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

GB/T 15115-2024

Replacing GB/T 15115-2009

Die casting aluminum alloys

压铸铝合金

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1 Scope

GB/T 15115-2024 is the Chinese national standard on die casting aluminum alloys, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 25 April 2024. Classification: ICS 77.120.10, CCS J31. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the designations and codes, technical requirements, test methods, inspection rules and markings, quality certificates, packaging, transportation and storage of die casting aluminium alloys. This document is applicable to the production and inspection of die casting aluminum alloy materials (aluminum alloy liquid and aluminum alloy ingots).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 5611, Foundry terminology

GB/T 7999, Optical emission spectrometric analysis method of aluminum and aluminum alloys

GB/T 20975.3, Methods for chemical analysis of aluminium and aluminium alloys - - Part

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 5611 apply.

4 Alloy designations and codes

4.1 Representation methods for alloy designations The aluminum alloy designation for die casting is composed of the chemical symbols of aluminum and the main alloying elements.

4.2 Representation methods for alloy codes In the alloy code, "YL" ("Y" and "L" are the first letters of the Chinese pinyin for "Ya" and "Lü" respectively) indicates die casting aluminum alloy. The first digits 1, 2, 3, and 4 after YL respectively represent Al-Si, Al-Cu, Al-Mg, and Al-Zn series alloys, representing the alloy code.

5 Technical requirements

5.1 Chemical composition The chemical composition of die casting aluminum alloy shall comply with the requirements of Table 1.

5.2 Slag inclusion The slag inclusion grade of die casting aluminum alloy shall comply with the requirements in Table 2.

5.3 Appearance and fracture

5.3.1 The appearance quality of the die casting aluminum alloy liquid surface shall be clean, without obvious slag and non-metallic floating objects.

5.3.2 The surface of the die casting aluminum alloy ingot shall be free of contaminants such as grease, dirt, corrosion products, scum or any other foreign matter.

6.1 Chemical composition

6.1.1 The test method for chemical composition shall be carried out in accordance with No. Alloy designation Alloy code b

6.1.2 In case of dispute over the analysis results, arbitration shall be conducted in accordance with GB/T 20975.3, GB/T 20975.4, GB/T 20975.5, GB/T 20975.7, GB/T 20975.8, GB/T 20975.10, GB/T 20975.11, GB/T 20975.12, GB/T 20975.14, GB/T 20975.16 and GB/T 20975.17.

6.2 Slag inclusion The testing method for slag inclusions in die casting aluminum alloys shall be carried out in accordance with the provisions of Annex D.

7 Inspection rules

7.1 Inspection items The inspection items are shown in Table 3.

7.2 Batching A batch is composed of products from the same aluminum ladle or melting furnace.

7.3 Sampling Sampling regulations are shown in Table 4.

7.4 Judgement rules

7.4.1 If the chemical composition test fails, double the number of samples can be taken for reinspection.

7.4.2 If the slag inclusion test fails, it is allowed to take double the number of samples for reinspection.

7.4.3 If the appearance and fracture inspection fail, the batch of products will be deemed unqualified.

8.1 Marking

8.1.1 Each packaging unit (ingot bundle, insulation bag) of die casting aluminum alloy shall have the following mark. When the purchaser has special requirements, it shall be determined by negotiation between the supplier and the buyer.

8.1.2 The number identification, production batch number and material designation of the die casting aluminum alloy liquid insulation bag shall be clear.

8.3 Packaging

8.3.1 Die casting aluminum alloy ingots shall be bundled. Each designation shall be bundled separately. The packaging shall be firm to ensure that it will not fall apart during transportation.

8.4 Transportation

8.4.1 During transportation, die casting aluminum alloy ingots shall meet the stacking requirements and be protected from rain, moisture, dropping and severe collision.