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

GB/T 12916-2024

Replacing GB/T 12916-2010

Specification for marine metallic propeller

船用金属螺旋桨技术条件

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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 12916-2010 "Technical Specifications for Marine Metal Propellers": Compared with GB/T 12916-2010, except for the structure In addition to adjustments and editorial changes, the main technical changes are as follows:

- a) The material names in propeller materials have been changed (see 5:3, 4:3 of the:2010 edition);
- b) Added technical requirements for stainless steel propellers (see 5:3, 6:10:2, 6:10:3);
- c) The roughness of the shaft hole after propeller machining has been changed (see 5:4:2, 4:4:2 of the:2010 edition);
- d) Added the requirement that the section radius of the propeller section width, local pitch and section thickness should be measured (see 5:5:1);
- e) Added requirements for the control position of the propeller local pitch measurement point (see 5:5:1);
- f) The geometric tolerance requirements for propeller blade pitch have been changed (see 5:5:1, 4:5:1 of the:2010 edition);
- g) The minimum tolerances for propeller radius, local pitch, cross-sectional pitch, blade pitch and overall pitch are increased (see 5:5:1);
- h) Corrected the error in the formula for calculating the minimum weight of the propeller in static balance (see 6:2:1, 6:2:2, 5:2:1, 5:2:2);
- i) Corrected the error in the propeller balancing fixture friction torque formula (see 6:2:3, 5:2:3 of the:2010 edition);
- j) The weight requirement for qualified counterweight in the propeller vertical balance test method has been changed (see 6:2:5, 5:2:5 of the:2010 edition);
- k) Added the requirements for dynamic balancing test of high-speed propellers (see 6:3);

l) Added the requirements for completed propeller weight control (see 6:11): Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the responsibility for identifying patents: This document is proposed and coordinated by the National Technical Committee for Standardization of Marine Machinery (SAC/TC137): This document was drafted by: Wuhan Heavy Industry Casting and Forging Co., Ltd: and China Shipbuilding Industry Corporation Comprehensive Technical and Economic Research Institute: The main drafters of this document are: Liu Qijun, Guo Xiongbai, Sun Meng, Wang Maochun, Lai Junxing, Xu Bin, Gao Xuetang, Yu Songlin, Qin Pengtao, and Yang Chun: This document was first issued in:1991, revised for the first time in:2010, and this is the second revision: Technical requirements for marine metal propellers

1 Scope

GB/T 12916-2024 is the Chinese national standard on specification for marine metallic propeller, in the field of shipbuilding and marine structures. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 August 2024. Classification: ICS 47.020.20, CCS U 48. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the technical requirements, inspection methods, marking, packaging, storage and transportation of marine metal propellers (hereinafter referred to as propellers): This document is applicable to the manufacture of integral and combined fixed-pitch propellers, and shall be used as a reference for the manufacture of adjustable-pitch propellers:

2 Normative references

The contents of the following documents constitute the 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:

GB/T 1176-2013 Cast copper and copper alloys

GB/T 2100 General purpose corrosion resistant steel castings

GB/T 7233:1-2023 Ultrasonic testing of steel castings Part 1: General purpose steel castings GB/T 7727:

3 Terms and definitions

The terms and definitions defined in GB/T 7727:3 and the following apply to this document:
3:

- 1 Propeller radius radius of propeler The radius of the circle that the propeller blade tip traces when it rotates: 3:
- 2 Radius of blade section The radius of the intersection of the propeller blade and the coaxial cylindrical surface on the propeller: 3:
- 3 Width of blade section The developed width of the intersection of the propeller blade and the coaxial cylindrical surface: 3:4 local pitch propelerlocalpitch The product of the axial height difference between two points at different positions with a radial angle of β at the same cross-sectional radius on the pressure surface of the propeller blade and $(360/\beta)$: 3:
- 5 Pitch of blade section The arithmetic mean of the local pitch values on the intersection surface between the propeller blade and the coaxial cylindrical surface: