



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

GB/T 40515-2021

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

Issued on: August 20, 2021

Implemented on: March 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 of Standardization Documents" Drafting.

The translation method used in this document is equivalent to the international standard ISO 18139.2017 "Design and Design of Ultra-Cryogenic Globe Valves for Ships and Offshore Technology

Test requirements".

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows.

---GB/T 12220-2015 industrial valve mark (ISO 5209.1977, MOD)

This document has made the following editorial changes.

--- Supplement "ASTM A105/A105M", "ASTM A216/A216M", "ASTM A312/A312M" and "ASTM A358/

"A358M" four normative references are omitted from the original standard.

--- In Table 2, the "Class" column was changed to the "PN (Class)" column, and the table note was added for the convenience of our country's use.

--- To ensure the rationality of the standard structure, the "6.9.4 mark" in the original text was changed to "7 mark".

This document was proposed and managed by the National Marine Machinery Standardization Technical Committee (SAC/TC137).

Drafting organizations of this document. China Shipbuilding Industry Comprehensive Technology and Economic Research Institute, Shuangheng Valve Group Co., Ltd., China Merchants Cruise Research Institute

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1 Scope

This document specifies the design, manufacturing and test requirements for marine ultra-low temperature globe valves in ultra-low temperature environments (-196 degrees C~-50 degrees C).

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

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

This document.

ISO 5209 General purpose industrial valve marking
(Generalpurposeindustrialvalves-Marking)

ISO 28921-1 Industrial valves cryogenic isolation valves Part 1.Design, manufacturing and product testing (Industrialvalves-

Isolatingvalvesforlow-temperatureapplications-Part
1.Design,manufacturingandproduction tes-
ting)

ASMEB1.5 trapezoidal thread (AcmeScrewThreads)

ASMEB1.8 short-tooth trapezoidal thread (StubAcmeScrewFlangedFittings)

ASMEB16.5 pipe flanges and flange accessories (PipeFlangesandFlangedFittings)

ASMEB16.10 valve structure size (Face-to-FaceandEnd-to-EndDimensionsofValves)

ASMEB16.11 Socket-welding and threaded forged pipe fittings (ForgedFittings,
Socket-WeldingandThreaded)

ASMEB16.25 Butt-weldingEnds

ASMEB16.34 Valves connected by flanges, threads and welding ends (Valves-Flanged,
Threads, andWeldingEnd)

ASMEB16.47 Large Diameter Steel Flanges (LargeDiameterSteelFlanges)

ASMEB46.1 Surface characteristics (surface roughness, waviness and pattern direction)
(SurfaceTexture(SurfaceRoughness,
Waviness,andLay))

ASTMA105/A105M Standard Specification for Carbon Steel Forgings for Pipes (Standard
Specification for CarbonSteel

ForgingsforPipingApplications)

ASTMA182/A182M Forged or rolled alloy steel and stainless steel pipe flanges, forged pipe fittings, valves and components (Forgedor

RoledAloy-SteelPipeFlanges,ForgedFittingsandValvesandPartsforHigh-temperatureService)

ASTMA194/A194M Carbon steel and alloy steel nuts for high temperature or high pressure

or high temperature and high pressure bolts (Carbon and Alloy Steel

Nuts and Bolts for High-Pressure and High-Temperature Service)

ASTM A216/A216M Standard Specification for High Temperature Fusible Carbon Steel Castings (Standard Specification for Steel Castings

Carbon Suitable for Fusion Welding, for High-Temperature Service)

ASTM A312/A312M seamless, welded and heavily cold-worked austenitic stainless steel pipe (Standard Specification for

Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes)

ASTM A320/A320M alloy steel and stainless steel bolt material for low temperature (Alloy Steel Bolting Material for Low-

Temperature Service)

ASTM A350/A350M Carbon steel and low alloy steel forgings (Forgings, Carbon and Low-Alloy Steel, Requiring Notch Toughness Testing for Piping Components)