SLOVENSKI STANDARD
SIST EN ISO 14691:2001

01-junij-2001

Petroleum and natural gas industries - Flexible couplings for mechanical power transmission - General purpose applications (ISO 14691:1999)

Petroleum and natural gas industries - Flexible couplings for mechanical power transmission - General purpose applications (ISO 14691:1999)

Erdöl- und Erdgasindustrie - Elastische Kupplungen für mechanische Kraftübertragung - Allgemeine Anwendungen (ISO 14691:1999)

Industries du pétrole et du gas naturel - Accouplements flexibles pour transmission de puissance mécanique - Applications d'usage général (ISO 14691:1999)

Ta slovenski standard je istoveten z: **EN ISO 14691:2000**

ICS:

21.120.20	Sklopke	Couplings
75.180.20	Predelovalna oprema	Processing equipment

SIST EN ISO 14691:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14691

September 2000

ICS 75.180.20

English version

Petroleum and natural gas industries - Flexible couplings for mechanical power transmission - General purpose applications (ISO 14691:1999)

Industries du pétrole et du gas naturel - Accouplements flexibles pour transmission de puissance mécanique - Applications d'usage général (ISO 14691:1999)

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This European Standard was approved by CEN on 17 August 2000.

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.

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

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CORRECTED 2002-05-29

Foreword

The text of the International Standard from Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum and natural gas industries" of the International Organization for Standardization (ISO) has been taken over as a European Standard by 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 March 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

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 the International Standard ISO 14691:1999 has been approved by CEN as a European Standard without any modifications.

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

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.

Publication	Year	Title	EN	Year
ISO 286-2	1988	ISO system of limits and fits - Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts	EN 20286-2	1993
ISO 10441	1999	Petroleum and natural gas industries - Flexible couplings for mechanical power transmission - Special purpose applications	EN ISO 10441	1999

INTERNATIONAL STANDARD

ISO 14691

First edition
1999-11-01

Petroleum and natural gas industries — Flexible couplings for mechanical power transmission — General purpose applications

Industries du pétrole et du gaz naturel — Accouplements flexibles pour transmission de puissance mécanique — Applications d'usage général

Reference number
ISO 14691:1999(E)

Contents

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Printed in Switzerland

Foreword

ISO (the International Organization for Standardization) is a world-wide 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.

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 14691 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for the petroleum and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

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

Introduction

This International Standard is based on the accumulated knowledge and experience of manufacturers and users of power transmission couplings in the petroleum and natural gas industries, but its use is not restricted to these industries.

Users of this International Standard should be aware that further or differing requirements may be needed for individual applications. This International Standard is not intended to inhibit a vendor from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This may be particularly appropriate where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this International Standard and provide details.

This International Standard requires the purchaser to specify certain details and features.

A bullet (●) at the beginning of a clause, subclause or paragraph indicates that either a decision is required or further information is to be provided by the purchaser. This information or decision should be indicated on the data sheets; otherwise it should be stated in the quotation request (enquiry) or in the order.

Petroleum and natural gas industries — Flexible couplings for mechanical power transmission — General purpose applications

1 Scope

1.1 This International Standard specifies the requirements for couplings for the transmission of power between the rotating shafts of two machines for general purpose applications in the petroleum and natural gas industries. Such applications typically require couplings to transmit power at speeds not exceeding 4 000 r/min, between machines in which the first lateral critical speed is above the running speed range (stiff-shaft machines). It may, by agreement, be used for applications outside these limits.

1.2 This International Standard is applicable to couplings designed to accommodate parallel (or lateral) offset, angular misalignment and axial displacement of the shafts without imposing excessive mechanical loading on the coupled machines. Couplings covered include gear (and other mechanical contact types), metallic flexible-element and various elastomeric types. Special types such as clutch, hydraulic, eddy-current, rigid, radial spline and universal joint types, are not covered.

1.3 This International Standard covers design, materials of construction, inspection and testing of couplings and methods of attachment of the coupling to the shafts (including tapered sleeve and other proprietary devices). This International Standard does not define criteria for the selection of coupling types for specific applications.

1.4 It is recommended that, when users fit new couplings to existing equipment which are different from those originally fitted, they consult the manufacturers of the driving or driven equipment.

NOTE 1 In many cases, couplings covered by this International Standard are manufacturer's catalogue items.

NOTE 2 For the following applications, the use of ISO 10441 is recommended :

— large or high-speed machines that may be required to operate continuously for extended periods, are often unspared and are critical to the continued operation of the installation (special purpose applications);

— machines in which the first lateral critical speed is less than the maximum required operating speed (flexible-shaft machines);

— machines where the rotor dynamics are particularly sensitive to coupling unbalance.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid international standards.

ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades, and limit deviations for holes and shafts*.

ISO 1940-1:1986, *Mechanical vibration — Balance quality requirements of rigid rotors — Part 1: Determination of permissible residual unbalance.*

ISO 8821, *Mechanical vibration — Balancing — Shaft and fitment key convention.*

ISO 10441, *Petroleum and natural gas industries — Flexible couplings for mechanical power transmission — Special purpose applications.*

AGMA 9002 - A86, March 1986, *Bores and keyways for flexible couplings (Inch series) Annex A.*

3 Terms and definitions

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

3.1 Definitions of coupling types

3.1.1
mechanical contact coupling
coupling designed to transmit torque by direct mechanical contact between mating parts and accommodate misalignment and axial displacement by relative rocking and sliding motion between the parts in contact

NOTE 1 The contacting parts may be metallic or may be made of self-lubricating non-metallic material.

NOTE 2 This category includes gear couplings (see 3.1.1.1).

3.1.1.1
gear coupling
coupling designed to transmit torque and accommodate angular misalignment, parallel offset and axial displacement by relative rocking and sliding motion between mating profiled gears

3.1.2
metallic flexible-element coupling
coupling that obtains its flexibility from the flexing of thin metallic discs, diaphragms or links

NOTE This category includes the two types given in 3.1.2.1 and 3.1.2.2.

3.1.2.1
metallic diaphragm coupling
coupling consisting of one or more metallic flexible elements in the form of thin circular plates that are attached to one part of the coupling at their outer diameter and the other part at their inner diameter

3.1.2.2
metallic disc coupling
coupling consisting of one or more metallic flexible elements that are alternately attached to the two parts of the coupling, the attachment points being essentially the same distance from the centreline

3.1.3
elastomeric flexible-element coupling
a coupling in which the torque is transmitted through one or several elastomeric elements

NOTE This category includes elastomeric shear (3.1.3.1) and elastomeric compression (3.1.3.2) couplings.

3.1.3.1
elastomeric shear coupling
coupling in which the torque is transmitted through an elastomeric element which is principally loaded in shear

NOTE The element may be in the form of a tyre, a bellows (with one or more convolutions) or a diaphragm. A single such elastomeric element is usually able to accommodate angular misalignment, parallel offset and axial displacement.