SLOVENSKI STANDARD
oSIST prEN ISO 21049:2010

01-maj-2010

Črpalke - Sistemi grednih tesnilk za centrifugalne in rotacijske črpalke (ISO/DIS 21049:2010)

Pumps - Shaft-sealing systems for centrifugal and rotary pumps (ISO/DIS 21049:2010)

Pumpen - Wellendichtungssysteme für Kreiselpumpen und rotierende Verdrängerpumpen (ISO/DIS 21049:2010)

Pompes - Dispositifs d'étanchéité de l'arbre pour pompes centrifuges et rotatives (ISO/DIS 21049:2010)

Ta slovenski standard je istoveten z: prEN ISO 21049

ICS:

21.140	Tesnilke, mašilke	Seals, glands
23.080	Črpalke	Pumps

oSIST prEN ISO 21049:2010 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN ISO 21049

March 2010

ICS 83.140.50; 23.080; 23.100.60

Will supersede EN ISO 21049:2004

English Version

Pumps - Shaft-sealing systems for centrifugal and rotary pumps (ISO/DIS 21049:2010)

Pompes - Dispositifs d'étanchéité de l'arbre pour pompes centrifuges et rotatives (ISO/DIS 21049:2010)

Pumpen - Wellendichtungssysteme für Kreiselpumpen und rotierende Verdrängerpumpen (ISO/DIS 21049:2010)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 12.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (prEN ISO 21049:2010) has been prepared by Technical Committee ISO/TC 115 "Pumps" 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 document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 21049:2004.

Endorsement notice

The text of ISO/DIS 21049:2010 has been approved by CEN as a prEN ISO 21049:2010 without any modification.

DRAFT INTERNATIONAL STANDARD ISO/DIS 21049

ISO/TC **115**/SC **3** Secretariat: **ANSI**

Voting begins on: **2010-03-25**

Voting terminates on: **2010-08-25**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Pumps — Shaft-sealing systems for centrifugal and rotary pumps

Pompes — Dispositifs d'étanchéité de l'arbre pour pompes centrifuges et rotatives

[Revision of first edition (ISO 21049:2004)]

ICS 23.080; 23.100.60; 83.140.50

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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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 21049 was prepared by Technical Committee ISO/TC 115, *Pumps*, Subcommittee SC 3, *Installation and special applications*, in collaboration with Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, SC 6, *Processing equipment and systems*.

This second edition cancels and replaces the first edition (ISO 21049:2004), which has been technically revised.

Introduction

This International Standard is based on the accumulated knowledge and experience of manufacturers and users of equipment in the petroleum, natural gas and chemical 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.

The purpose of this International Standard is to assist purchasers with the selection and operation of mechanical seals for pumps.

In this International Standard, where practical, US Customary units are included in brackets for information.

A bullet (●) at the beginning of a clause or subclause indicates that either a decision is required or further information is to be provided by the purchaser. This information should be indicated on data sheets or stated in the enquiry or purchase order (see examples in Annex C).

Pumps — Shaft-sealing systems for centrifugal and rotary pumps

1 Scope

This International Standard specifies requirements and gives recommendations for sealing systems for centrifugal and rotary pumps used in the petroleum, natural gas and chemical industries. It is applicable mainly for hazardous, flammable and/or toxic services where a greater degree of reliability is required for the improvement of equipment availability and the reduction of both emissions to the atmosphere and life-cycle sealing costs. It covers seals for pump shaft diameters from 20 mm (0,75 in) to 110 mm (4,3 in).

This International Standard is also applicable to seal spare parts and can be referred to for the upgrading of existing equipment. A classification system for the seal configurations covered by this International Standard into categories, types, arrangements and orientations is provided.

This International Standard is a stand-alone seal standard and is referenced normatively in ISO 13709. It is applicable to both new and retrofitted pumps, and to pumps other than ISO 13709 pumps (e.g. ASME B73.1, ASME B73.2 and API 676 pumps).

This International Standard might also be referenced by other machinery standards such as other pumps, compressors and agitators. Users are cautioned that this International Standard is not specifically written to address all of the potential applications that a purchaser may specify. This is especially true for the size envelope specified for ISO 21049 seals. The purchaser and seal vendor shall mutually agree on the features taken from this International Standard and used in the application.

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 7 (all parts), *Pipe threads where pressure-tight joints are made on the threads*

ISO 261, *ISO general-purpose metric screw threads — General plan*

ISO 262, *ISO general-purpose metric screw threads — Selected sizes for screws, bolts, and nuts*

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

ISO 724, *ISO general-purpose metric screw threads — Basic dimensions*

ISO 965 (all parts), *ISO general-purpose metric screw threads — Tolerances*

ISO 7005-1, *Metallic flanges — Part 1: Steel flanges*

ISO 10438 (all parts), *Petroleum, petrochemical and natural gas industries — Lubrication, Shaft-sealing and control-oil systems and auxiliaries*

ISO 13709, *Centrifugal pumps for petroleum, petrochemical and natural gas industries*

ISO 15649, *Petroleum and natural gas industries — Piping*

IEC 60079 (all parts), *Electrical apparatus for explosive gas atmospheres*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

AISI, *Standards, codes and specifications of the American Iron and Steel Institute* [1)]

API RP 520 (all parts), *Sizing, selection, and installation of pressure-relieving devices in refineries* [2)]

API Std 526, *Flanged steel pressure relief valves*

ASME V, *ASME Boiler and pressure vessel code, Section V, Non-destructive examination* [3)]

ASME VIII, *ASME Boiler and pressure vessel code, Section VIII, Rules for the construction of pressure vessels*

ASME IX, *ASME Boiler and pressure vessel code, Section IX, Welding and brazing qualifications*

ASME B1.1, *Unified inch screw threads (UN and UNR thread form)*

ASME B1.20.1, *Pipe threads, general purpose, inch*

ASME B16.11, *Forged fittings, socket-welding and threaded*

ASME B16.20, *Metallic gaskets for pipe flanges — Ring joint, spiral-wound, and jacketed*

ASME B31.3, *Process Piping*

ASME B73.1, *Specification for horizontal end suction centrifugal pumps for chemical process*

ASME B73.2, *Specification for vertical in-line centrifugal pumps for chemical process*

ASME PTC 8.2, *Centrifugal pumps, performance test codes*

AWS D1.1, *Structural welding code — Steel* [4)]

1) Available from the American Iron and Steel Institute: 1140 Connecticut Ave., Suite 705, Washington, D.C. 20036, USA.

2) Available from the American Petroleum Institute, 1220 L Street, NW, Washington, D.C. 20005-4070, USA.

3) Available from the American Society of Mechanical Engineers: Three Park Avenue, New York, NY 10016-5990, USA.