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CCS H61

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 26036-2020

Replacing GB/T 26036-2010

Aluminum alloy die forgings for automobile wheels

汽车轮毂用铝合金模锻件

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1 Scope

GB/T 26036-2020 is the Chinese national standard on aluminum alloy die forgings for automobile wheels, 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 2 June 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2021. Classification: ICS 77.150.10, CCS H61. 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 Standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage, quality certificate and order form (or contract) content of aluminum alloy die forgings for automobile wheels. This Standard is applicable to aluminum alloy automobile wheels (hereinafter referred to as wheels).

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this

document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 231.1 Metallic Materials - Brinell Hardness Test - Part 1: Test Method

GB/T 629 Chemical Reagent - Sodium Hydroxide

GB 1787-2018 Aviation Piston Engine Fuels

GB/T 2933 Wheels and Rims for Pneumatic Tyres - Vocabulary, Designation and Marking

GB/T 3190 Chemical Composition of Wrought Aluminum and Aluminum Alloys

GB/T 3199 Wrought Aluminum and Aluminum Alloy Products - Packing, Marking, Transporting and Storing

GB/T 3246.1 Inspection Method for Structure of Wrought Aluminum and Aluminum Alloy Products - Part 1: Inspection Method for Microstructure

GB/T 3246.2 Inspection Method for Structure of Wrought Aluminum and Aluminum Alloy Products - Part 2: Inspection Method for Macrostructure

GB/T 3487 Rims for Passenger Car

GB/T 5209 Pains and Varnishes - Determination of Resistance to Water - Water Immersion Method

GB/T 5334 Performance Requirements and Test Methods of Passenger Car Wheels

GB/T 5909 Performance Requirements and Test Methods of Commercial Vehicles Wheels

GB/T 6519 Process for Ultrasonic Inspection of Wrought Aluminum Alloy Products

4.13 Appearance Quality

4.13.1 The surface of wheels shall be smooth and flat; there shall not be obvious burrs, sharp edges and insufficient filling.

4.13.2 The paint film shall have no obvious defects like blistering, sagging, orange peel, exposed base or scratches.

4.13.3 On the installation surface, center hole and nut seat surface of the wheels, there shall be no dripping paint.

4.13.4 The marking of wheels shall be intact and clear.

5 Test Methods

5.1 Chemical Composition Conduct the test in accordance with the methods specified in GB/T 20975 or GB/T 7999. The arbitration analytical method shall comply with the methods specified in GB/T 20975.

5.2 Prohibited Substances Conduct the test in accordance with the methods specified in GB/T 30512.

5.3 Dimensions

5.3.1 The inspection of rim contour shall be conducted in accordance with the methods specified in GB/T 9769.

5.3.2 The inspection of flatness of wheel attachment face shall be conducted in accordance with the methods specified in QC/T 243.

5.3.3 The inspection of bolt hole position shall be conducted in accordance with the methods specified in QC/T 240. Conduct the test in accordance with the methods specified in GB/T 8013.3, or, it shall be determined through negotiation between the demand-side and the supply-side; indicated in the order form (or contract).

5.9.4 Chromatic aberration Conduct the test in accordance with the methods specified in GB/T 9761.

5.9.5 Pencil hardness Conduct the test in accordance with the methods specified in GB/T 8013.3.

5.9.6 Resistance to crushed stone impact Conduct the test in accordance with the methods specified in Appendix A.

5.9.7 Dry adhesion Conduct the test in accordance with the methods specified in GB/T 9286.

5.9.8 Resistance to water Resistance to water shall be tested in accordance with the methods specified in GB/T 5209. After the test, the sample shall be placed at room temperature for 24 h, then, in accordance with the methods specified in GB/T 9286, conduct dry adhesion test.

5.9.9 Resistance to humidity and heat Resistance to humidity and heat shall be tested in accordance with the methods specified in the constant temperature and humidity test in GB/T 8013.3. After the test, the sample shall be placed at room temperature for 24 h, then, in accordance with the methods specified in GB/T 9286, conduct dry adhesion test.

5.9.10 Resistance to cold and heat cycles Paint film's resistance to cold and heat cycles shall be tested in accordance with the following steps:

a) Place the sample into a constant temperature and humidity chamber at the temperature of 90 °C ± 2 °C and the relative humidity of 20% ± 3%, maintain for 24h;

b) Take out the sample, place it at room temperature for

0.5 h, then, place it into a cryogenic box at the temperature of -40 °C ± 2 °C, maintain for 24 h;

c) Take out the sample, place it at room temperature for

5.10 Fatigue Performance

5.10.1 The rated load of wheels shall be determined by the demand-side and the supply-side through negotiation; indicated in the order form (or contract).

5.10.2 The dynamic bending fatigue test and dynamic radial fatigue test of passenger car wheels shall be conducted in accordance with the methods specified in GB/T 5334.

5.10.3 The dynamic bending fatigue test and dynamic radial fatigue test of commercial vehicle wheels shall be conducted in accordance with the methods specified in GB/T 5909.

5.11 Impact Performance

5.11.1 In accordance with the rated load of the passenger car wheels, select tire with the maximum load capacity. The rated load of the wheels shall be determined by the demand-side and the supply-side through negotiation; indicated in the order form (or contract).

5.11.2 The impact test shall be conducted in accordance with the methods specified in GB/T 15704.

5.12 Appearance Quality Under incandescent lamp with the illumination intensity of 900 lx ~ 1,200 lx, the observer's line of sight is approximately perpendicular to the observation surface; the distance between the eyes and the observation surface is 500 mm ~ 1,000 mm. Conduct visual observation of the surface of the wheels.

6 Inspection Rules

6.1 Inspection and Acceptance Inspection number of samples from the batch of products where the disqualified sample is located to conduct re-inspection. If the re-inspection result is all qualified, then, this batch shall be determined as qualified. If there are still samples with disqualified performance in the re-inspection result, then, this batch shall be determined as disqualified.

6.5.5 When the macrostructure of any sample is disqualified, take twice the number of samples from the batch of products where the disqualified sample is located to conduct re-inspection. If the re-inspection result is all qualified, then, this batch shall be determined as qualified. If there are still disqualified samples in the re-inspection result, then, this batch shall be determined as disqualified.

6.5.6 When the microstructure of any sample is disqualified, then, this batch shall be determined as disqualified.

6.5.7 When the non-destructive testing of any wheel is disqualified, then, this piece shall be