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Irish Standard
I.S. EN ISO 13628-2:2006

Petroleum and natural gas industries - Design and operation of subsea production systems - Part 2: Unbonded flexible pipe systems for subsea and marine applications (ISO 13628-2:2006)

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EN ISO 13628-2:2006/AC

May 2009
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Petroleum and natural gas industries - Design and operation of subsea production systems - Part 2: Unbonded flexible pipe systems for subsea and marine applications (ISO 13628-2:2006/Cor 1:2009)

Industries du pétrole et du gaz naturel - Conception et exploitation des systèmes de production immergés - Partie 2: Systèmes de canalisations flexibles non collées pour applications sous-marines et en milieu marin (ISO 13628-2:2006/Cor 1:2009)

Erdöl- und Erdgasindustrie - Auslegung und Betrieb von Unterwasser-Fördersystemen - Teil 2: Flexible Rohrleitungssysteme mit unverbundenen Auskleidungen für Unterwasser- und meerestechnische Anwendungen (ISO 13628-2:2006/Cor 1:2009)

This corrigendum becomes effective on 13 May 2009 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 13 mai 2009 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 13.Mai 2009 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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INTERNATIONAL STANDARD ISO 13628-2:2006
TECHNICAL CORRIGENDUM 1

Published 2009-04-15

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

Petroleum and natural gas industries — Design and operation of subsea production systems —

Part 2
Unbonded flexible pipe systems for subsea and marine applications

TECHNICAL CORRIGENDUM 1

Industries du pétrole et du gaz naturel — Conception et exploitation des systèmes de production immergés —

Partie 2: Systèmes de canalisations flexibles non collées pour applications sous-marines et en milieu marin

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO 13628-2:2006 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries,* Subcommittee SC 8, *Drilling and production equipment.*

Page 1, Clause 2:

Add the following reference in numerical order after ISO 75-2:

"ISO 148-1, *Metallic materials —- Charpy pendulum impact test — Part 1: Test method*"

Page 2, Clause 2:

Delete "ISO 8457-2, *Steel wire rod — Part 2: Quality requirements for unalloyed steel wire rods for conversion to wire*"

Delete "ISO 8692, *Water quality — Freshwater algal growth inhibition test with unicellular green algae*"

ICS 75.180.10 **Ref. No. ISO 13628-2:2006/Cor.1:2009(E)**

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Add the following reference in numerical order after ISO 6508-1:

"ISO 6892, *Metallic materials — Tensile testing at ambient temperature*"

Page 36, Table 12:

In the first line of data in the column entitled "Test procedure", replace the reference "ISO 8457-2" with "ASTM A751" and delete footnote reference "a".

In the, ninth line of data in the column entitled "Comments", change footnote reference "b".

At the bottom of the table, delete footnotes "a" and "b".

Page 36, Table 12:

Delete the second and third lines of data and replace with the following:

Tensile properties	ISO 6892 [a]	

Add the following footnote "a" to the bottom of Table 12:

[a] For the purposes of this provision, ASTM A370 is equivalent to ISO 6892.

Page 38, 7.2.5.1.1 b):

Replace "ISO 8692" with "ISO 6892".

Add the following Note:

NOTE For the purposes of this provision, ASTM A370 is equivalent to ISO 6892.

Page 38, 7.2.5.1.1 e):

Replace the reference "7.2.4.2.1" with "7.1.4.1.1".

Page 38, 7.2.5.1.4, first and second lines:

Replace "ISO 8692" with "ISO 148-1" twice.

Add the following Note as a separate paragraph after the second sentence:

NOTE For the purposes of this provision, ASTM A370 is equivalent to ISO 148-1.

Add the following reference:

Page 70, Bibliography:

Add the following reference:

[30] ASTM A370, *Test Methods and Definitions for Mechanical Testing of Steel Products*

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National Standards Authority of Ireland

IRISH STANDARD

I.S. EN ISO 13628-2:2006

ICS 75.180.10

PETROLEUM AND NATURAL GAS INDUSTRIES - DESIGN AND OPERATION OF SUBSEA PRODUCTION SYSTEMS - PART 2: UNBONDED FLEXIBLE PIPE SYSTEMS FOR SUBSEA AND MARINE APPLICATIONS (ISO 13628-2:2006)

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English Version

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Industries du pétrole et du gaz naturel - Conception et exploitation des systèmes de production immergés - Partie 2: Systèmes de canalisations flexibles non collées pour applications sous-marines et en milieu marin (ISO 13628-2:2006)

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Ref. No. EN ISO 13628-2:2006: E

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Foreword

This document (EN ISO 13628-2:2006) 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 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 January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This document supersedes EN ISO 13628-2:2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

Endorsement notice

The text of ISO 13628-2:2006 has been approved by CEN as EN ISO 13628-2:2006 without any modifications.

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INTERNATIONAL STANDARD

ISO 13628-2

Second edition
2006-07-15

Petroleum and natural gas industries — Design and operation of subsea production systems —

Part 2: Unbonded flexible pipe systems for subsea and marine applications

Industries du pétrole et du gaz naturel — Conception et exploitation des systèmes de production immergés —

Partie 2: Systèmes de canalisations flexibles non collées pour applications sous-marines et en milieu marin

Reference number
ISO 13628-2:2006(E)

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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 13628-2 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 4, *Drilling and production equipment*.

This second edition cancels and replaces the first edition (ISO 13628-2:2000), which has been technically revised.

ISO 13628 consists of the following parts, under the general title *Petroleum and natural gas industries — Design and operation of subsea production systems*:

— *Part 1: General requirements and recommendations*

— *Part 2: Unbonded flexible pipe systems for subsea and marine applications*

— *Part 3: Through flowline (TFL) systems*

— *Part 4: Subsea wellhead and tree equipment*

— *Part 5: Subsea umbilicals*

— *Part 6: Subsea production control systems*

— *Part 7: Completion/workover riser systems*

— *Part 8: Remotely Operated Vehicle (ROV) interfaces on subsea production systems*

— *Part 9: Remotely Operated Tool (ROT) intervention systems*

— *Part 10: Specification for bonded flexible pipe*

— *Part 11: Flexible pipe systems for subsea and marine applications*

The following parts are under development:

— *Part 12 dealing with dynamic production risers*

— *Part 13 dealing with remotely operated tools and interfaces on subsea production systems*

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Introduction

This part of ISO 13628 is based on API Specification 17J, *Specification for unbonded flexible pip*e, Second edition, November 1999, and the Amendment issued June 2002. This part of ISO 13628 has been technically revised and updated to cater to the needs of the international oil and natural gas industries.

Users of this part of ISO 13628 should be aware that further or differing requirements might be needed for individual applications. This part of ISO 13628 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 applicable where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this part of ISO 13628 and provide details.

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Petroleum and natural gas industries — Design and operation of subsea production systems —

Part 2: Unbonded flexible pipe systems for subsea and marine applications

1 Scope

This part of ISO 13628 defines the technical requirements for safe, dimensionally and functionally interchangeable flexible pipes that are designed and manufactured to uniform standards and criteria. Minimum requirements are specified for the design, material selection, manufacture, testing, marking and packaging of flexible pipes, with reference to existing codes and standards where applicable. See ISO 13628-11 for guidelines on the use of flexible pipes and ancillary components.

This part of ISO 13628 applies to unbonded flexible pipe assemblies, consisting of segments of flexible pipe body with end fittings attached to both ends. This part of ISO 13628 does not cover flexible pipes of bonded structure. This part of ISO 13628 does not apply to flexible pipe ancillary components. Guidelines for bend stiffeners and bend restrictors are given in Annex B.

NOTE 1 Guidelines for other components are given in ISO 13628-11.

This part of ISO 13628 does not apply to flexible pipes that include non-metallic tensile armour wires. Pipes of such construction are considered as prototype products subject to qualification testing.

The applications addressed by this part of ISO 13628 are sweet and sour service production, including export and injection applications. Production products include oil, gas, water and injection chemicals. This part of ISO 13628 applies to both static and dynamic flexible pipes used as flowlines, risers and jumpers. This part of ISO 13628 does not apply to flexible pipes for use in choke-and-kill line applications.

NOTE 2 See API Specification 16C for choke-and-kill line applications.

NOTE 3 ISO 13628-10 provides guidelines for bonded flexible pipe.

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 62, *Plastics — Determination of water absorption*

ISO 75-1, *Plastics — Determination of temperature of deflection under load — Part 1: General test method*

ISO 75-2, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 178, *Plastics — Determination of flexural properties*

ISO 179 (all parts), *Plastics — Determination of Charpy impact properties*

ISO 180, *Plastics — Determination of Izod impact strength*

ISO 306, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

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