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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 18669-2025

Replacing GB/T 32969-2016

Steel for ship anchor chain and offshore mooring chain cables

船用锚链和系泊链钢

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 "Directives for standardization - Part

1.Rules for the structure and drafting of standardizing documents". This document is a consolidated revision of GB/T 18669-2012 and GB/T 32969-2016. It replaces GB/T 18669-2012 "Steel bars for ship anchor chain" and GB/T 32969-2016 "Steel for offshore mooring chain cables". In addition to structural adjustments and editorial changes, compared to GB/T 18669-2012 and GB/T 32969-2016, the main technical changes are as follows: - The scope has been changed. The grades and codes for Grade 4 anchor chain steel have been added, as have grades and codes for Grade 6 steel for offshore mooring chain cables (see Chapter 1 of this Edition; Chapter 1 of GB/T 18669-2012 and Chapter 1 of GB/T 32969-2016); - The grades and codes have been changed (see Chapter 4 of this Edition; Chapter 4 of GB/T 32969-2016); - The designation method has been deleted (see Chapter 4 of GB/T 18669-2012); - The end shape has been changed (see

6.3 of this Edition;

5.3.3 of GB/T 18669- 2012 and

6.3 of GB/T 32969-2016); - The chemical composition has been changed (see Tables 3 and 4 of this Edition; Table 2 of GB/T 18669-2012 and Table 3 of GB/T 32969-2016); - Manufacturing method has been changed (see

7.2 of this Edition;

6.2 of GB/T 18669-2012 and

7.2 of GB/T 32969-2016); - Delivery condition has been changed (see

7.3 of this Edition;

6.3 of GB/T 18669- 2012 and

7.3 of GB/T 32969-2016); - Mechanical properties have been changed (see Tables 6 and 7 of this Edition; Table 3 of GB/T 18669-2012 and Table 5 of GB/T 32969-2016); - Macro-magnification has been changed (see

7.6 of this Edition;

7.7 of GB/T 32969- 2016); - Non-metallic inclusions have been changed (see

7.7 of this Edition;

1 Scope

GB/T 18669-2025 is the Chinese national standard on steel for ship anchor chain and offshore mooring chain cables, in the field of metallurgy. 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 30 June 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2026. Classification: ICS 77.140.70, CCS H 44. 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 grades and codes, ordering contents, dimensions, appearance, weight, technical requirements, test methods, inspection rules, packaging, marking and quality certificates for steel for ship anchor chain (grades M2, M3, M4) and steel for offshore mooring chain cables (grades R3, R3S, R4, R4S, R5, R6). This document is applicable to hot-rolled steel for ship anchor chain with a nominal diameter of 13 mm~225 mm and hot-rolled steel for offshore mooring chain cables with a nominal diameter of 30 mm~250 mm for floating production systems, semi- submersible drilling platforms, single-point mooring chain structures, floating production storage and offloading vessels and other marine development facilities (hereinafter referred to as round steel).

2 Normative references

The following referenced documents are indispensable for the application of this document.

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 222, Permissible tolerances for chemical composition of steel products

GB/T 223.5, Steel and iron -- Determination of acid-soluble silicon and total silicon content -- Reduced molybdosilicate spectrophotometric method

GB/T 223.9, Iron, steel and alloy -- Determination of aluminium content -- Chrome azurol S photometric method

GB/T 223.11, Iron, steel and alloy -- Determination of chromium content -- Visual titration or potentiometric titration method

GB/T 223.14, Methods for chemical analysis of iron, steel and alloy. The N-benzoyl-N-phenylhydroxylamine extraction photometric method for the determination of vanadium content

GB/T 223.17, Methods for chemical analysis of iron, steel and alloy -- The diantipyrylmethane photometric method for the determination of titanium content

GB/T 223.23, Iron, steel and alloy -- Determination of nickel content -- The temperature

GB/T 229, Metallic materials - Charpy pendulum impact test method

GB/T 231.1, Metallic materials -- Brinell hardness test -- Part

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 steel for ship anchor chain Round steel used in the manufacture of ship anchor chains.

3.2 steel for offshore mooring chain cables Round steel used in the manufacture of mooring chains.

3.3 black surface steel Hot rolled or annealed material with unpeeled surface.

3.4 flake steel Round steel that has been peeled by a grinding wheel or peeled by turning.

4 Grades and codes

Round steel is divided into different grades and codes according to its tensile strength index, see Table 1.

5 Ording contents

Contracts or orders for goods ordered under this document must include at least the following.

a) Reference to this document;

b) Product name;

d) Specification;

e) Weight (or quantity);

f) Surface finish, e.g., black surface steel or flake steel;

g) Heat-treated finish, e.g., hot-rolled or annealed;

h) Special requirements.

6 Dimensions, shape, weight

6.1 Dimensions, shapes and tolerances The dimensions, shape and permissible deviation of round steel shall comply with the provisions of Table