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**Methods and Requirements of Airbag System Abuse
Test for Automobile**

汽车安全气囊系统误作用试验的方法和要求

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Methods and Requirements of Airbag System Abuse Test for Automobile

1 Scope

This Standard specifies methods and requirements of airbag system abuse test for automobile.

This Standard is applicable to M₁ vehicles which install the airbag system and have a minimum ground clearance of more than 100 mm in the state of mass in running order.

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 19949.1, Road vehicle. Airbag components. Part 1: Vocabulary

JC/T 899, Concrete curbs

3 Terms and definitions

Terms and definitions determined by GB/T 19949.1 and the following ones are applicable to this document.

3.1 Airbag system

A system that consists of one or several sensor(s), an airbag control unit, and an airbag module.

3.2 Airbag control unit

An in-vehicle control unit that controls the airbag system.

3.3 Deployment

Inflate the airbag.

3.4 Abuse

Airbag deployment that occurs not for the function of occupant protection.

3.5 Mass in running order

The whole-vehicle mass plus 75 kg.

3.6 Door and lid or bonnet

A system that consists of front and rear doors, engine cover, rear trunk lid, etc.

4 Requirements

After the tests which are specified in 5.2, 5.3, and 5.4 are completed, the airbag that is equipped in the vehicle shall not deploy.

5 Test method

5.1 Vehicle preparation

5.1.1 The test vehicle shall reflect the characteristics of the series of products and shall include all normally-installed equipment which shall be in a state of normal operation.

5.1.2 Before each test, ensure that the transmission system, suspension system (including tires), steering and braking system of the test vehicle are in the state that is specified by the vehicle manufacturer, and the engine of the vehicle is in the starting state or the ignition switch is on the position of "ON".

5.1.3 The mass of the test vehicle shall be the mass in running order.

5.2 Static test

5.2.1 Door and lid test

When the door glass is at the lowest position, close the vehicle door and lid systems one by one at a speed of lock-body position not less than 4 m/s (the speed at which the door is closed) without the use of tools. During the test, other non-test vehicle door and lid systems are closed.

For vehicles whose lock-body speed cannot reach 4 m/s at the moment of closing the door due to the special design of the door and lid system, carry out the closing test of the corresponding door and lid system at the highest closing speed that the vehicle can reach during the test.

5.2.2 Test to move the outer seat in the front row

5.3 Roadblock test (test site: dry hard road)

5.3.1 Test to pass the curb from the front side

Drive the test vehicle at a speed of $40 \text{ km/h} \pm 2 \text{ km/h}$; drive the two front-axle wheels simultaneously to a T1 curb plane-road that is 100 mm above the ground; besides, it is required that, during the test, the test vehicle shall be driven with full braking and no braking respectively once before the front plane of the test vehicle is 1 m away from the curb (see JC/T 899 for the dimensions).

5.3.2 Test to pass the wooden beam from the front side

Drive the test vehicle at a speed of $40 \text{ km/h} \pm 2 \text{ km/h}$; drive the two front-axle wheels simultaneously through a wooden beam that is fixed to the ground, of which the height above the ground is 100 mm, the width is 100 mm and the length is 2 500 mm; besides, it is required that, during the test, the test vehicle shall be driven with full braking and no braking respectively once before the front plane of the test vehicle is 1 m away from the wooden beam.

5.3.3 Test to pass the slope from the front side

Drive the test vehicle, at the speed of $40 \text{ km/h} \pm 2 \text{ km/h}$; make the two front-axle wheels through a fixed slope at a constant speed (as shown in Figure 4). The slope is 250 mm high and 2000 mm long.

in millimeters

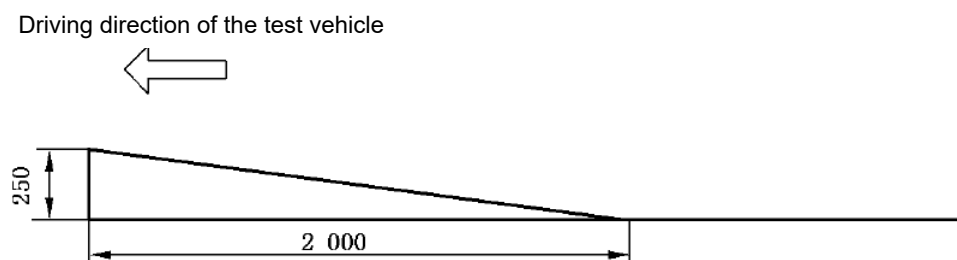


Figure 4 -- Schematic diagram of the slope dimensions

5.4 Rough road test

5.4.1 Belgian road test

Drive the test vehicle stably at a speed of $40 \text{ km/h} \pm 2 \text{ km/h}$ on the Belgian road (medium Belgian road) for at least 20 m, with full braking and no braking driving for once respectively. For the Belgian road, it is required that the cross slope is no more than 1.5%; it shall be paved by 120 mm $\times$ 250 mm stones; the height standard deviation is not more than 15 mm; the road surface is evenly concave and convex; the road features are shown in Figure 5.

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Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

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