SLOVENSKI STANDARD
oSIST prEN ISO 10437:2009

01-november-2009

Petrokemiļ na industrija ter industrija za predelavo nafte in zemeljskega plina - Parne turbine - Uporaba za posebne namene (ISO/DIS 10437:2009)

Petroleum, petrochemical and natural gas industries - Steam turbines - Special-purpose applications (ISO/DIS 10437:2009)

Erdöl-, petrochemische und Erdgasindustrie - Dampfturbinen - Spezial-Einsatzbereiche (ISO/DIS 10437:2009)

Industries du pétrole, de la pétrochimie et du gaz naturel - Turbines à vapeur - Usage spécial (ISO/DIS 10437:2009)

Ta slovenski standard je istoveten z: prEN ISO 10437

ICS:

27.040	Plinske in parne turbine. Parni stroji	Gas and steam turbines. Steam engines
75.180.20	Predelovalna oprema	Processing equipment

oSIST prEN ISO 10437:2009 en,fr

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN ISO 10437

September 2009

ICS 27.040; 75.180.20

Will supersede EN ISO 10437:2003

English Version

Petroleum, petrochemical and natural gas industries - Steam turbines - Special-purpose applications (ISO/DIS 10437:2009)

Industries du pétrole, de la pétrochimie et du gaz naturel - Turbines à vapeur - Usage spécial (ISO/DIS 10437:2009)

Erdöl-, petrochemische und Erdgasindustrie - Dampfturbinen - Spezial-Einsatzbereiche (ISO/DIS 10437:2009)

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. prEN ISO 10437:2009: E

Contents

Page

Foreword

This document (prEN ISO 10437:2009) 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 document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 10437:2003.

Endorsement notice

The text of ISO/DIS 10437:2009 has been approved by CEN as a prEN ISO 10437:2009 without any modification.

DRAFT INTERNATIONAL STANDARD ISO/DIS 10437

ISO/TC **67**/SC **6**

Secretariat: **AFNOR**

Voting begins on:
2009-09-17

Voting terminates on:
2010-02-17

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

Petroleum, petrochemical and natural gas industries — Steam turbines — Special-purpose applications

Industries du pétrole, de la pétrochimie et du gaz naturel — Turbines à vapeur — Usage spécial

[Revision of second edition (ISO 10437:2003)]

ICS 27.040; 75.180.20

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.

In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

Conformément aux dispositions de la Résolution du Conseil 15/1993, ce document est distribué en version anglaise seulement.

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.

Contents

Page

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 10437 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 6, Processing equipment and systems.

This third edition cancels and replaces the second edition (ISO 10437:2003), which has been technically revised.

Introduction

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 or subclause 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.

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

Petroleum, petrochemical and natural gas industries — Steam turbines — Special-purpose applications

1 Scope

This International Standard specifies the minimum requirements for steam turbines for special purpose applications for use in the petroleum, petrochemical and natural gas industries. These requirements include basic design, materials, fabrication, inspection testing and preparation for shipment. It also covers the related lube-oil systems, instrumentation, control systems and auxiliary equipment. It is not applicable to general-purpose steam turbines, which are covered in API Std 611.

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 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*.

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

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

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

ISO 3744, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*

ISO 6708, *Pipe work components – Definition and Selection of DN*

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

ISO 7005-2, *Metallic flanges — Part 2: Cast iron flanges*

ISO 8068, *Petroleum products and lubricants — Petroleum lubricating oils for turbines (categories ISO-L-TSA and ISO-L-TGA) — Specifications*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

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

ISO 10438, *Petroleum and natural gas industries — Lubrication, shaft sealing and control oil systems for special-purpose applications*.

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

ISO 13691, *Petroleum and natural gas industries — High-speed special-purpose gear units*

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

IEC 60045-1, *Steam turbines — Part 1: Specifications*

IEC 60072, *Dimensions and output series for rotating electrical machines*

IEC 60079, *Electrical apparatus for explosive atmospheres*

IEC 60953, *Rules for steam turbine thermal acceptance tests*

EN 287, *Approval testing of welders — Fusion welding*[1)]

EN 288, *Specification and approval of welding procedures for metallic materials*

API RP 520 PT I, *Sizing, selection, and installation of pressure-relieving systems in refineries, Part I — Sizing and selection*.[2)]

API RP 520 PT II, *Sizing, selection, and installation of pressure-relieving systems in refineries, Part II — Installation*

API Std 526, *Flanged steel pressure relief valves*

API Std 613, *Special-purpose gear units for petroleum, chemical and gas industry services*

API Std 670, *Machine protection systems*

API Std 671, *Special-purpose couplings for petroleum, chemical and gas industry services*

API RP 684, *API Standard Paragraphs Rotordynamic Tutorial: Lateral Critical Speeds, Unbalance Response, Stability, Train Torsionals and Rotor Balancing.*

API RP 686, *Recommended Practices for machinery installation and installation design*

ASME, *Boiler and pressure vessel code, Section V — Nondestructive examination*.[3)]

ASME, *Boiler and pressure vessel code, Section VIII — Pressure vessels*

ASME, *Boiler and pressure vessel code, Section IX — Qualification standard for welding and brazing procedures, welders, brazers, and welding and brazing operators*

ASME B1.1, *Unified screw threads (UN and UNR Thread Form)*

ASME B16.1, *Cast iron pipe flanges and flanged fittings, Class 25, 125 and 250*

---

1) Comité Européen de Normalisation, 36, rue de Stassart, B-1050 Brussels, Belgium.

2) American Petroleum Institute, Publications and Distribution Section, 1220 L Street Northwest , Washington DC 20005, USA.

3) ASME International, 3 Park Avenue, New York, NY 10016-5990, USA.

ASME B16.5, *Pipe flanges and flanged fittings, NPS 1/2 through NPS 24*

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

ASME B16.42, *Ductile iron pipe flanges and flanged fittings, classes 150 and 300*

ASME B16.47, *Large diameter steel flanges NPS 26 through NPS 60*

ASME B17.1, *Keys and keyseats*

ASME PTC 6, *Performance test code 6 on steam turbines*

ASME PTC 20.2, *Overspeed trip systems for steam turbine-generator units*

ASTM A 194, *Standard specification for carbon and alloy steel nuts for bolts for high-pressure or high-temperature service, or both*[4)]

ASTM A 247, *Standard test method for evaluating the microstructure of graphite in iron castings*

ASTM A 278, *Standard specification for gray iron castings for pressure-containing parts for temperatures up to 650 °F (350 °C)*

ASTM A 307, *Standard specification for carbon steel bolts and studs, 60 000 psi tensile strength*

ASTM A 395, *Standard specification for ferritic ductile iron pressure-retaining castings for use at elevated temperatures*

ASTM A 418, *Standard test method for ultrasonic examination of turbine and generator steel rotor forgings*

ASTM A 472, *Standard test method for heat stability of steam turbine shafts and rotor forgings*

ASTM A 536, *Standard specification for ductile iron castings*

AWS D1.1, *Structural welding code — Steel*[5)]

NEMA SM 23, *Steam turbines for mechanical drive service*.[6)]

NFPA 70, *National electrical code*.[7)]

SSPC-SP6/NACE No. 3, *Commercial blast cleaning*.[8)]

---

4) American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.

5) American Welding Society, 550 NW Le Jeune Road, PO Box 351040, Miami, FL 33130, USA.

6) National Electrical Manufacturers Association, 1300 N 17th Street; Suite 1847, Rosslyn, VA 22209, USA.

7) National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, USA.

8) SSPC: The Society for Protective Coatings, 40 24th Street 6th floor, Pittsburgh, PA 15222-4656, USA.