

ICS 47.020.70
CCS U 60



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

GB/T 10250-2025

Replacing GB/T 10250-2007

**Electrical and electronic installations in ships - Electromagnetic
compatibility(EMC) - Ships with a metallic hull**
(English Translation)

Issued on: April 25, 2025

Implemented on: November 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 General Principles	
5 EMC test plan	
5.1 Purpose	
5.2 Configuration of the Equipment Under Test (EUT)	
5.3 Experimental pretreatment	
5.4 Acceptance criteria	
5.5 Scope of EMC test	
6 Launch Requirements	
6.1 Launch test conditions	
6.2 Emission limits	
7 Immunity requirements	
7.1 Immunity test conditions	
7.2 Minimum immunity requirements	
7.3 System Aspects	
8 Test results and test reports	
Appendix A (Informative) General EMC Planning Procedure	
A.1 Overview	
A.2 General procedures	
A.3 EMC Management	
A.4 Comprehensive EMC Analysis	
A.5 Additional EMC measures	
A.6 EMC test	
Appendix B (Informative) Precautions	
B.1 Applicability	
B.2 General technical measures	
B.3 Special measures for equipment groups A to G	
B.4 Organizational measures	
Appendix C (Informative) EMC Test Report	

Reference

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 10250-2007 "Electromagnetic compatibility of marine electrical and electronic equipment" and is consistent with GB/T 10250-2007.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- The scope of application of the standard has been modified to limit the scope of application to devices on metal hulled ships (see Chapter 1, 2007 Edition, Section 1 chapter);
- Added description of the scope of use of EMC requirements equipment (see Chapter 1);
- Deleted the relevant requirements for the equipment under test (see 3.14 of the 2007 edition);
- Deleted the requirements for protected areas and reference areas (see 3.19 and 3.20 of the 2007 edition);
- Added the definitions of "ground" and "grounding" (see 3.19, 3.20);
- Deleted the definition of "region" (see 3.23 of the 2007 edition);
- Added the definitions of "deck and bridge area", "general distribution area", "specialized distribution area" and "living area", and added the definitions of regional characteristics The definitions were supplemented (see 3.24, 3.25, 3.26, 3.27);
- Added the definition of "field test" and "metal enclosure" (see 3.31, 3.32);
- Added explanation of field test (see 5.1);
- Changed the emission limits for equipment installed in the bridge and deck areas and the emission limits for equipment installed in the general distribution area (see Tables 2 and 3, Tables 2 and 3 of the 2007 edition);
- Changed the minimum immunity requirements (see 7.2, 7.2 of the 2007 edition).

This document is equivalent to IEC 60533:2015 "Electromagnetic compatibility of electrical and electronic equipment on board ships - Metal hull ships".

1 Scope

This document specifies the minimum requirements for electromagnetic compatibility (EMC) of emissions, immunity and performance criteria for electrical and electronic equipment in ships.

This document helps to meet the requirements of SOLAS74 Chapter IV, Regulation 6 and Chapter V, Regulation 17 regarding electromagnetic compatibility. This document was referenced in resolution IMO A.813(19).

The normative part of this document has been adopted as a standard in the EMC series of standards.

This document gives further guidance and recommendations on measurement methods to achieve electromagnetic compatibility of the following electrical and electronic equipment in the following groups of equipment.

- a) Group A. marine navigation and radio communication equipment and systems;
- b) Group B. power generation and transformation equipment;
- c) Group C. Equipment operating with pulsating energy;
- d) Group D. switchgear and controlgear;
- e) Group E. internal communication and signal processing equipment;
- f) Group F. non-electrical parts and equipment;
- g) Group G. Integrated systems.

IEC 60945 is the basic EMC standard for Group A and Group C. The EMC requirements specified in IEC 60945 also apply to.

- Bridge installation equipment;
- Devices close to receiving antennas;
- Equipment that can interfere with the safe navigation and radio communications of ships.

NOTE: The effects on persons exposed to electromagnetic radiation, as well as basic safety requirements such as protection against electric shock and equipment dielectric (strength) tests are not covered in this document.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date

applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

Note: GB/T 4365-2024 Electrical terminology - Electromagnetic compatibility (IEC 60050-161:2021, IDT)

GB/T 2900.83-2008 Electrical terminology - Electrical and magnetic devices (IEC 60050-151:2001, IDT)

IEC 60945 General requirements for maritime navigation and radiocommunication equipment and systems - Test methods and required test results

IEC 61000-4-2 Electromagnetic compatibility test and measurement technology
Electrostatic discharge immunity test

Note: GB/T 17626.2-2018 Electromagnetic compatibility test and measurement technology
Electrostatic discharge immunity test (IEC 61000-4-2:2008, IDT)

IEC 61000-4-3 Electromagnetic compatibility test and measurement technology Radio
frequency electromagnetic field radiation immunity test