

INTERNATIONAL  
STANDARD

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**Mobile and fixed offshore units –  
Electrical installations –**

**Part 4:  
Cables**



Reference number  
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# INTERNATIONAL STANDARD

**IEC**  
**61892-4**

First edition  
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## Mobile and fixed offshore units – Electrical installations –

### Part 4: Cables



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MOBILE AND FIXED OFFSHORE UNITS –  
ELECTRICAL INSTALLATIONS –

Part 4: Cables

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61892-4 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units, in cooperation with SC 18A: Cables and cable installations.

The text of this standard is based on the following documents:

FDIS	Report on voting
18/1052/FDIS	18/1058/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61892 series, published under the general title *Mobile and fixed offshore units – Electrical installations*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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## INTRODUCTION

IEC 61892 forms a series of International Standards intended to enable safety in the design, selection, installation, maintenance and use of electrical equipment for the generation, storage, distribution and utilisation of electrical energy for all purposes in offshore units which are being used for the purpose of exploration or production of petroleum resources.

This part of IEC 61892 also incorporates and coordinates, as far as possible, existing rules and forms a code of interpretation, where applicable, of the requirements of the International Maritime Organisation. It also constitutes a guide for future regulations which may be prepared and a statement of practice for offshore unit owners, constructors and appropriate organisations.

This standard is based on equipment and practices which are in current use but it is not intended in any way to impede development of new or improved techniques.

The ultimate aim has been to produce a set of International standards exclusively for the offshore petroleum industry.

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# MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

## Part 4: Cables

### 1 Scope

This part of IEC 61892 specifies requirements for the choice and installation of electrical cables intended for fixed electrical systems in mobile and fixed offshore units, including pumping or “pigging” stations, compressor stations and exposed location single buoy moorings, used in the offshore petroleum industry for drilling, production, processing and for storage purposes.

The reference to fixed electrical systems includes those that are subjected to vibration due to the movement of the unit, e.g. cables installed on a drag chain, and not those that are intended for repeated flexing. Cables suitable for repeated flexing use are detailed in other IEC specifications, e.g. IEC 60227 and IEC 60245, and their uses on board offshore units are restricted to those situations which do not directly involve exposure to a marine environment, e.g. portable tools, domestic appliances, etc.

The following types and applications of cables are not included:

- optical fibre cables;
- sub-sea and umbilical cables;
- cables supplying downhole pumps;
- data, telecommunication and radio frequency cables.

### 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.

IEC 60038:1983, *IEC standard voltages*<sup>1)</sup>  
Amendment 1 (1994)  
Amendment 2 (1997)

IEC 60092-350:2001, *Electrical installations in ships – Part 350: Shipboard power cables - General construction and test requirements*

IEC 60092-351, *Electrical installations in ships – Part 351: Insulating materials for shipboard and offshore units, power, control, instrumentation, telecommunication and data cables*

IEC 60092-353, *Electrical installations in ships – Part 353: Single and multicore non-radial field power cables with extruded solid insulation for rated voltages 1 kV and 3 kV*

IEC 60092-354, *Electrical installations in ships – Part 354: Single and three-core power cables with extruded solid insulation for rated voltages 6 kV ( $U_m=7,2$  kV); up to 30 kV ( $U_m=36$  kV)*

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<sup>1)</sup> There exists a consolidated edition 6.2 (2002) including IEC 60038:1983 and its Amendments 1 and 2.

IEC 60092-359, *Electrical installations in ships – Part 359: Sheathing materials for shipboard power and telecommunication cables*

IEC 60092-376, *Electrical installations in ships – Part 376: Cables for control and instrumentation circuits 150/250 V (300 V)*

IEC 60228:2004, *Conductors of insulated cables*

IEC 60331-21:1999, *Tests for electric cables under fire conditions – Circuit integrity – Part 21: Procedures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV*

IEC 60331-31:2002, *Tests for electric cables under fire conditions – Circuit integrity – Part 31: Procedures and requirements for fire with shock – Cables of rated voltage up to and including 0,6/1 kV*

IEC 60332-1-2:2004, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-3-22:2000, *Tests on electric cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically mounted bunched wires or cables – Category A*

IEC 60754-1:1994, *Test on gases evolved during combustion of materials from cables – Part 1: Determination of the amount of halogen acid gas*

IEC 60754-2:1991, *Test on gases evolved during combustion of electric cables – Part 2: Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity*  
Amendment 1 (1997)

IEC 61034-2:2005, *Measurement of smoke density of cables burning under defined conditions – Part 2: Test procedure and requirements*

IEC 61892-1:2001, *Mobile and fixed offshore units – Electrical installations – Part 1: General requirements and conditions*

IEC 61892-2, *Mobile and fixed offshore units – Electrical installations – Part 2: System design*

IEC 61892-6, *Mobile and fixed offshore units – Electrical installations – Part 6: Installation*

### **3 Terms and definitions**

#### **3.1**

##### **appropriate authority**

governmental body and/or classification society with whose rules an offshore unit is required to comply

#### **3.2**

##### **braid armour**

covering formed from braided metal wires used to protect the cable from external mechanical effects

#### **3.3**

##### **braid**

covering made of plaited metallic or non-metallic material