



SLOVENSKI STANDARD
SIST EN ISO 10417:2005
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Previdljiva in nevidljiva plinovita goriva - Podzemni varnostni ventilni sistemi - Oblikovanje, namestitve, delovanje in popravi (ISO 10417:2004)

Petroleum and natural gas industries - Subsurface safety valve systems - Design, installation, operation and redress (ISO 10417:2004)

Erdöl- und Erdgasindustrie - Untertage-Sicherheitsventil-Systeme - Auslegung, Einbau, Betrieb und Instandsetzung (ISO 10417:2004)

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ICS:

75.180.10	Oprema za raziskovanje in odkopavanje	Exploratory and extraction equipment
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 10417

July 2004

ICS 75.180.10

English version

Petroleum and natural gas industries - Subsurface safety valve systems - Design, installation, operation and redress (ISO 10417:2004)

Industries du pétrole et du gaz naturel - Systèmes de vannes de sécurité de fond de puits - Conception, installation, fonctionnement et rectification (ISO 10417:2004)

This European Standard was approved by CEN on 7 June 2004.

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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 Central Secretariat has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 10417:2004 (E)

Foreword

This document (EN ISO 10417:2004) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum 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of an identical text or by endorsement, at the latest by January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

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

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The text of ISO 10417:2004 has been approved by CEN as EN ISO 10417:2004 without any modifications.

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INTERNATIONAL
STANDARD

ISO
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Second edition
2004-07-01

**Petroleum and natural gas industries —
Subsurface safety valve systems —
Design, installation, operation and
redress**

*Industries du pétrole et du gaz naturel — Systèmes de vannes de
protection de fond de puits — Étude, installation, fonctionnement et
réparation*

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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 10417 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*.

This second edition cancels and replaces the first edition (ISO 10417:1993), which has been technically revised.

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Introduction

This International Standard has been developed by users/purchasers and suppliers/manufacturers of subsurface safety valve (SSSV) equipment intended for use in the petroleum and natural gas industry worldwide. This International Standard is intended to give requirements and information to both parties on the design, operation, installation and testing of subsurface safety valve system equipment and also the storage/transport, maintenance, and redress of the SSSV equipment.

Users of this International Standard should be aware that further or differing requirements might be needed for individual installations, storage/transport and maintenance. This International Standard is not intended to inhibit the user/purchaser from accepting alternative engineering solutions. This may be particularly applicable where there is innovative or developing well-completion technology.

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Petroleum and natural gas industries — Subsurface safety valve systems — Design, installation, operation and redress

1 Scope

This International Standard establishes requirements and provides guidelines for configuration, installation, test, operation and documentation of subsurface safety valve (SSSV) systems. In addition, this International Standard establishes requirements and provides guidelines for selection, handling, redress and documentation of SSSV downhole production equipment.

This International Standard is not applicable to repair activities.

NOTE ISO 10432 provides requirements for SSSV equipment repair.

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 9000, *Quality management systems — Fundamentals and vocabulary*

ISO 9712, *Non-destructive testing — Qualification and certification of personnel*

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ISO 10432:—¹, *Petroleum and natural gas industries — Downhole equipment — Subsurface safety valve equipment*

ISO 16070, *Petroleum and natural gas industries — Downhole equipment — Lock mandrels and landing nipples*

ANSI/NCSL Z 540-1, *Calibration — Calibration Laboratories and Measuring and Test Equipment — General Requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply.

3.1

control line

conduit utilized to transmit control signals to SCSSVs

3.2

emergency shutdown system

system of stations which, when activated, initiate facility shutdown

3.3

equalizing feature

SSSV mechanism which permits the well pressure to bypass the SCSSV closure mechanism

1) To be published.

ISO 10417:2004(E)**3.4****fail-safe device**

device which, upon loss of the control medium, automatically shifts to a safe position

3.5**fail-safe setting depth**

maximum true vertical depth at which an SCSSV can be set and closed under worst-case hydrostatic conditions

3.6**maintenance**

service operations performed on SSSV system equipment as part of routine operations

3.7**manufacturer**

principal agent in the design, fabrication and furnishing of original SSSV system equipment

3.8**operating manual**

publication issued by the manufacturer, which contains detailed data and instructions related to the design, installation, operation and maintenance of SSSV system equipment

3.9**operator**

user of SSSV system equipment

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3.10**orifice**

designed restriction which causes the pressure drop in velocity-type SCSSVs

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3.11**packaging**

enclosure(s) of sufficient structural integrity to protect contents from damage or contamination, including impacts and environmental conditions encountered during the various phases of transport

3.12**qualified part**

part manufactured under a recognized quality assurance programme and, in the case of replacement, produced to meet or exceed the performance of the original part produced by the original equipment manufacturer (OEM)

NOTE ISO 9001 is an example of a recognized quality assurance programme.

3.13**qualified personnel**

personnel with characteristics or abilities, gained through training and/or experience as measured against established requirements, standards or tests, that enable the individual to perform a required function

3.14**redress**

any activity involving the replacement of **qualified parts** (3.12) within the limits described in 5.3.3

3.15**repair**

any activity beyond the scope of redress that includes disassembly, re-assembly and testing, with or without the replacement of qualified parts, and may include machining, welding, heat-treating or other manufacturing operations, that restores the equipment to its original performance

3.16**safety valve landing nipple**

any receptacle containing a profile designed for the installation of an SSSV lock mandrel

NOTE It may be ported for communication to an outside source for SSSV operation.

3.17**safety valve lock mandrel**

retention device used for SSSV equipment

3.18**self-equalizing feature**

SCSSV mechanism which, on initiation of opening sequence of the SSSV, permits the well pressure to automatically bypass the SCSSV closure mechanism

3.19**storage**

act of retaining SSSV system equipment without damage or contamination, after processing is completed and prior to or after field use, including the transport process

3.20**SSSV system equipment**

components which include the **surface-control system** (3.2.4), **control line** (3.1), **SSSV** (3.23), **safety valve lock** (3.17), **safety valve landing nipple** (3.16), flow couplings and other downhole control components

3.21**surface-controlled subsurface safety valve****SCSSV**

SSSV controlled from the surface by hydraulic, electrical, mechanical or other means

3.22**subsurface-controlled subsurface safety valve****SSCSV**

SSSV actuated by the characteristics of the well itself

NOTE These devices are usually actuated by the differential pressure through the SSCSV (velocity type) or by tubing pressure at the SSCSV (high or low pressure type).

3.23**subsurface safety valve****SSSV**

device whose design function is to prevent uncontrolled well flow when closed

NOTE These devices can be installed and retrieved by wireline or pump-down methods (wireline-retrievable) or be an integral part of the tubing string (tubing-retrievable).

[ISO 10432]

3.24**surface control system**

surface equipment including manifolding, sensors, and power source to control the SCSSV

3.25**surface safety valve****SSV**

automatic wellhead valve assembly which closes upon loss of power supply

NOTE Where used in this International Standard, the term is understood to include an SSV valve and SSV actuator.

[ISO 10423]