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ISO 21984 : 2018

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For comments only

Draft *Indian Standard*

SHIPS AND MARINE TECHNOLOGY – GUIDELINES FOR MEASUREMENT, EVALUATION AND REPORTING OF VIBRATION WITH REGARD TO HABITABILITY ON SPECIFIC SHIPS

ICS 17.160; 47.02.01

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Shipbuilding Sectional Committee, TED 17

NATIONAL FOREWORD

This draft Indian Standard which is identical with ISO 21984: 2018 'Ships and marine technology – Guidelines for measurement, evaluation and reporting of vibration with regard to habitability on specific ships' issued by International Organization for Standardization (ISO), will be adopted by the Bureau of Indian Standards on the recommendations of the Shipbuilding Sectional Committee and approval of the Transport Engineering Division Council.

The text of ISO Standard may be approved for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the edition indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 2041 Mechanical vibration, shock and condition monitoring — Vocabulary	IS/ISO 2041 : 2018 Mechanical vibration, shock and condition monitoring — Vocabulary (First Revision)	Identical
ISO 2631-1 Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements	IS 13276 (Part 1) : 2000 Mechanical vibration and shock - Evaluation of human exposure to whole body vibration: Part 1 General requirements (First Revision)	Identical
ISO 2631-2 Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 2: Vibration in buildings (1 Hz to 80 Hz)	IS/ISO 2631-2 : 2003 Mechanical vibration and shock - Evaluation of human exposure to whole body vibration: Part 2 Vibration in buildings (1 Hz To 80 Hz)	Identical
ISO 8041 Human response to vibration - Measuring instrumentation (This Standard has been revised IS 8041 – 1 : 2017)	IS/ISO 8041-1 : 2017 Human response to vibration - Measuring instrumentation Part 1 General purpose vibration meters	Identical

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. The Bureau of Indian Standards shall not be held responsible for identifying any or all such patent rights.

Annex A, B & C are for information only.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off it shall be done in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (second revision)’.

INTRODUCTION

Shipboard vibration that interferes with duties or reduces comfort is objectionable and often results in adverse comments from crew and passengers. To quantify this vibration, this document gives guidelines for the measurement, evaluation and reporting of habitability for all persons on board specific ships including crew.

Vibration data acquired in accordance with this document are also useful for

— Comparison with ship specifications,

— Comparison with other ships, and

— Further development and improvement of vibration regulations.

SCOPE

This document gives guidelines for the measurement, evaluation and reporting of vibration with regard to habitability for all persons on board ships satisfying one or both of the following conditions:

a) 2-stroke cycle, long-stroke, low-speed diesel engine directly coupled to the fixed-pitch propulsion propeller is installed.

b) Length of deck house (L) is limited as compared with its height (H) (i.e. deck house of around 1, 0 and above in slenderness ratio of H to L). An example of length of deck house (L) and its height (H) for slenderness ratio is shown in Annex A.

Overall frequency-weighted r.ms. vibration values in the frequency range 1 Hz to 80 Hz are given as guidance values for different spaces on ships.

This document is applicable to specific ships with intended voyages of 24 h or more.

This document specifies requirements for the instrumentation and the procedure of measurement in normally occupied spaces. It also contains analysis specifications and guidelines for the evaluation of ship vibration with respect to habitability.

This document is not applicable to machinery spaces, other than engine control rooms, where persons do not stay for prolonged periods of time.

ISO 20283-5 is generally applicable to all ships. Requirements for measurement, evaluation and reporting of vibration with regard to habitability for all persons on board passenger and merchant

ships, including specific ships to which this document may also be applicable can be found in ISO 20283-5. This document is neither complementary nor additional but supplementary to ISO 20283-5. The shipbuilder can select either this document or ISO 20283-5 to apply to any specific ship upon due consideration to individual design conditions of the ship and, if any, experience in building sister or similar ships, and that particular selection is intended to be agreed on by the ship owner.

The evaluation of low-frequency ship motion which can result in motion sickness is covered by ISO 2631-1. For the evaluation of the global structural vibration of a ship, however, see ISO 20283-2.

FOR COMPLETE TEXT OF THE DOCUMENT KINDLY REFER ISO 21984 : 2018 or CONTACT:

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