



# SLOVENSKI STANDARD SIST EN ISO 16070:2004

01-maj-2004

---

**Petroleum and natural gas industries - Downhole equipment - Lock mandrels and landing nipples (ISO 16070:2001)**

Petroleum and natural gas industries - Downhole equipment - Lock mandrels and landing nipples (ISO 16070:2001)

Erdöl- und Erdgasindustrie - Bohrloch-Ausrüstung - Abhängestücke und Landenippel (ISO 16070:2001)

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

Industries du pétrole et du gaz naturel - Equipement de fond de trou - Mandrins a clé d'ancrage et sieges d'ancrage (ISO 16070:2001)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

**Ta slovenski standard je istoveten z: EN ISO 16070:2001**

---

**ICS:**

|           |                                       |                                      |
|-----------|---------------------------------------|--------------------------------------|
| 75.180.10 | Oprema za raziskovanje in odkopavanje | Exploratory and extraction equipment |
|-----------|---------------------------------------|--------------------------------------|

**SIST EN ISO 16070:2004**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 16070:2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 16070**

December 2001

ICS 75.180.10

English version

**Petroleum and natural gas industries - Downhole equipment -  
Lock mandrels and landing nipples (ISO 16070:2001)**

Industries du pétrole et du gaz naturel - Equipement de  
fond de trou - Mandrins à clé d'ancrage et sièges d'ancrage  
(ISO 16070:2001)

Erdöl- und Erdgasindustrie - Bohrloch-Ausrüstung -  
Abhängestücke und Landennippel (ISO 16070:2001)

This European Standard was approved by CEN on 30 September 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN ISO 16070:2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>



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

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

EN ISO 16070:2001 (E)

|                             |
|-----------------------------|
| <b>CORRECTED 2002-09-25</b> |
|-----------------------------|

## Foreword

This document (EN ISO 16070:2001) 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 June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

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

### Endorsement notice

The text of ISO 16070:2001 has been approved by CEN as EN ISO 16070:2001 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

[SIST EN ISO 16070:2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

## Annex ZA (normative)

### Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u>  | <u>EN</u>      | <u>Year</u> |
|--------------------|-------------|---|----------------|-------------|
| ISO 6506-1         | 1999        | Metallic materials - Brinell hardness test - Part 1: Test method  | EN ISO 6506-1  | 1999        |
| ISO 6507-1         | 1997        | Metallic materials - Vickers hardness test - Part 1: Test method  | EN ISO 6507-1  | 1997        |
| ISO 6508-1         | 1999        | Metallic materials - Rockwell hardness test - Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)                        | EN ISO 6508-1  | 1999        |
| ISO 13628-3        | 2000        | Petroleum and natural gas industries - Design and operation of subsea production systems - Part 3: Through flowline (TFL) systems | EN ISO 13628-3 | 2000        |

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 16070:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

# INTERNATIONAL STANDARD

**ISO**  
**16070**

First edition  
2001-12-15

---

---

## **Petroleum and natural gas industries — Downhole equipment — Lock mandrels and landing nipples**

*Industries du pétrole et du gaz naturel — Équipement de fond de trou —  
Mandrins à clé d'ancrage et sièges d'ancrage*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 16070:2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)

[https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-  
eddb58d2e5a8/sist-en-iso-16070-2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)



Reference number  
ISO 16070:2001(E)

© ISO 2001

## ISO 16070:2001(E)

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 16070:2004](https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

© ISO 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing 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.ch](mailto:copyright@iso.ch)  
Web [www.iso.ch](http://www.iso.ch)

Printed in Switzerland



## Contents

|  | Page      |
|--|-----------|
| Foreword.....  | iv        |
| Introduction.....  | v         |
| <b>1 Scope .....</b>   | <b>1</b>  |
| <b>2 Normative references .....</b>  | <b>1</b>  |
| <b>3 Terms and definitions .....</b>   | <b>2</b>  |
| <b>4 Abbreviated terms .....</b>   | <b>4</b>  |
| <b>5 Functional specification.....</b>   | <b>4</b>  |
| 5.1 General.....   | 4         |
| 5.2 Functional characteristics of lock mandrels and landing nipples .....                            | 4         |
| 5.3 Well parameters .....  | 4         |
| 5.4 Operational parameters .....   | 5         |
| 5.5 Environmental compatibility .....  | 5         |
| 5.6 Compatibility with the related well equipment .....  | 5         |
| 5.7 Quality control .....  | 6         |
| 5.8 Design validation .....  | 6         |
| <b>6 Technical specification .....</b>   | <b>6</b>  |
| 6.1 General.....   | 6         |
| 6.2 Technical characteristics of lock mandrels and landing nipples .....                             | 6         |
| 6.3 Design criteria .....  | 7         |
| 6.4 Design verification.....   | 8         |
| 6.5 Design validation.....   | 8         |
| 6.6 Design changes .....   | 11        |
| 6.7 Functional test parameters.....  | 11        |
| 6.8 Optional validation testing .....  | 12        |
| <b>7 Supplier/manufacturer requirements .....</b>  | <b>12</b> |
| 7.1 Documentation and data control .....   | 12        |
| 7.2 User/purchaser documentation .....   | 12        |
| 7.3 Product identification.....  | 14        |
| 7.4 Quality control .....  | 14        |
| 7.5 Functional testing.....  | 21        |
| <b>8 Repair.....</b>   | <b>21</b> |
| <b>Annex A (informative) Lock mandrel operating envelope .....</b>                                   | <b>22</b> |
| <b>Annex B (informative) Example of landing nipple validation test dimensional check sheet .....</b> | <b>23</b> |
| <b>Bibliography.....</b>   | <b>24</b> |

**ISO 16070:2001(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16070 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 4, *Drilling and production equipment*.

The requirements of this International Standard supersede the requirements for lock mandrels and landing nipples specified in ISO 10432:1999.

Annexes A and B of this International Standard are for information only.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**  
SIST EN ISO 16070:2004  
<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>

## Introduction

This International Standard has been developed by users/purchasers and suppliers/manufacturers of lock mandrels and landing nipples intended for use in the petroleum and natural gas industry worldwide. This International Standard is intended to give requirements and information to both parties in the selection, manufacture, testing and use of lock mandrels and landing nipples. Furthermore, this International Standard addresses the minimum requirements with which the supplier/manufacturer is to comply so as to claim conformity with this International Standard.

This International Standard has been structured to allow for grades of increased requirements in quality control and design validation. These variations allow the user/purchaser to select the grade required for a specific application.

There are three quality control grades which provide the user/purchaser the choice of requirements to meet specific preference or application. Quality control grade Q3 is the minimum grade of quality offered by this International Standard. Quality control grade Q2 provides additional inspection and verification steps and quality control grade Q1 is the highest grade provided.

There are three design validation grades which provide the user/purchaser the choice of requirements to meet specific preference or application. Design validation grade V3 is the minimum grade and represents equipment where the validation method has been defined by the supplier/manufacturer. The complexity and severity of the validation testing increases as the grade number decreases.

Users of this International Standard should be aware that requirements above those outlined in this International Standard may be needed for individual applications. This International Standard is not intended to inhibit a supplier/manufacturer from offering, or the user/purchaser from accepting, alternative equipment or engineering solutions. This may be particularly applicable where there is innovative or developing technology. Where an alternative is offered, the supplier/manufacturer should identify any variations from this International Standard and provide details.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 16070:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/72b7decd-5bb6-4396-b104-eddb58d2e5a8/sist-en-iso-16070-2004>