

# INTERNATIONAL STANDARD

# IEC 60092-354

Second edition  
2003-06

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## 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)**

*Installations électriques à bord des navires –*

### *Partie 354:*

*Câbles d'énergie unipolaires et tripolaires  
à isolant massif extrudé pour tensions  
assignées 6 kV ( $U_m = 7,2$  kV) à 30 kV ( $U_m = 36$  kV)*

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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)**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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International Standard IEC 60092-354 has been prepared by subcommittee 18A: Cables and cable installations, of IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units.

This second edition cancels and replaces the first edition published in 1994 and constitutes a technical revision.

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

FDIS	Report on voting
18A/243/FDIS	18A/245/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.

This standard forms a part of IEC 60092 *Electrical installations in ships*.

The committee has decided that the contents of this publication will remain unchanged until 2008.  
At this date, the publication will be

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

## **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)**

#### **1 Scope and object**

This part of IEC 60092 is applicable to shipboard and offshore power cables with extruded solid insulation, conductor and core screening, having a voltage rating of 3,6/6 (7,2) kV, 6/10 (12) kV, 8,7/15 (17,5) kV, 12/20 (24) kV, 18/30 (36) kV (see Clause 4) and intended for fixed installations. The voltage rating for shipboard use is limited to 8,7/15(17,5) kV.

The various types of power cables are given in Clause 8. The constructional requirements and test methods are expected to comply with those indicated in IEC 60092-350, unless otherwise specified in this standard.

The object of this standard is:

- to standardize cables whose safety and reliability is ensured when they are installed in accordance with the requirements of IEC 60092-352 for shipboard use
- to lay down standard manufacturing requirements and characteristics of such cables directly or indirectly bearing on safety;
- to specify test methods for checking conformity with those requirements.

NOTE 1 Only radial field cables are covered.

NOTE 2 IEC 61892-4, *Mobile and fixed offshore units – Electrical installations – Part 4: Cables* is under consideration by TC18.

#### **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, *IEC standard voltages*

IEC 60092-350, *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 mobile and fixed offshore units power, telecommunication, and control data cables*

IEC 60092-352, *Electrical installations in ships – Part 352: Choice and installation of cables for low-voltage power systems*

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

IEC 60228, *Conductors of insulated cables*

IEC 60230, *Impulse tests on cables and their accessories*

IEC 60332-3-22, *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 60811 (all parts), *Common test methods for insulating and sheathing materials of electric cables and optical cables*

IEC 60885-2, *Electrical test methods for electric cables – Part 2: Partial discharge tests*