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PROFESSIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国行业标准

TB/T 2374-2008
Replace TB/T 2374-1999

Welding Material of Atmospheric Corrosion Resisting Steel and Stainless Steel for Rolling Stock

铁道车辆用耐大气腐蚀钢及不锈钢焊接材料

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Contents

Foreword

This Standard refers to AWS A5.5-2006 *Specification for Low-Alloy Steel Electrodes for Shielded metal Arc Welding* and AWS A5.9-2006 *Specification for Bare SS welding Electrodes and Rods*.

This Standard will replace TB/T 2374-1999 *Welding material of atmospheric corrosion resisting steel and stainless steel for rolling stock*.

Comparison with TB/T 2374-1999, main changes of this Standard are as follows:

— To cancel five welding materials such as J422CrCu, J422NiCrCu, H08MnSiCuCrNi I, H08MnSiCuCr I, H08NiCuMnSi I;
— To improve the index of impact energy of deposited metals;
— To adjust the chemical composition of J506NiCrCu welding rod;
— To cancel the performance requirements of cold bending of deposited metals in transverse;
— To cancel the requirements of radiographic inspection of welding seam;
— To increase the relevant contents of high strength welding material of atmospheric corrosion resisting;
— To increase the relevant contents of stainless steel gas protection welding wire for rolling stock;
— Relevant requirements for test methods to be standardized;
— To definite the inspection rules of welding materials.

The Annex A, Annex B of this Standard is normative annex, Annex C is informative annex.

This Standard is proposed and under the jurisdiction of Standards and Metrology Research Institute of MOR.

Main draft units of this Standard are Metal and Chemical Research Institute of China Academy of Railway Sciences, Standards and Metrology Research Institute of MOR, Changzhou Huatong Welding Wire Co., Ltd, Qiqihar Railway Rolling Stock (Group) Co., Ltd, Baoshan Iron and Steel Group, Taiyuan Iron and Steel (Group) Co. , Ltd and CSR Feb. 7th Rolling Stock CO. Ltd.

Main drafters of this Standard are Song Hongtu, Qu Zhaoxia, Chen Zengyou, Li Zhenhua, Ding Wei, Zhu Mei, Liu Yanhong, Wang Zhibin and Wang Xiuqin.

History editions replaced by this Standard are as follows:

— TB/T 2374-1993;
— TB/T 2374-1999.

Welding Material of Atmospheric Corrosion Resisting Steel and Stainless Steel for Rolling Stock

1. Scope

This Standard specifies the technical requirements, test methods, inspection rules, packaging, marking and quality certificate, etc of atmosphere corrosion resisting steel welding rod and wire (gas shielded welding wire and submerged arc welding wire) for rolling stock as well as TCS stainless steel (stainless steel hereinafter) gas shielded welding wire for wagon body.

This Standard is applicable to welding material of atmosphere corrosion resisting steel and stainless steel for rolling stock.

2. Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB 222-2006 Method of sampling steel for determination of chemical component and permissible variations for product analysis

GB/T 223 Methods for Chemical Analysis of Iron, Steel and Alloy

GB/T 1954 Methods of measurement for ferrite content in austenitic Cr-Ni stainless steel weld metals

GB/T 2650 Impact test methods on welded joints

GB/T 2652 Tensile test methods on weld and deposited metal

GB/T 2653 Bend test methods on welded joints

GB/T 5118 Low alloy steel covered electrodes

GB/T 5293 Carbon steel electrodes and fluxs for submerged arc welding

GB/T 8110 Welding electrodes and rods for gas shielding arc welding of carbon and low alloy steel

GB/T 17853-1999 Stainless steel flux cored wires

TB/T 1979-2003 Technical specification for the procurement of atmospheric corrosion resisting steel for railway rolling stock

TB/T 2375-1993 Test of pitting corrosion resistance of stainless steels in the ferric chloride solution

3. Technical Conditions

3.1 Welding electrode, wire, flux for atmospheric corrosion resisting steel

3.1.1 Manual welding electrode

The electrode dimensions, covering, T-shaped joint fillet weld test, water content of covering, or deposited metal diffusion hydrogen content shall be in accordance with GB/T 5118.

3.1.2 Gas shielded welding wire

The wire dimensions and permissible deviation, surface quality, stiffness and tensile test, copper plating bonding force, winding, relaxation diameter, and warping distance shall be in accordance with GB/T 8110. When the wires are butted, there shall not be more than one joint in each coil. The wire shall ensure even and continuous feeding.

3.1.3 Submerged arc welding wire and flux

The wire dimensions, surface quality, relaxation diameter, and warping distance shall be in accordance with GB/T 5293. The wire shall ensure even and continuous feeding.

It is recommended that SJ301 flux is used for H08MnCuCrNi II wire and SJ101 flux for the other submerged arc welding wires. The other fluxes passing technological test and conforming to the requirements may be used. The fluxes shall be in accordance with GB/T 5293.

3.1.4 Electrode deposited metal and wire chemical composites

The electrode deposited metal and wire chemical composites shall be respectively in accordance with those specified in Tables 1 and 2.

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