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

**GB/T 22086-2008**

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**Recommendations for welding of aluminium and aluminium  
alloys**

铝及铝合金弧焊推荐工艺

**(English Translation)**

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### Foreword

This revised standard adopts ISO/T R17671-4.2002 "Recommended welding process welding of metallic materials - Part 4. aluminum and aluminum alloys Arc "(in English).

This standard is based on ISO/T R17671-4. redrafted 2002. This standard and ISO/T R17671-4. Compared to 2002, the technical content of repair Changed as follows.

--- Added Appendix A (informative) for explaining the clusters divided aluminum and aluminum alloy base material, and Appendix A of the original standard to Appendix B, Appendix B to Appendix C.

For ease of use, this section made the following editorial changes.

--- Deleted international standards foreword;

--- The standard name be changed to "aluminum and aluminum alloy welding technology recommended";

--- Of ISO/T R17671-4. other international standards referenced in 2002, has been adopted as the equivalent of the standard with our standard Generation for the corresponding international standards, it is not tantamount to the adoption of standards for the direct reference to international standards;

--- Delete references to normative documents of the European aluminum and aluminum alloy base material standards.

The Standard Appendix A, Appendix B, Appendix C is informative appendix.

This standard by the National Standardization Technical Committee welded and centralized.

This standard was drafted. Changchun Railway Vehicles Co., Ltd..

## 1 Scope

This standard specifies the recommended methods and technology of welding aluminum and aluminum alloy.

This standard applies to the welding of aluminum and aluminum alloy.

## 2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 985.3 aluminum and aluminum alloy gas welding Recommended groove (GB/T 985.3-2008, ISO 9692-3:2000, MOD) GB/T 5185 Welding and allied processes method code (GB/T 5185-2005, ISO 4063:1998, IDT) GB/T 6417.1 metal fusion welding head defect classification and description (GB/T 6417.1-2005, ISO 6520-1:1998, IDT) GB/T 16672-1996 Welds - Working positions tilt and swivel definition (idt ISO 6947:1993) GB/T 18591-2001 welding preheating temperature, interpass temperature and preheat maintenance temperature measurement guidelines (ISO 13916:1996, IDT) GB/T 22087 aluminum and aluminum alloy welding joint quality levels for imperfection (GB/T 22087-2008, ISO 10042:2005, IDT) ISO/T R15608 welding of metallic materials Classification System Guide

### 3.1 Overview

Aluminum and aluminum alloy base material for welding shall comply with the requirements of Annex A, it should also be combined with the specific welding conditions, the special provisions of the base material Requirements (including chemical composition, mechanical properties, surface finish requirements, etc.).

Welding permanent or temporary attachments (eg processing beam/positioning plate, arc plate and crater board, etc.) should be matched to the base material.

### 3.2 Storage and safekeeping

In order to prevent corrosion or contamination should, aluminum and aluminum storage Avoid contact with carbon steel, copper and other materials, and to make clear the mark.

## **4 Factors that affect the performance of welded structures and components**

Appendix B lists the negative factors that may arise due to welding, these factors are limited to conventional aluminum and aluminum alloy metallurgy technology, with

When also listed its causes and remedies.

In the design process of welded structures, it should consider the impact of the welding heat affected zone and weld properties, mechanical properties of the weld and heat affected zone Generally lower than the base metal.

In operation, it should pay attention to avoid the heat affected zone than any design, such as welding, arc abrasions and other temporary attachment.

## **5 Arc welding**

When welding aluminum and aluminum alloys can be used as welding method (welding code See GB/T 5185).

- 131 metal inert gas welding (MIG);
- 141 tungsten inert gas welding (TIG);
- 15 plasma arc welding.