

ICS 47.020.05

CCS A 29



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

GB/T 4948-2025

Replacing GB/T 4948-2002

Sacrificial anode of aluminum alloy

铝合金牺牲阳极

Issued on: April 25, 2025

Implemented on: August 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Symbols	2
5 Classification, model and specification	2
6 Requirement	15
7 Test methods	17
8 Inspection rules	18
9 Marking, packaging, transportation and storage	20
Appendix A (Normative) Long-term test method for electrochemical performance of sacrificial anode	21

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 4948-2002 "Aluminum-zinc-indium alloy sacrificial anodes". Compared with GB/T 4948-2002, except for the structural adjustment In addition to the integration and editorial changes, the main technical changes are as follows.

- a) The applicable scope of aluminum anodes has been changed (see Chapter 1, Chapter 1 of the 2002 edition);
- b) Added a chapter on "Symbols" (see Chapter 4);
- c) The classification method of aluminum anodes has been changed (see 5.1, 4.1 of the 2002 edition);
- d) The model representation method of aluminum anodes has been changed (see 5.2, 4.2 of the 2002 edition);
- e) Added the structural types and parameters of bolted aluminum anodes for liquid tanks (see Table 7 and Figure 6);
- f) Added the structure type and parameters of bracelet-type aluminum anode for pipelines (see Table 14 and Figure 12);

- g) The raw material composition requirements for aluminum anodes have been changed (see 6.1, 5.1 of the 2002 edition);
- h) The chemical composition and electrochemical performance requirements of the three aluminum anodes have been changed (see 6.2 and 6.3, 5.2 and 5.3 of the 2002 edition);
- i) Added the surface cold insulation requirements for aluminum anodes (see 6.4.4);
- j) Changed the surface treatment requirements for aluminum anode iron feet (see 6.5.2, 5.5.2 of the 2002 edition);
- k) The dimensional deviation requirements for aluminum anodes have been changed (see 6.7.2, 5.7.2 of the 2002 edition);
- l) Added requirements and test methods for internal defects of aluminum anodes (see 6.8 and 7.7);
- m) The number of samples and requirements for aluminum anode inspection have been changed (see 8.2.3 and 8.3.4, 7.2.3 and 7.2.4 of the 2002 edition);
- n) The method for determining the contact resistance between the sacrificial anode body and the iron pin has been deleted (see Appendix A of the 2002 edition).

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 was proposed and coordinated by the National Technical Committee for Standardization of Marine Vessels (SAC/TC12).

This document was drafted by: Luoyang Ship Materials Research Institute (725th Institute of China Shipbuilding Industry Corporation).

The main drafters of this document are: Ma Li, Sun Mingxian, Zhang Haibing, Zhao Yongtao, Li Weili, Xing Shaohua, Zhang Yihan, Wang Hongren, Lin Cunguo, Xu Likun, Zheng Guohua, Liu Zhaohui, Liu Guangyi, Yan Yonggui, and Qu Benwen.

This document was first issued in 1985, revised for the first time in 2002, and this is the second revision.

Aluminum alloy sacrificial anode

1 Scope

This document specifies the classification, model and specification, requirements, test methods and inspection rules of aluminum alloy sacrificial anode (hereinafter referred to as "aluminum anode").

As well as marking, packaging, transportation and storage.

This document is applicable to corrosive media such as seawater, fresh water (resistivity

not exceeding 500ohm-cm), sea mud, seabed sand and gravel, and produced water from oil and gas fields Design, production and application of aluminum anodes for cathodic protection in industrial fields such as ships, port and marine engineering facilities, seawater cooling water systems, storage tanks and pipelines The design, production and inspection of aluminum anodes for cathodic protection of other steel structures can be used as a reference.

2 Normative references

GB/T 470-2008

GB/T 700

GB/T 712

GB/T 728-2020

GB/T 1196-2023

GB 1499.1

GB 1499.2

GB/T 3499-2023

GB/T 4949

GB/T 4950-2021

GB/T 7999

GB/T 8923.1-2011

GB/T 17395

GB/T 17848

GB/T 27677-2017

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

The actual amount of electricity consumed per unit mass of sacrificial anode is measured.