

ICS 25.160.10

CCS J 33



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

GB/T 34630.4-2017

**Friction stir welding -- Aluminium and its alloys -- Part 4:
Specification and qualification of welding procedures**

搅拌摩擦焊 铝及铝合金 第4部分：焊接工艺规程及评定

(English Translation)

Issued on: September 29, 2017

Implemented on: April 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

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Foreword

GB/T 34630 "friction stir welding aluminum and aluminum" is divided into five parts.

- Part 1. Terms and definitions;
- Part 2. Welding joint design;
- Part 3. Welding operators skills assessment;
- Part 4. Welding procedure procedures and assessment;
- Part 5. Quality and inspection requirements.

This section GB/T 34630 Part 4.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the redrafted Law Amendment uses ISO 25239-4:2011 "Friction stir welding aluminum Part 4. Welding procedures and procedures and Assessment "(English version).

This part of ISO 25239-4:2011 and the main technical differences and the reasons are as follows.

--- On the normative references, this section made a technical difference with the adjustment to adapt to China's technical conditions, adjust the situation Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.

- The international standard quoted in ISO 25239-4:2011 should be replaced by the corresponding standard in our country.
- increase the reference GB/T 3375, GB/T 34630.3-2017;
- Removed ISO 857-1, ISO 3134, ISO/T R17671-1.
- According to the preparation of our standard delete the second chapter of ISO 25239-4:2011;
- According to China's standard preparation requirements 5.2pWPS ISO 25239-4:2011 technical content expressed in the form of an item.

This section also made the following editorial changes.

- The standard name was changed to "friction stir welding aluminum and aluminum alloy Part 4. Welding procedures and assessment";
- Removed the international standard reference.

This part of the National Welding Standardization Technical Committee (SAC/TC55) and focal point.

This part of the drafting unit. Shanghai Aerospace Equipment Manufacturing Plant, the car in Qingdao Sifang Locomotive Co., Ltd., Institute of Mechanical Science Harbin Welding Institute.

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Friction stir welding aluminum and aluminum alloy Part 4. Welding procedure specification and assessment

1 Scope

GB/T 34630 provisions of this part of the aluminum and aluminum alloy friction stir welding pre-welding procedures, welding process qualification test Type, welding, testing and testing, approved range.

This section applies to aluminum and aluminum alloy friction stir welding.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2651 Tensile test method for welded joints (GB/T 2651-2008, ISO 4136:2001, IDT)
GB/T 2653 bending test method for welded joints (GB/T 2653-2008, ISO 5173:2000, IDT)

GB/T 3190 Deformed aluminum and aluminum alloy chemical composition (GB/T 3190-2008, ISO 209:2007, MOD) GB/T 3375 welding terminology GB/T 6417.1 metal fusion welding head defects classification and description (GB/T 6417.1-2005, ISO 6520-1:1998, IDT) GB/T 16475 deformation of aluminum and aluminum alloy code (GB/T 16475-2008, ISO 2107:2007, MOD) GB/T 18591 welding preheat temperature, and preheating temperature measurement guide (GB/T 18591-2001, ISO 13916:1996, IDT) GB/T 19866 welding procedures and the general principles of assessment (GB/T 19866-2005, ISO 15607:2003, IDT) GB/T 19868.4 Process evaluation based on pre-production welding test (GB/T 19868.4-2005, ISO 15613:2004, IDT) GB/T 19869.2 aluminum and aluminum alloy welding process qualification test (GB/T 19869.2-2012, ISO 15614-2, MOD) GB/T 22087 Aluminum and aluminum alloy arc welding imperfections quality grading guidelines (GB/T 22087-2008, ISO 10042.

2005, IDT)

Metallic materials - Weld destructive tests - Weld macro and micro test (GB/T 26955-2011, ISO 17639).

2003 (E), MOD)

GB/T 27551 Metallic materials weld fracture test fracture (GB/T 27551-2011, ISO 9017:2001, IDT) GB/T 32259 Weld non-destructive testing Weld joint visual inspection (GB/T 32259-2015, ISO 17637:2003, MOD) GB/T 34630.1 friction stir welding aluminum and aluminum alloy - Part 1. Terms and definitions (GB/T 34630.1-2017, ISO 25239-1:2011, MOD) Friction stir welding aluminum and aluminum alloys - Part 3. Skill assessment of welding operators (GB/T 34630.3-2017, ISO 25239-3:2011, MOD) GB/T 34630.5-2017 Friction stir welding aluminum and aluminum alloys - Part 5. Quality and inspection requirements (GB/T 34630.5-2017, ISO 25239-5:2011, MOD) ISO 14175 Welding consumables and related processes for welding gas and gas mixtures (Welding consumables-Gases and gas mixtures for fusion welding and allied processes) ISO 80000-1-2009 Quantities and units Part 1. General rules (Quantities and units-Part 1: General)