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

**GB/T 44916-2024**

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**Ships and marine technology - Gate valves for use in low  
temperature applications - Design and testing requirements**

船舶和海上技术 船用超低温闸阀 设计与试验要求

**(English Translation)**

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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 is required.

This document is equivalent to the international standard ISO 19037:2019 "Ships and offshore technology - Design and testing of cryogenic gate valves for ships" Require".

The following minimal editorial changes were made to this document.

- Corrected the typographical errors in the international standards and modified some standard names in Chapter 2;
- Corrected the typographical errors in the international standards and revised the density of nitrogen in Table 4;
- Corrected the typographical errors in the international standard, changing 5.5.1.4 and 5.5.1.5 to the next level of 5.5.1.3;
- Corrected the typographical errors in the international standard and modified the item numbers of c) and d) in 7.2.3;
- Corrected the printing errors in the international standards and modified the chapter and article numbers mentioned in each item of Article 7.9.3.

## 1 Scope

This document specifies the design, manufacture and maintenance of ultra-low temperature gate valves for marine use with ultra-low leakage in ultra-low temperature environments (-196 °C ~ -50 °C).

Manufacturing and testing requirements.

## 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.

ISO 5208 Industrial valves-Pressure testing of metallic valves Note. GB/T 13927-2022 Industrial valve pressure test (ISO 5208:2015, MOD) ISO 5209 General purpose industrial valves-Marking Note. GB/T 12220-2015 Industrial valve marking (ISO 5209:1977, MOD) ISO 28921-1 Industrial valves - Isolation valves for cryogenic use - Part 1: Design, manufacture and product testing (Industrial valves-Isolating valves for low-temperature applications-Part 1: Design, manufacturing and production testing) API 598.2016 Valve Inspection and Testing API 600.2015 Steel Gate Valves, Flanged and Butt-welded Ends and Bolted Bonnets Welding Ends ASME B1.5 Acme Screw Threads ASME B1.8 Stub Acme Screw Threads ASME B1.20.1 Pipe Threads, General Purpose (Inch) ASME B16.5 Pipe Flanges and Flanged Fittings ASME B16.10 Valve structure dimensions (Face-to-Face and End-to-End Dimensions of Valves) ASME B16.11 Forged Fittings, Socket-Welding and Threaded ASME B16.25 Butt-welding Ends ASME B16.34.2017 Valves-Flanged, Threads, and Welding End Connections End ASME B46.1 Surface Texture (Surface Roughness, Waviness and Pattern Direction) Waviness, and Lay]] ASME B16.47 Large Diameter Steel Flange. Metric/Imperial Standard for Nominal Pipe Diameter NPS26~NPS60 Steel Flanges. NPS 26 through NPS 60 Metric/Inch Standard) ASME Sec.V Nondestructive Examination ASME Sec.VIII Div.1.2018 Pressure Vessels ASTM A53 Black hot-dip galvanized welded seamless steel pipe Welded and Seamless ASTM A105/A105M Forgings, Carbon Steel, for Piping Components