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

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Road Vehicles - Trailer Test Procedure

道路车辆 货运挂车试验方法

(English Translation)

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1 Scope

This Standard specifies the measurement method of the main structural and technical characteristic parameters of freight trailer (hereinafter referred to as trailer), the test methods of the strength of contacting area to the fifth wheel and the connection strength to the supporting device of the semitrailer, and the test method of braking performance and reliability of the trailer.

This Standard applies to test of trailers which run on roads and urban roads.

2 Normative references

The following documents are indispensable for the application of this document.

For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3730.1, Motor vehicles and trailers. Types. Terms and definitions

GB/T 3730.2, Road vehicle. Masses. Vocabulary and codes

GB/T 3730.3, Motor vehicles and towed vehicles. Dimensions of vehicles.

Terms and definitions

GB 7258, Technical specifications for safety of power-driven vehicles operating on roads

GB/T 12534, Motor vehicles. General rules of road test method

GB/T 12674, Motor vehicles. Weight parameter. Measuring method

GB 12676, Technical requirements and testing methods for commercial vehicle and trailer braking systems

GB/T 13594, Antilock braking performance and test procedure for motor vehicles and their trailers

GB/T 23336, General technical requirements for semitrailer attachments of the trailer, the external fastening degree, the lubrication status and the sealing condition of each assembly.

5.1.3 Check the assembly and adjustment mass of the trailer; they shall comply with the technical requirements of the manufacturer.

5.1.4 Check the installation of the anti-lock braking device of the trailer; it shall comply with the provisions of GB 7258.

5.2 Technical inspection

5.2.1

Technical inspection is performed after the general inspection of the trailer is passed, and before the performance test.

5.2.2

The road conditions of the technical inspection shall comply with provisions of GB/T 12534.

5.2.3

The traveled distance is not less than 100 km; control the driving speed within the range of 50% ~ 80% of the maximum speed of the tractor; keep the driving speed as constant as possible; pay attention to the working condition of each assembly and component of the trailer during driving, especially the performance of mechanisms such as steering, braking, connection and light signal; if abnormal phenomena are found, stop the vehicle to inspect immediately; find out the cause and eliminate it; then continue the inspection and test; record the situation in detail.

6 Measurement method of the main structural and

technical characteristic parameters

6.1.1 Measurement equipment

According to the mass of the to-be-test trailer, select a weight-bridge (or an axle load meter) which has the appropriate scale and the accuracy not less than

0.5%. The weight-bridge (or the axle load meter) shall be used within the validity period of the test. The surface of the weight-bridge and the entrance and exit of the weight-bridge shall be on the same plane.

6.1.2.1 Measurement of the unladen mass of the draw-bar trailer and the

axle-load mass of every axle

When the to-be-test trailer is towed by the tractor to drive from one direction onto the weight-bridge at a low speed, successively measure the front-axle

6.1.3.3 Processing of mass measurement results

For the calculation of the measurement results, see Table 1.

6.1.4.1 Measurement of the unladen mass and the axle-load mass of the

center-axle trailer

Use a tractor to tow the to-be-test center-axle trailer from one direction onto the platform of the weight-bridge at a low speed; separate the center-axle trailer from the tractor; release the supporting device; measure the unladen mass of the center-axle trailer G'_{ao} ; then, connect the center-axle trailer with the tractor, move and set out to drive the wheels of the center-axle trailer onto the platform of the weight-bridge; measure the axle-load mass of the center-axle trailer G'_{aso} ;

then, from the opposite direction, use the same method to sequentially weigh the unladen mass of the center-axle trailer G''_{ao} and the axle-load mass of the center-axle trailer G''_{aso} . When the measurement is performed, stop the center-axle trailer steadily; relax the brake; adjust the supporting device to the horizontal position of the bearing plane of the center-axle trailer.

6.1.4.2 Measurement of the maximum total mass and the maximum axle-

load mass of the center-axle trailer

Bring the center-axle trailer to the maximum total mass status; use the method of 6.1.4.1 to measure, under full load, the maximum total mass of the center-axle trailer G'_a , the maximum axle-load mass of the center-axle trailer G'_{as} , AND, from the opposite direction, the maximum total mass of the center-axle trailer

G''_a and the maximum axle-load mass of the center-axle trailer G''_{as} .

6.1.4.3 Processing of mass measurement results

For the calculation of the measurement results, see Table 1.

6.2.1.1 Calculation of the mass-center horizontal position of the draw-bar

trailer

6.2.1.1.1

The horizontal distance from the mass-center to the front-axle center line

Calculate according to Formula (1) at no load:

Where:

B -- the horizontal distance from the mass-center to the rear-axle center line at full load, in millimeters (mm);

6.2.1.2 Calculation of the mass-center horizontal position of the semitrailer

6.2.1.2.1

The horizontal distance from the mass-center to the traction pin center line of the semitrailer

Calculate according to Formula (5) at no load:

Where:

A 0 -- the horizontal distance from the mass-center to the traction pin center line of the semitrailer at no load, in millimeters (mm);

G s02 -- axle-load mass of the semitrailer at no load, in kilograms (kg);

G s0 -- unladen mass, in kilograms (kg);

Z -- wheelbase (projection distance from the traction pin center to the axle center of the semitrailer on the horizontal plane), in millimeters (mm).

Calculate according to Formula (6) at full load:

Where:

A -- the horizontal distance from the mass-center to the traction pin center line of the semitrailer at full load, in millimeters (mm);

Gs2 -- the maximum axle-load mass of the semitrailer, in kilograms (kg);

Gs -- the maximum total mass, in kilograms (kg).

6.2.1.2.2

The horizontal distance from the mass-center to the axle center of the semitrailer

Calculate according to Formula (7) at no load:

Where:

h g0 -- mass-center height of the draw-bar trailer, in millimeters (mm);