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

中华人民共和国国家标准

GB/T 4948-2002

Replace GB/T 4948-1985

Sacrificial anode of Al-Zn-In series alloy

铝—锌—铟系合金牺牲阳极

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Foreword

This standard is the revision to *Sacrificial Anode of Aluminum-Zinc-Indium Alloy* of GB/T 4948—1985.

The main technological differences between the Standard and GB/T 4948—1985 Standard are as follows:

—Norms and models of aluminum-zinc-indium series alloy sacrificial anode for the cathodic protection of storage tank sedimentation water part, seawater cooling water system, etc have been added;

—Raw material selection has been amended according to corresponding new version standard, and the purity requirements on raw material have been enhanced;

—New material of efficient aluminum alloy sacrificial anode has been added;

—Items and methods of type inspection and delivery inspection for sacrificial anode products have been regulated;

—Deviation requirements of weight and size have been regulated;

—*Metallographic structure of Aluminum-Zinc-Indium Alloy Sacrificial Anode* of Annex A and *Electrochemical Performance Test Methods of Sacrificial Anode Continuous Current* of Annex C in the original standard have been deleted.

This standard will replace GB/T 4948-1985 from the date of its implementation.

Annex A of this standard may be regarded as normative Annex.

The standard is proposed by China State Shipbuilding Corporation.

The standard is under jurisdiction of by National Technical Committee on Sea-going Ships of Standardization Administration of China Ship Material Sub-technical Committee

China State Shipbuilding Corporation Luoyang Ship Material Research Institute is responsible for drafting this standard.

Main drafters of this standard: Sun Mingxian, Chen Xuli, Wu Jianhua, Li Guinian, Hou Peicheng, Zhu Yunlong and Wang Yuanzhi.

This standard is first released in February 1985.

Aluminum-zinc-indium Alloy Sacrificial Anode

1 Scope

This standard specifies the specifications and models, requirements, test methods, inspection rules, designation, packaging, transportation and storage of aluminum-zinc-indium series alloy sacrificial anode (hereinafter referred to as sacrificial anode).

This standard is applicable to the design, production and inspection of sacrificial anode used as cathodic protection for industries such as ship, harbor works, ocean engineering facilities, cooling water system and storage tank sedimentation water part in seawater medium. The design, production and inspection of sacrificial anode used as cathodic protection for other steel structure in corrosive medium such as seawater, brackish water and sea mud, etc, can be taken as reference for use.

2 Normative References

The provisions of the following documents become provisions of this standard after being referenced. For dated reference documents, all later amendments (excluding corrigenda) and versions do not apply to this standard; however, any parties that come to an agreement under this standard are encouraged to consider adopting the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 470-1997	Zinc ingots (eqv ISO 752: 1981)
GB/T 700-1988	Carbon structural steels
GB/T 728-1998	Ingot tin
GB/T 1196-1993	Unalloyed aluminum ingots for remelting
GB 1499-1998	Hot rolled Ribbed steel bars for the reinforcement of concrete
GB/T 2524-1981	Sponge titanium
GB/T 3499-1995	Unalloyed magnesium ingots for remelting
GB/T 4949-1985	Sacrificial anode of Al-Zn-In system alloy; Chemical analysis
GB/T 8733-2000	Aluminium alloy ingots for casting

GB/T 17395-1998 Dimensions, shapes, masses and tolerances of seamless steel tubes (neq ISO 1127: 1992, neq ISO 4200: 1991; ISO 5252: 1991)

GB/T 17848-1999 Test methods for electrochemical properties of sacrificial anodes

CB/T 3764-1996 Metal plating and chemical coating layer thickness series and quality requirements

YS/T 72-1994 Cadmium ingot

YS/T 257-1998 Indium

3 Definitions

For the purpose of this standard, the following definitions apply.

3.1

Practical current capacity

Take actual measurement on electric quantity generated by sacrificial anode consuming unit mass, unit: Ah/kg.

3.2

Theoretical current capacity

Calculate electric quantity generated by sacrificial anode consuming unit mass according to Faraday's law, unit: Ah/kg.

4 Classifications and designation

4.1 Classifications

Sacrificial anode is divided to five types based on its materials, including aluminum-zinc-indium-cadmium alloy sacrificial anode, aluminum-zinc-indium-stannum alloy sacrificial anode, aluminum-zinc-indium-silicon alloy sacrificial anode, aluminum-zinc-indium-stannum-magnesium alloy sacrificial anode, aluminum-zinc-indium-magnesium-titanium alloy sacrificial anode. Sacrificial anode used as cathodic protection for ships can be divided to three types, including single iron stand welded type sacrificial anode, and double iron stand welded type sacrificial anode, bolted connection type sacrificial anode.



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