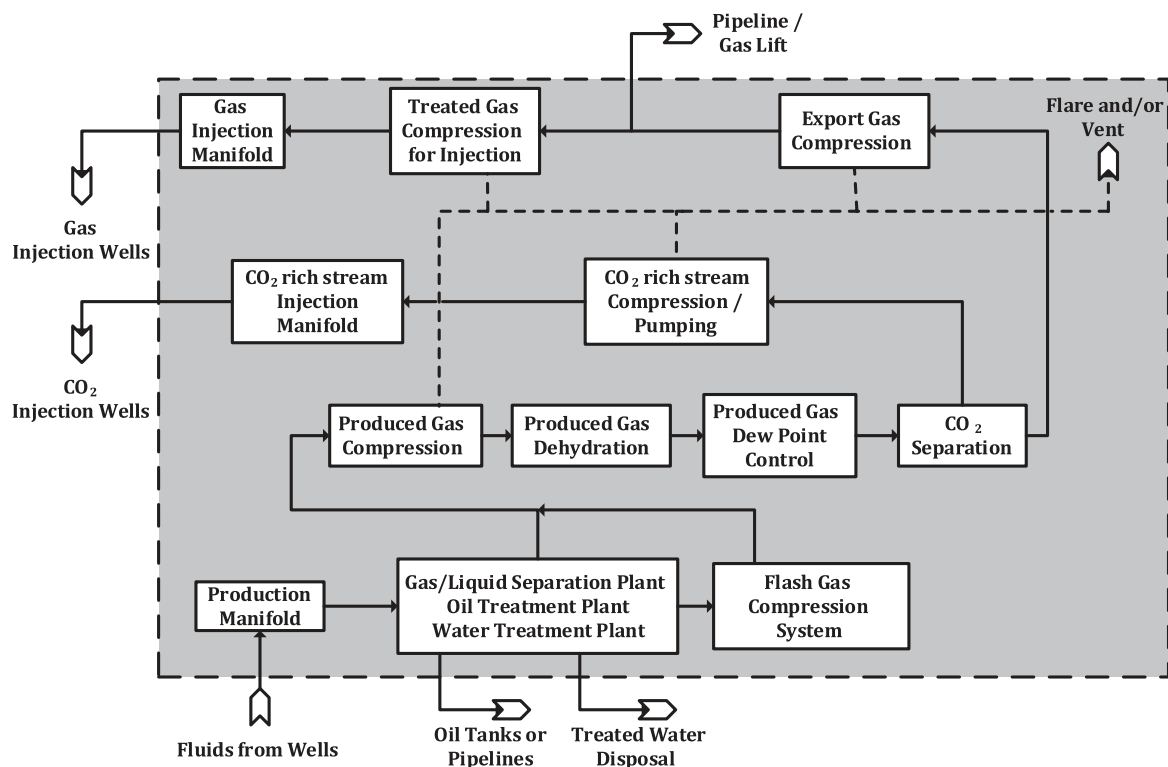
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Petroleum and natural gas industries — Offshore platforms handling streams with high content of CO₂ at high pressures

1 Scope

This International Standard contains provisions for design of topside facilities for offshore plants handling CO₂-rich streams at high pressures; i.e. CO₂ molar concentration above 10 %. The surface systems include usual offshore process unit operations, as shown in [Figure 1](#).

This International Standard is applicable only to topside facilities of fixed and floating oil and gas production offshore units up to the last barrier, such as an ESDV. Subsea production systems and Cryogenic CO₂ separation are not covered.



NOTE This example is within the scope of this International Standard.

Figure 1 — Example of a Process Flow Diagram (in grey zone)

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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*