



SLOVENSKI STANDARD SIST EN ISO 11961:2000

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Petroleum and natural gas industries - Steel pipes for use as drill pipe - Specification (ISO 11961:1996)

Petroleum and natural gas industries - Steel pipes for use as drill pipe - Specification (ISO 11961:1996)

Erdöl- und Erdgasindustrien - Stahlrohre zur Verwendung als Bohrröhre - Anforderungen (ISO 11961:1996)

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Industries du pétrole et du gaz naturel - Tubes d'acier pour tiges de forage - Spécifications (ISO 11961:1996)

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77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use

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EUROPEAN STANDARD

EN ISO 11961

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English version

**Petroleum and natural gas industries - Steel pipes
for use as drill pipe - Specification
(ISO 11961:1996)**

Industries du pétrole et du gaz naturel - Tubes
d'acier pour tiges de forage - Specifications
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard ISO 11961:1996 has been prepared by Technical Committee ISO/TC 067 "Materials, equipment and offshore structures for petroleum and natural gas industries" in collaboration with Technical Committee CEN/TC 012 "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of an identical text or by endorsement, at the latest by May 1997, and conflicting national standards shall be withdrawn at the latest by May 1997.

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

Endorsement notice

The text of the International Standard ISO 11961:1996 was approved by CEN as a European Standard without any modification.

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INTERNATIONAL
STANDARD

ISO
11961

First edition
1996-11-01

**Petroleum and natural gas industries —
Steel pipes for use as drill pipe —
Specification**

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*Industrie du pétrole et du gaz naturel — Tubes d'acier pour tiges de
forage — Spécifications*

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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.

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.

International Standard ISO 11961 was prepared by Technical Committee ISO/TC 67, *Materials and equipment for petroleum and natural gas industries*, Subcommittee SC 5, *Casing and tubing*.

Annexes A to C form an integral part of this International Standard.

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Introduction

This International Standard, based on API Spec 5D:1992, *Specification for drill pipe*, includes requirements of various nature. These are identified by the use of certain words or phrases.

- **Shall** is used to indicate that a provision is mandatory.
- **Should** is used to indicate that a provision is not mandatory, but recommended as good practice.
- **May** is used to indicate that a provision is optional.

In addition, in certain cases, this International Standard offers **Alternative requirements**. These offer different options, either:

- **At purchaser's discretion** in which case such option shall be mentioned on the purchase order. These cases are recognized by the use of the words or phrases such as **alternative** or **at purchaser's discretion**.
- **At manufacturer's discretion** in which case such option shall be notified to the purchaser. Such cases are identified by the use of the phrase **at manufacturer's discretion**.
- **By agreement between purchaser and manufacturer**. Such cases are recognized by the use of the phrase **by agreement between interested parties**.

This International Standard, when this phrase is used, intends to

either

waive the application of a requirement (either mandatory or recommended) and leave it to both purchaser and manufacturer to use the requirement or not;

or

offer one (or several) alternative requirement(s), the selection of which is left to both purchaser and manufacturer.

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Petroleum and natural gas industries — Steel pipes for use as drill pipe — Specification

1 Scope

1.1 This International Standard specifies the technical delivery conditions for steel drill pipes suitable for use in drilling and producing operations.

The applicable sizes, masses and end finishes are described in annex A.

1.2 The products described by this International Standard are gathered in two groups as follows:

- Group 1: all grade E drill pipe.
- Group 3: all drill pipe in high strength grades X95, G105 and S135.

1.3 Supplementary requirements, that may be agreed between interested parties, for non-destructive inspection, impact testing of group 1 pipe, alternative temperature of impact testing and test certificates are specified in annex B.

2 Normative references

The following standards include provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid international standards.

ISO 6892:1984, *Metallic materials — Tensile testing*.

ISO 7500-1:1986, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tensile testing machines*.

ISO/TR 9769:1991, *Steel and iron — Review of available methods of analysis*.

API Spec 5D:1992, *Specification for drill pipe*.

ASTM A370-94, *Test Methods and Definitions for Mechanical Testing of Steel Products*.

ASTM E23-94b, *Test Methods for Notched Bar Impact Testing of Metallic Materials*.

ASTM E83-94, *Practice for Verification and Classification of Extensometers*.

3 Definitions

For the purpose of this international Standard, the following definitions apply.

3.1 defect: Imperfection of sufficient magnitude to warrant rejection of the product based on the stipulations of this International Standard.

3.2 drill pipe: Heavy seamless pipe used to rotate bit and circulate the drilling mud; these pipe are coupled together by means of tool joints.

3.3 imperfection: Discontinuity or irregularity in the product detected by methods outlined in this International Standard.

3.4 interested parties: The manufacturer and the purchaser of the products.

3.5 manufacturer: Firm, company or corporation responsible for making the product to warrant that the product conforms to this International Standard. The manufacturer may be either a pipe mill or a processor. The manufacturer is responsible for compliance with all the applicable provisions of this International Standard.

3.6 pipe mill: Firm, company or corporation that operates pipe making facilities.

3.7 processor: Firm, company or corporation that operates facilities capable of heat treating pipe made by a pipe mill.

3.8 seamless pipe: A wrought steel tubular product made without a welded seam, manufactured by hot working steel, and if necessary, by subsequently cold finishing the hot-worked tubular product to produce the desired shape, dimensions, and properties.

3.9 special processes: Final operations which are performed during pipe manufacturing that affect product attributes, except chemistry and dimensions.

NOTE 1 The special processes are heat treatment and, if applicable, cold finishing.

3.10 lot: Those lengths of pipe with the same specified dimensions and grade which are heat treated as part of a continuous operation (or batch), and are of a single heat of steel, or from different heats that are grouped according to a documented procedure which will ensure that the appropriate requirements of this International Standard are met.

4 Information to be supplied by the purchaser

4.1 In placing orders for drill pipe to be manufactured in accordance with this International Standard, the purchaser shall specify the following on the purchase order.

Stipulation	Section
International Standard ISO 11961	—
Quantity	—
Internal-upset, external-upset or internal-external-upset (for welding)	table A.1, column 7
Label-1 or outside diameter	table A.1, column 3
Label-2 or wall thickness	table A.1, column 4
Grade	table A.1, column 6
Length range	7.5, table 6
Delivery date and shipping instructions	—
Inspection by purchaser	annex C

4.2 The purchaser should also state on the purchase order his requirements concerning the following stipulations, which are optional with the purchaser.

Stipulation	Section
Heat treatment of drill pipe	5.2
Heat and supplementary analyses	8.2
Pipe coatings	clause 10
Drill pipe with special threads or end finish	7.9
Pipe ends	7.9
Marking requirements	9.1
Non-destructive inspection (N5 notch)	B.1
Impact testing of group 1	B.3
Alternative temperature for impact testing	B.4
Test certificates	B.2

5 Process of manufacture

5.1 General

The various grades and groups of steel furnished to this International Standard shall be made to a fine grain practice. Steel made to fine grain practice contains one or more grain refining elements, such as aluminium, niobium, vanadium or titanium in amounts intended to result in the steel having a fine austenitic grain size.

Pipe furnished to this International Standard shall be made by the seamless process. Cold drawn drill pipe without appropriate heat treatment is not acceptable.

5.2 Heat treatment

The heat treating process shall be performed according to a documented procedure.

5.2.1 Group 1

Drill pipe shall be normalized or, at the manufacturer's discretion normalized and tempered or quenched and tempered full length. Upset drill pipe shall be heat treated full length after upsetting.

5.2.2 Group 3

Unless otherwise agreed between interested parties, drill pipe furnished to this International Standard shall be quenched and tempered or normalized and tempered. Upset drill pipe shall be heat treated full length after upsetting.