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

GB/T 28784.5-2022

Replacing GB/T 7452-2007

**Mechanical vibration - Measurement of vibration on ships - Part 5:
Guidelines for measurement, evaluation and reporting of vibration with
regard to habitability on passenger and merchant ships**

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Table of Contents

Preface	
Introduction	
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
3.1 General	2
3.2 Crew area and crew area	2
4 Measuring instruments	3
4.1 General requirements	3
4.2 Functional verification	3
5 Measurement site	3
5.1 Measurement position	3
5.2 Measuring position and orientation	4
6 Measurement conditions	4
7 Measurement procedures	4
8 ratings	5
8.1 Evaluation value of acceptable vibration	5
8.2 Exceeding the evaluation value of vibration	5
8.3 Beat vibration	6
9 Test report	6
Appendix A (Informative) Frequency Weighting (W m)	7
Appendix B (informative) Example of a report using this document to evaluate ship habitability vibration	10
Reference	11

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 is part 5 of GB/T 28784 "Measurement of Mechanical Vibration on Ships". GB/T 28784 has issued the following

part.

- Part 2. Structural vibration measurement;
- Part 3. Vibration measurement before installation of shipboard equipment;
- Part 4. Measurement and evaluation of ship propulsion plant vibration;
- Part 5. Passenger ships and merchant ships habitability vibration measurement, evaluation and reporting guidelines.

This document replaces GB/T 7452-2007 "Criteria for Measuring, Reporting and Evaluation of Mechanical Vibration Passenger Ships and Merchant Ship Habitability Vibration", and

Compared with GB/T 7452-2007, except for structural adjustment and editorial changes, the main technical changes are as follows.

- Added terms and definitions such as "crew" and "crew" (see Chapter 3);
- Added the content of vibration measurement under dynamic positioning (DP) conditions (see Chapter 6);
- Changed the habitability vibration evaluation value from two upper and lower limit values to a maximum allowable value (see Chapter 8, Chapter 7 of the 2007 edition chapter).

This document is equivalent to ISO 20283-5:2016 "Mechanical Vibration Ship Vibration Measurement Part 5. Habitability Vibration of Passenger Ships and Merchant Ships"

Guidelines for Measurement, Evaluation and Reporting.

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Vessel vibrations can interfere with work or reduce comfort, leading to negative comments from crew and occupants. GB/T 28784 "Mechanical Vibration

Ship Vibration Measurement" puts forward the measurement requirements for quantifying ship vibration, and it is proposed to be composed of five parts.

- Part 1. General Guidelines. The purpose is to propose general requirements and guidelines for ship vibration measurement.
- Part 2. Structural vibration measurement. The purpose is to propose the measurement and diagnostic evaluation of ship structure vibration caused by propulsion installations.

Guidelines for pricing and reporting, specifying corresponding requirements and methods.

--- Part 3.Vibration measurement of shipboard equipment before installation. The purpose is to specify the vibrations generated by different types of shipboard equipment (the vibration

Guidelines, requirements and procedures for the measurement of motion transmitted in ship structures in the form of structure-borne noise.

--- Part 4.Measurement and evaluation of ship propulsion plant vibration. The purpose is to obtain reliable vibration data of ship propulsion system

Guidance on required instrumentation, measurement and data processing procedures, and guidance on the application of specific measurement techniques.

--- Part 5.Passenger ships and merchant ships habitability vibration measurement, evaluation and reporting guidelines. The purpose is to give all passengers and merchant ships

Guidelines for the measurement, evaluation and reporting of habitability vibrations for personnel, especially seafarers.

Vibration data obtained from work in this document can also be used to.

---Compared with the ship manual;

---Compared with other ships;

---Further develop and improve relevant vibration specifications.

Mechanical Vibration Ship Vibration Measurement Part 5.

Vibration measurements of passenger and merchant ship habitability,

Evaluation and Reporting Guidelines

1 Scope

This document gives guidelines for the measurement, evaluation and reporting of habitability vibrations for all persons on board passenger and merchant ships, especially the crew.

The root mean square value of frequency-weighted vibration within the frequency range of 1Hz~80Hz is used as the evaluation value of different areas of the ship.

This document applies to passenger ships and merchant ships with an estimated voyage time of 24 hours or more.

This document specifies the requirements for measuring instruments and measuring procedures in common functional areas, and also includes vibration evaluation for ship habitability.

analysis specifications and guidelines.

The evaluation of low frequency motions of ships that may cause seasickness is specified in ISO 2631-1. For the content related to the vibration of the overall structure of the ship, see ISO 20283-2.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

ring-Vocabulary)

Note. GB/T 2298-2010 Mechanical Vibration, Shock and Condition Monitoring Vocabulary (ISO 2041.2009, IDT)

ISO 2631-1 Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 1. General requirements (Mechanical vibrations)

Note. GB/T 13441.1-2007 Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 1. General requirements (ISO 2631-1. 1997, IDT)

ISO 2631-2 Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 2. Vibration in buildings

Note. GB/T 13441.2-2008 Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 2. Vibration in buildings (1Hz~

80Hz) (ISO 2631-2.2003, IDT)

station)

Note. GB/T 23716-2009 Instruments for Measuring the Human Body's Response to Vibration (ISO 8041.2005, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document as defined in ISO 2041.