SLOVENSKI STANDARD
SIST EN ISO 17078-3:2009

01-junij-2009

Industrija za predelavo nafte in zemeljskega plina - Vrtalna in proizvodna oprema - 3. del: Orodja za vgradnjo, demontažo in premikanje ter kljuke za vpenjalne osi s stranskimi žepi (ISO 17078-3:2009)

Petroleum and natural gas industries - Drilling and production equipment - Part 3: Running tools, pulling tools and kick-over tools and latches for side-pocket mandrels (ISO 17078-3:2009)

Erdöl- und Erdgasindustrie - Bohr- und Fördereinrichtungen - Teil 3: Setzgeräte, Fang -/Ziehgeräte, Orientierungswerkzeuge, Verriegelungen für Gasliftventile (ISO 17078-3:2009)

Industries du pétrole et du gaz naturel - Équipement de forage et de production - Partie 3: Outils de mise en place, de dépose, de déviation et de verrouillage pour raccords à poche latérale (ISO 17078-3:2009)

Ta slovenski standard je istoveten z: **EN ISO 17078-3:2009**

ICS:

75.180.10	Oprema za raziskovanje in odkopavanje	Exploratory and extraction equipment

SIST EN ISO 17078-3:2009 **en,fr**

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN ISO 17078-3

April 2009

ICS 75.180.10

English Version

Petroleum and natural gas industries - Drilling and production equipment - Part 3: Running tools, pulling tools and kick-over tools and latches for side-pocket mandrels (ISO 17078-3:2009)

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Foreword

This document (EN ISO 17078-3:2009) 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, 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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by October 2009.

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.

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Endorsement notice

The text of ISO 17078-3:2009 has been approved by CEN as a EN ISO 17078-3:2009 without any modification.

INTERNATIONAL STANDARD

ISO 17078-3

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Petroleum and natural gas industries — Drilling and production equipment —

Part 3: Running tools, pulling tools and kick-over tools and latches for side-pocket mandrels

Industries du pétrole et du gaz naturel — Équipement de forage et de production —

Partie 3: Outils de mise en place, de dépose, de déviation et de verrouillage pour raccords à poche latérale

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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

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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 17078-3 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*.

ISO 17078 consists of the following parts, under the general title *Petroleum and natural gas industries — Drilling and production equipment*:

— *Part 1: Side-pocket mandrels*

— *Part 2: Flow-control devices for side-pocket mandrels*

— *Part 3: Running tools, pulling tools and kick-over tools and latches for side-pocket mandrels*

— *Part 4: Practices for side-pocket mandrels and related equipment*

Introduction

This part of ISO 17078 has been developed by users/purchasers and suppliers/manufacturers of running tools, pulling tools, kick-over tools, and latches used for the installation and retrieval of flow control and other devices in side-pocket mandrels intended for use in the worldwide petroleum and natural gas industry. This part of ISO 17078 is intended to provide requirements and information to all parties who are involved in the specification, selection, manufacture, testing and use of these latches and related tools. Further, this part of ISO 17078 addresses supplier/manufacturer requirements that set the minimum parameters with which suppliers/manufacturers must comply to claim conformity with this part of ISO 17078.

This part of ISO 17078 has been structured to support varying requirements in environmental service classes, design validation, product functional testing and quality control grades. These variations allow the user/purchaser to select the necessary grade for a specific application.

Well environmental service classes. One environmental service class is provided for running tools, pulling tools and kick-over tools, and four environmental service classes are provided for latches. These variations provide the user/purchaser with a range of choices from which to select products to meet varying environmental conditions.

Design validation grades. There are two design validation grades for running tools, pulling tools, kick-over tools and latches that provide the user/purchaser with a range of technical and performance requirements. This ensures that the products supplied according to this part of ISO 17078 will meet the requirements and that the user/purchaser is able to compare these requirements with his or her preference or application and determine whether additional requirements are placed on the supplier/manufacturer.

It is important that users of this part of ISO 17078 be aware that requirements in addition to those outlined herein can be needed for individual applications. This part of ISO 17078 is not intended to inhibit a supplier/manufacturer from offering, or the user/purchaser from accepting, alternative equipment or engineering solutions. This can be particularly applicable where there is innovative or developing technology. Where an alternative is offered, it is the responsibility of the supplier/manufacturer to identify any variations from this part of ISO 17078 and provide details.

Product functional testing grades. There are two product functional testing grades for running tools, pulling tools, kick-over tools and latches that provide the user/purchaser with a range of choices for confirming that products manufactured under this part of ISO 17078 meet the design specifications.

Quality control grades. There are two quality grades for running tools, pulling tools, kick-over tools and latches that provide the user/purchaser with the choice of requirements to meet specific preferences or applications. Additional quality upgrades can be specified by the user/purchaser as supplemental requirements.

In addition to this document, ISO 17078-1 provides requirements for side-pocket mandrels used in the petroleum and natural gas industries. ISO 17078-2 provides requirements for flow-control devices for side-pocket mandrels. ISO 17078-4 provides supplemental aids and guidelines for using these tools.

Petroleum and natural gas industries — Drilling and production equipment —

Part 3: Running tools, pulling tools and kick-over tools and latches for side-pocket mandrels

1 Scope

This part of ISO 17078 provides requirements and guidelines for running tools, pulling tools, kick-over tools and latches used for the installation and retrieval of flow control and other devices to be installed in side-pocket mandrels for use in the petroleum and natural gas industries. This includes requirements for specifying, selecting, designing, manufacturing, quality control, testing and preparation for shipping of these tools and latches. Additionally, it includes information regarding performance testing and calibration procedures.

The processes of installation, retrieval, maintenance and reconditioning of used running, pulling and kick-over tools and latches are outside the scope of this part of ISO 17078. Centre-set and tubing-retrievable mandrel applications are not covered.

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 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality level (AQL) for lot-by-lot inspection*

ISO 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

ISO 3601-3, *Fluid power systems — O-rings — Part 3: Quality acceptance criteria*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

ISO 9000, *Quality management systems — Fundamentals and vocabulary*

ISO 15156 (all parts), *Petroleum and natural gas industries — Materials for use in H_2S-containing environments in oil and gas production*

ISO 17078-1:2004, *Petroleum and natural gas industries — Drilling and production equipment — Side-pocket mandrels*

ISO 17078-2:2007, *Petroleum and natural gas industries — Drilling and production equipment — Flow-control devices for side-pocket mandrels*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ASME BPVC-VIII:2007, *BPVC Section VIII-Rules for Construction of Pressure Vessels Division 1* [1)]

ASME BPVC-IX:2007, *BPVC Section IX-Welding and Brazing Qualifications*

ASTM A370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM D1415, *Standard Test Method for Rubber Property — International Hardness* [2)]

ASTM D2240, *Standard Test Method for Rubber Property — Durometer Hardness*

ASTM E18, *Standard Test Methods for Rockwell Hardness of Metallic Materials*

SAE AMSH6875:1998, *Heat Treatment of Steel Raw Materials* [3)]

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 (for quality-system-related terms not given below) and the following apply.

3.1
acceptance
agreement/acknowledgement that latches and related tool component(s) and/or assembly(ies) can be used without restriction

NOTE Adapted from ISO 17078-1:2004, definition 3.1.

3.2
bluing
application of blue indicating fluid used to determine interference between parts

3.3
certificate of conformance
documentation declaring that a specific running, pulling or kick-over tool or latch meets the requirements of this part of ISO 17078 and the requirements of the functional specification

3.4
center-set mandrel US
centre-set mandrel GB
mandrel
device used to contain a flow-control device in the centre of a tubing string

1) American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990, USA.

2) American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohoken, PA 19428-2959, USA.

3) SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, USA.

3.5
coating
application of a thin film of one material on the surface of another material for various purposes

[ISO 17078-2]

3.6
conveyance
delivery or retrieval system for a flow-control device and associated equipment

3.7
critical length
linear distance in a side-pocket mandrel between the top of the orienting sleeve slot and the face of the pocket, measured perpendicular to the face of the pocket

3.8
date of manufacture
date of manufacturer's final acceptance of finished products

NOTE The date is day-month-year in the format DD-MM-YYYY.

[ISO 17078-1]

3.9
design family
group of products whose configurations, sizes, materials and applications are sufficiently similar that identical design methodologies can be used to establish the design parameters for each product within the family

[ISO 17078-1]

3.10
design method
method, procedure or equations used by the supplier/manufacturer to design a running, pulling or kick-over tool or a latch product

3.11
design validation
process of proving a design by testing to demonstrate conformity of the product to design requirements

3.12
design verification
process of examining the result of a given design or development activity to determine conformity with specified requirements

3.13
deviation
wellbore inclination in degrees from true vertical

3.14
end connections
threads integral to the running, pulling and kick-over tools, male or female, used to connect these tools to the tool string and to connect latches to the flow-control device

3.15
environmental service grade
environmental service class
category of environmental conditions for which the latches and related tools are designed to be used