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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13029.1-2025

Replacing GB/T 13029.1-2003

**Electrical installations in ships - Part 1: Choice and installation
of electrical cables
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 13029 "Marine Electrical Installations". GB/T 13029 has already published the following parts.

- Part 1: Cable Selection and Installation (GB/T 13029.1);
- Selection and Laying of Marine Coaxial Flexible Cables (GB/T 13029.2);
- Selection and laying of marine communication cables and radio frequency cables (GB/T 13029.3).

This document supersedes GB/T 13029.1-2003 "Selection and Installation of Cables for Low-Voltage Power Systems of Marine Electrical Installations" and is consistent with...

Compared with GB/T 13029.1-2003, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The scope of application of the standard has been changed (see Chapter 1, Chapter 1 of the 2003 edition);
- Added a requirement for "Cable Type" (see 4.1);
- The voltage ratings for power cables and control instrument cables have been increased

(see 4.2);

---The requirements for the nominal cross-sectional area of conductors have been changed (see 4.3.1, Chapter 5 of the 2003 edition);

---The dimensions of "continuous grounding conductors and equipment grounding connections" have been added (see Table 2);

---Added general requirements for current carrying capacity (see 4.3.2);

---The "Continuous Duty Current Carrying Capacity" requirement has been changed (see 4.3.3, Chapter 6 of the 2003 edition);

---The requirement for "correction factors at different ambient air temperatures" has been changed (see 4.3.4, Chapter 7 of the 2003 edition);

---The requirement for "correction factor for bundled cables" has been changed (see 4.3.6, Chapter 8 of the 2003 edition);

---The "voltage drop" requirement has been changed (see 4.4, Chapter 10 of the 2003 edition);

---The requirement for "Estimation of Lighting Load" has been changed (see 4.5, Chapter 11 of the 2003 edition);

---The requirement for "parallel use of cables" has been changed (see 4.6, Chapter 12 of the 2003 edition);

---The "Circuit Isolation" requirement has been changed (see 4.7, Chapter 13 of the 2003 edition);

---The requirement for a "conductor" has been added (see 4.9);

---The requirements for "insulating materials" have been changed (see 4.10, Chapter 2 of the 2003 edition);

---Added "shielding and core shielding" requirements (see 4.11);

---A "combustion performance" requirement has been added (see 4.14);

---The requirements for "Cable Laying" have been changed (see 4.15, Chapter 15 of the 2003 edition);

---The requirements for "Mechanical Protection" and "Grounding of Cable Metal Sheath and Mechanical Protection" have been changed (see 4.17, Chapter 17 of the 2003 edition and...).

Chapter 18);

---Added bending radius requirements for cables with rated voltages of 3.6/6(7.2)kV and above (see Table 5);

---The requirement for "installation in metal conduits, wiring conduits, or cable trays" has been amended (see 4.21, Chapter 22 of the 2003 edition);

---The requirement for "Installation in non-metallic conduits,, cable trays, pipes, or covers and enclosures" has been amended (see 4.22, 2003 edition).

Chapter 23);

---The requirement for "Installation in a Refrigerated Compartment" has been amended (see 4.24, Chapter 25 of the 2003 edition);

---The "tensile stress" requirement has been changed (see 4.25, Chapter 26 of the 2003 edition);

---The section on "Electrodynamics" (Chapter 27 of the 2003 edition) has been removed;

---The "Special Precautions for Single-Core Cables in AC Lines" has been amended (see 4.26, Chapter 28 of the 2003 edition);

---The "Cable Termination" requirements have been changed (see 4.29, Chapter 31 of the 2003 edition);

---The appendix "Terminology" (Appendix A of the 2003 edition) has been deleted;

This document is equivalent to IEC 60092-352:2005 "Marine electrical installations - Part 352: Selection and installation of cables".

The following minimal editorial changes have been made to this document.

---To harmonize with existing standards, the standard name has been changed to "Marine Electrical Installations - Part 1: Selection and Installation of Cables".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wires and Cables (SAC/TC213).

Introduction

Cables for shipboard fixed electrical systems are widely used in the power supply, control, and instrumentation of shipboard electrical installations, in addition to meeting the requirements of the electrical systems.

In addition to the basic requirements, installation requirements must also be met in the specific environment of a ship. Therefore, it is necessary to establish a selection and installation guidelines for cables used in ship electrical systems.

Standardized system.

GB/T 13029 "Marine Electrical Installations" aims to establish general guidelines for the selection and installation of marine cables, and is proposed to consist of three parts.

constitute.

---Part 1: Cable Selection and Installation. The purpose is to specify the rated voltage (U) of 15kV and below for fixed electrical systems on board.

Requirements for the selection and installation of the downstream cable.

---Part 2: Selection and Installation of Coaxial Flexible Cables. The purpose is to specify the requirements for the selection and installation of marine coaxial flexible cables.

---Part 3: Selection and Laying of Communication and Radio Frequency Cables. The purpose is to specify the selection and laying of marine communication and radio frequency cables.

Selection and laying requirements.

GB/T 13029.1 is a guiding standard for the selection and installation of cables for fixed electrical systems in ships. This document's revision not only conforms to...

This approach is based on my country's actual situation and is conducive to promoting the development of my country's marine cable and shipbuilding industries, as well as aligning with international standards.

Marine electrical installations Part 1: Cable Selection and Installation

1 Scope

This document specifies the basic requirements for the selection and installation of cables with a rated voltage (U) of 15kV and below for fixed electrical systems on board ships.

The fixed systems described in this document include those systems subjected to vibration (due to the vibration of the ship) or motion (due to the motion of the ship), but not...

This includes systems that experience frequent bending. Cables suitable for frequent or continuous bending are specified in detail in other IEC standards, such as...

IEC 60227 and IEC 60245 stipulate that their use on ships is limited to situations where there is no direct exposure to the marine environment, such as portable tools or household appliances.

Electrical appliances.

This document does not include the following types and uses of cables.

---Fiber optic cable;