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**Commercial vehicles - light alloy wheels - 30° impact test
method**

商用车 轻合金车轮 30°冲击试验方法

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Commercial vehicles - light alloy wheels - 30° impact test method

1 Scope

This standard specifies a laboratory test method, for evaluating the performance of light alloy wheels impacting curbs axially (transversely).

This standard applies to light alloy wheels for commercial vehicles.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 2933 Wheels and rims for pneumatic tyres - Vocabulary, designation and marking

GB/T 2977 Size designation, dimensions, inflation pressure and load capacity for truck tyres

3 Terms and definitions

The terms and definitions, as defined in GB/T 2933, as well as the following terms and definitions, apply to this document.

3.1

Wheel-tire assembly

Assembled assembly of wheels, tires, valves.

4 Test samples

New wheels that have been gone through all processes.

The tires selected for the test shall be the tires specified by the vehicle manufacturer. If there is no special requirement, it shall use the tubeless tires with the smallest nominal section width in accordance with GB/T 2977. The inflation pressure is the value, which is specified by the vehicle manufacturer. If there is no requirement, it shall comply with the provisions of GB/T 2977 on tire air pressure; the allowable error range is ± 10 kPa.

6.2 Drop height of hammer

The drop height of the hammer is calculated by the following formula:

$$H=K \times W$$

Where:

H - The distance from the impact surface to the highest point of the tire, mm;

W - Wheel or wheel rated load specified by the vehicle manufacturer, kg;

K - Coefficient, mm/kg, usually take $K = 0.4$ mm/kg.

6.3 Test procedure

6.3.1 Install the wheel and tire assembly on the testing machine. The testing machine mounting jig shall be equivalent, in size, to the fixture used on the vehicle.

6.3.2 Adjust the distance H, from the impact surface of the hammer to the highest point of the tire.

6.3.3 Adjust the position of the wheel tire assembly, so that the lower edge of the auxiliary hammer overlaps the wheel rim by $25 \text{ mm} \pm 1 \text{ mm}$ (see Figure 1). Adjust the position in the circumferential direction of the wheel, so that the impact part is directly below the hammer.

6.3.4 Tighten the nuts or bolts to the torque, which is specified by the wheel or vehicle manufacturer.

6.3.5 Release the hammer for impact.

6.3.6 Raise the hammer, to check the tire air pressure and wheel cracks.

7 Failure criteria

A wheel is considered to have failed, if any of the following occurs:

- a) The tire pressure within 30 s is less than 50% of the initial value;
- b) Wheel penetrating cracks (check with colored penetrant).

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