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

GB/T 10858-2023

**Wire electrodes,wires and rods for welding of aluminium and
aluminium alloys**

铝及铝合金焊丝

(English Translation)

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Foreword

ISO 18273.2004 Welding consumables -- Wire electrodes, wires and rods for welding of aluminium and aluminium alloys -- Classification (English edition) was modified and referenced in this Standard. This Standard was redrafted in accordance with ISO 18273.2004.

Considering the actual situation of aluminium and aluminium alloy wires and rods in China, the following technical contents are modified for ISO 18273.2004.

- EN ISO 544, ISO 31-0.1992 and ISO 14344 have been removed from the normative references;
- Annex A and comparison table of major international standard models have been added;
- Table 2, Table 3, Table 4, and Figure 1 have been added.

For ease of use, this Standard has also made the following editorial changes.

- The name of this Standard has been modified to "Aluminium and aluminium alloy wires and rods";
- In terms of standard structure, the contents of inspection rules, marking, and quality certificate have been added;

- "This International Standard" has been modified to "this Standard";
- The comma "," as a decimal point has been replaced with the decimal point ".";
- Foreword of the International Standard has been removed.

This Standard is a revision of GB/T 10858-1989 Aluminium and aluminium alloy wires and rods. Compared with GB/T 10858-1989, the main changes are as follows.

- The classification and model division of wires and rods adopt the method of representation in ISO 18273:2004, and the number of models of wires and rods has increased by 23;
- The chemical compositions of wires and rods are consistent with the requirements of ISO 18273;
- The dimensions and packaging form of wires and rods have been adjusted according to the requirements of ISO 18273;
- Annex A describes the correspondence between the major international Aluminium and aluminium alloy wires and rods

1 Scope

This Standard specifies the classification and models, technical specifications, test methods, inspection rules, packaging, marking and quality certificate of wire electrodes, wires and rods for welding of aluminium and aluminium alloys.

This Standard applies to the wire electrodes, wires and rods for welding of aluminium and aluminium alloys (hereinafter referred to as "wires and rods") for gas metal arc welding, gas tungsten arc welding, gas welding, and plasma arc welding.

2 Normative references

The provisions in the following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrections) or revisions do not apply to

this Standard. However, parties who reach an agreement based on this Standard are encouraged to study if the latest editions of these documents are applicable. For undated references, the latest editions apply to this Standard. GB/T 6987 (all Parts) Methods for chemical analysis of aluminum and aluminum alloys

3.1 Classification of wires and rods

The wires and rods are classified into five categories in accordance with their chemical compositions, namely aluminum (Al), aluminum copper (AlCu), aluminum manganese (AlMn), aluminum silicon (AlSi), and aluminum magnesium (AlMg).

3.2 Model division

The models of wires and rods are divided in accordance with the chemical compositions (SEE Table 1).

3.3 Model preparation method

Each model of wires and rods consists of three parts. The first part is the letters shall be taken from the raw materials of the finished wires and rods or the manufactured products. During the arbitration test, samples shall be taken from the finished wires and rods.

5.1.2 The chemical compositions of wires and rods can be analyzed by any

suitable method. The arbitration test shall be carried out in accordance with GB/T 6987.

5.2.1 USE a measuring tool with a precision of 0.01mm for dimension

inspection of wires and rods. According to the requirements of Table 2 and Table 3, PERFORM the measurements in the direction perpendicular to each other on the same cross-section. There shall be no less than two measuring positions.

5.2.2 The surface quality of wires and rods shall comply with the requirements

of 4.3. PERFORM visual inspection on any part of the wires and rods.

6 Inspection rules

The finished wires and rods are inspected by the quality inspection department of the manufacturer in batches.

6.1 Batch division

Each batch of wires and rods shall consist of the wires and rods of the same furnace number, the same shape, the same dimensions, and the same delivery state. The maximum mass of each batch of wires and rods shall not exceed 10t.

6.2 Sampling method

SELECT 3% of wires and rods in reels (coils) per batch in accordance with the number of reels (coils), but not less than two reels (coils); and EXTRACT 100 straight wires and rods per batch for the inspection of dimensions and surface quality of wires and rods.

6.3.1 The chemical compositions of each batch of wires and rods shall comply

with the requirements of Table 1.

6.3.2 The dimensions and surface quality of each batch of wires and rods

shall comply with the provisions of 4.2 and 4.3.

6.3.3 Each batch of wires and rods can also be accepted in accordance with

the acceptance items negotiated by both parties.

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