

## Aardolie- en aardgasindustrie - Ontwerp en exploitatie van onderzeese productiesystemen - Deel 1: Algemene eisen en aanbevelingen (ISO 13628-1:1999, IDT)

Petroleum and natural gas industries - Design and operation of subsea production systems - Part 1: General requirements and recommendations (ISO 13628-1:1999, IDT)

april 1999  
ICS 75.180.10

Vervangt NEN-EN-ISO 13628-1:1997 Ontw.

Als Nederlandse norm is aanvaard:

- EN ISO 13628-1:1999, IDT
- ISO 13628-1:1999, IDT

Normcommissie 310 008 "Gas- en oliewinning en -productie"

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ICS 75.180.10

English version

Petroleum and natural gas industries - Design and operation of  
subsea production systems - Part 1: General requirements and  
recommendations (ISO 13628-1:1999)

Industries du pétrole et du gaz naturel - Conception et  
exploitation des systèmes de production immergés - Partie  
1: Exigences générales et recommandations (ISO 13628-  
1:1999)

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## Foreword

The text of the International Standard ISO 13628-1:1999 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 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of an identical text or by endorsement, at the latest by August 1999, and conflicting national standards shall be withdrawn at the latest by August 1999.

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**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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 898-1	1988	Mechanical properties of fasteners - Part 1: Bolts, screws and studs	EN 20898-1	1991
ISO 898-2	1992	Mechanical properties of fasteners - Part 2: Nuts with specified proof load values - Coarse thread	EN 20898-2	1993
ISO 13819-1	1995	Petroleum and natural gas industries - Offshore structures - Part 1: General requirements	EN ISO 13819-1	1997

Voorbeelden  
Preview

INTERNATIONAL  
STANDARD

ISO  
13628-1

First edition  
1999-02-15

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

**Part 1:**  
General requirements and recommendations

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

*Partie 1: Exigences générales et recommandations*



Reference number  
ISO 13628-1:1999(E)

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International Organization for Standardization  
 Case postale 56 • CH-1211 Genève 20 • Switzerland  
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Printed in Switzerland



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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 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 13628-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 4, *Drilling and production equipment*.

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: Flexible pipe systems for subsea and marine applications*
- *Part 3: Through flowline (TF) systems*
- *Part 4: Subsea wellhead and tree equipment*
- *Part 5: Subsea control umbilicals*
- *Part 6: Subsea production control systems*
- *Part 7: Workover/completion riser systems*
- *Part 8: Remotely Operated Vehicle (ROV) interfaces on subsea production systems*
- *Part 9: Remotely Operated Tool (ROT) intervention systems*

Annexes A, B, C, D, E and F of this part of ISO 13628 are for information only.

## Introduction

This part of ISO 13628 has been prepared to provide general requirements, recommendations and overall guidance for the user to the various areas requiring consideration during development of a subsea production system for the petroleum and natural gas industries. The functional requirements defined in this part of ISO 13628 will allow alternatives in order to suit specific field requirements. The intention is to facilitate and complement the decision process rather than replace individual engineering judgement and, where requirements are non-mandatory, provide positive guidance for the selection of an optimum solution.

This part of ISO 13628 constitutes the overall subsea production system standard, with the intention that the more detailed requirements for the subsystems are retained in the complementary parts of ISO 13628. However, in some areas (e.g. structures, manifolds, marking) detailed requirements are included herein, as these subjects are not covered in a subsystem standard.

This part of ISO 13628 was developed on the basis of API RP 17A, *Design and Operation of Subsea Production Systems*, and other relevant documents on subsea production systems.

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

## Part 1: General requirements and recommendations

### 1 Scope

This part of ISO 13628 provides general requirements and overall recommendations for development of complete subsea production systems from the design phase to decommissioning. This part of ISO 13628 forms a top-level document to govern other standards dealing with subsystems typically forming a part of a subsea production system.

The complete subsea production system comprises several subsystems necessary to produce hydrocarbons from one or more subsea wells to a given processing facility located offshore (fixed, floating or subsea) or onshore, or to inject water/gas through subsea wells. This part of ISO 13628 and the subsystem standards apply as far as the interface limits described in clause 4.

Specialized equipment, such as split trees and trees and manifolds in atmospheric chambers, are not specifically discussed because of their limited use. However, the information presented is applicable to those types of equipment.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 13628. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 13628 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 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs.*

ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified proof load value.*

ISO 10423, *Petroleum and natural gas industries — Drilling and production equipment — Wellhead and christmas tree equipment.*

ISO 13628-3, *Petroleum and natural gas industries — Design and operation of subsea production systems — Part 3: Through flowline (TFL) systems.*

ISO 13628-4:—<sup>1)</sup>, *Petroleum and natural gas industries — Design and operation of subsea production systems — Part 4: Subsea wellhead and tree equipment.*

<sup>1)</sup> To be published.

ISO 13628-6, *Petroleum and natural gas industries — Design and operation of subsea production systems — Part 6: Subsea production control systems.*

ISO 13819-1, *Petroleum and natural gas industries — Offshore structures — Part 1: General requirements.*

ISO 13819-2, *Petroleum and natural gas industries — Offshore structures — Part 2: Fixed steel structures.*

ANSI/ASME B31.8, *Gas Transmission and Distribution Piping Systems.*

API RP 17C<sup>2)</sup>, *TFL (Trough Flowline) Systems.*

API RP 17G<sup>3)</sup>, *Design and Operation of Completion/Workover Riser Systems.*

ASTM A 193, *Specification for Alloy — Steel and Stainless Steel Bolting Materials for High Temperature Service.*

ASTM A 320, *Specification for Alloy Steel Bolting Materials for Low-Temperature Service.*

### 3 Terms, definitions and abbreviations

For the purposes of this part of ISO 13628, the following terms, definitions and abbreviations apply.

#### 3.1 Terms and definitions

##### 3.1.1

##### **sealine**

flowline, service line, cable, umbilical or pipeline

NOTE For description of pressure and temperature ratings, the definition given in the applicable subsystem standard and other relevant standards and design codes is used.

#### 3.2 Abbreviations

ADS	atmospheric diving suit
API	American Petroleum Institute
BOP	blow-out preventer
BS&W	basic sediment and water
CRA	corrosion-resistant alloy
DCV	directional control valve
DFI	design, fabrication, installation
DFO	documentation for operation
EDP	emergency disconnect package
EFC	European Federation of Corrosion
ESD	emergency shutdown

<sup>2)</sup> For the purposes of this part of ISO 13628, API RP 17C will be replaced by ISO 13628-3 when the latter becomes publicly available.

<sup>3)</sup> For the purposes of this part of ISO 13628, API RP 17G will be replaced by ISO 13628-7 when the latter becomes publicly available.

ESP	electrical submersible pump
FAT	factory acceptance test
FPU	floating production unit
GOR	gas-oil ratio
GRP	glass-fibre-reinforced plastic
HAT	highest astronomical tide level
HAZOP	hazards in operation analysis
HB	Brinell hardness
HIPPS	high integrity pipeline protection system
HPU	hydraulic power unit
HV	Vickers hardness
IMR	inspection, maintenance and repair
IRJ	instrument riser joint
ISO	International Organization for Standardization
LAT	lowest astronomical tide level
LMRP	lower marine riser package (for drilling)
LMV	lower master valve
LRP	lower riser package (for workover)
MIV	methanol injection valve
NACE	National Association of Corrosion Engineers
NDE	nondestructive examination
PC	personal computer
PCDA	plant control and data acquisition system
PCS	production control system
PGB	permanent guide base
PLC	programmable logical controller
PMV	production master valve
PRE	pitting-resistance equivalent
PSD	process shutdown
PSV	production swab valve
PWV	production wing valve

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