



NSAI
Standards

Irish Standard
I.S. EN ISO 13354:2014

Petroleum and natural gas industries - Drilling and production equipment - Shallow gas diverter equipment (ISO 13354:2014)

I.S. EN ISO 13354:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 13354:2014

Published:

2014-05-21

*This document was published
under the authority of the NSAI
and comes into effect on:*

2014-06-07

ICS number:

75.180.10

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN ISO 13354

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2014

ICS 75.180.10

English Version

**Petroleum and natural gas industries - Drilling and production
equipment - Shallow gas diverter equipment (ISO 13354:2014)**

Industries du pétrole et du gaz naturel - Équipements de
forage et de production - Équipement défecteur pour gaz
de surface (ISO 13354:2014)

Erdöl- und Erdgasindustrie - Shallow gas
Diverterausrüstung (ISO 13354:2014)

This European Standard was approved by CEN on 28 February 2014.

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

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

Foreword.....	3
----------------------	----------

Foreword

This document (EN ISO 13354:2014) 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 November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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 13354:2014 has been approved by CEN as EN ISO 13354:2014 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

**ISO
13354**

First edition
2014-05-15

Petroleum and natural gas industries — Drilling and production equipment — Shallow gas diverter equipment

*Industries du pétrole et du gaz naturel — Équipements de forage et
de production — Équipement déflecteur pour gaz de surface*



Reference number
ISO 13354:2014(E)

© ISO 2014

ISO 13354:2014(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Diverter system equipment	7
4.1 General purpose.....	7
4.2 Findings of blowout reports.....	7
4.3 Applications of diverter systems.....	8
4.4 Layout considerations — Land rigs and bottom-supported marine structures.....	8
4.5 Layout considerations — Floating rigs.....	18
5 Floating rigs — Specific aspects	26
5.1 Use of the marine riser.....	26
5.2 Additional functions of the diverter system.....	28
5.3 Comparison of types of floating support.....	28
6 Preparation for shallow gas operations	31
6.1 Call for tender.....	31
6.2 Important issues.....	31
6.3 Pre-spud checks.....	32
6.4 Pre-spud meetings.....	34
6.5 Pre-spud drills.....	35
6.6 Preparing the response to a shallow-gas flow.....	36
7 Diverter system inspection and maintenance	39
7.1 General.....	39
7.2 Maintenance.....	39
7.3 Inspection and testing.....	39
7.4 Diverter system piping.....	39
7.5 Manufacturer documentation.....	40
Bibliography	41

ISO 13354:2014(E)

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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, *Petroleum and Natural gas industries*, Subcommittee SC 4, *Drilling and production equipment*.

Introduction

Drilling into shallow-gas-bearing formations is a very delicate and challenging operation. If the drilling operations are seriously complicated by the reduced safety margin available between kick and loss, the situation in case of a gas influx becomes extremely hazardous, due to a combination of the following adverse factors.

- Shallow gas flows are extremely fast-developing events; there is only a short transition time between influx detection and well unloading, resulting in a reduced time for the driller to take the right decision, and leaving little room for error.
- Past blowout reports have disclosed the magnitude of severe dynamic loads applied to surface diverting equipment. One of the associated effects is erosion, which adds a high potential for fire and explosion due to flow impingement on rig facilities which gives the gas flow access to various sources of ignition.
- Many past shallow-gas kicks turned into uncontrolled blowouts due to the failure of former diverter systems installed several decades ago. Failure is seen as a result of the system's complexity, its lack of functional reliability and its inability to cope with the severe dynamic loads.
- Certain drilling supports are exposed to specific threats associated with shallow gas blowouts, e.g. risk of cratering, risk of ship-shaped vessel capsize.
- Unprepared or inadequately trained drilling crews experience a high level of stress when facing a violent shallow gas flow.

In the aftermath of shallow gas blowouts during the last four decades, comprehensive inquiries and reports have been carried out, in particular by the specialists involved in combating these events, and significant findings and conclusions have been published. In the meantime, the manufacturing industry has developed various equipment aimed at significantly improving the safety of shallow-gas drilling operations.

This International Standard has been prepared taking these aspects into consideration.

Petroleum and natural gas industries — Drilling and production equipment — Shallow gas diverter equipment

1 Scope

This International Standard specifies requirements for the selection of the diverter equipment for rigs used to drill shallow-gas-bearing formations. It covers both onshore and offshore drilling operations, and considers also the auxiliary equipment associated with floating rigs.

The specified requirements concern the following diverter equipment:

- annular sealing devices;
- vent outlets;
- diverter valves;
- diverter piping.

This International Standard highlights the concerns associated with the selection of a marine floating drilling support. It covers safety issues concerning key rig equipment, and important steps of action required prior to starting the drilling operations.

It provides only general guidelines regarding the response to be given to a shallow-gas flow.

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 13533, *Petroleum and natural gas industries — Drilling and production equipment — Drill-through equipment*

API 16D (latest revision), *Specification for Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

actuator

device used to open or close a valve by means of applied manual, hydraulic, pneumatic or electrical energy

3.2

annular packing element

doughnut-shaped rubber/elastomer element that creates a seal in an annular preventer or diverter

Note 1 to entry: The annular packing element is displaced toward the bore centre by the upward movement of an annular piston.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-