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

GB 20071-2025

Replacing GB 20071-2006

**The protection of the occupants in the event of a lateral
collision**

汽车侧面碰撞的乘员保护

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1 Scope

GB 20071-2025 is the Chinese mandatory standard for occupant protection in a side impact, and it is a type approval requirement for every passenger car and light goods vehicle sold in China. Side impact is the hardest crash mode to protect against, because there is almost no structure between the occupant and the striking vehicle, and the whole discipline rests on the fidelity of the dummy used to measure it. That is what makes this revision significant: the 2025 edition brings in the WorldSID 50th percentile dummy and the EuroSID-2re, each with a full normative specification and positioning procedure, in place of the dummies of the 2006 text, and it adds electrical safety requirements for vehicles with a rechargeable energy storage system, that is for electric and hybrid vehicles after the impact. The document sets the technical requirements including the general requirements, the dummy performance criteria and the special requirements, the test methods and crash test procedure, the rules for determining whether a vehicle is of the same type, and the implementation of the standard. Normative annexes cover the mobile deformable barrier in detail, the two dummies and the partial tests. It replaces GB 20071-2006, which is superseded, applies to M1 and N1 category vehicles and to multi-purpose goods vehicles,

and takes effect on 1 July 2026.

This document specifies the technical requirements, test methods and type identification for the protection of the occupants in the event of a lateral collision. This document applies to M1 and N1 vehicles as well as multipurpose goods vehicles.

2 Normative references

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

GB 11551, The protection of the occupants in the event of a frontal collision for motor vehicle

GB 14166, Safety-belts and restraint systems for occupants of power-driven vehicles

GB 14167, Safety-belt anchorages and restraint systems anchorages for occupants of power-driven vehicles

GB 15086, Motor vehicles door locks and retention components performance requirements and test methods

GB/T 19596, Terminology of electric vehicles

GB/T 31498-2021, Post crash safety requirement for electric vehicle

ISO 6487, Road vehicles - Measurement techniques in impact tests - Instrumentation

ISO 15830, Road vehicles - Design and performance specifications for the WorldSID 50th percentile male side-impact dummy

4 Technical requirements

4.1 General The vehicle is tested in accordance with the provisions of Chapter

5. The test shall be carried out on the driver's side, with a WorldSID 50th side-impact dummy or a EuroSID-2re side-impact dummy placed at the driver's position. After the test, the vehicle shall comply with the requirements of 4.2 ~ 4.4. If the vehicle body structure or protection system is asymmetrical and the difference affects the side impact performance, the test shall be carried out on the side that is most unfavorable for the side impact performance according to the most unfavorable principle, and the WorldSID 50th side-impact dummy or EuroSID-2re side-impact dummy shall be placed in the front impact side position.

4.2.1 WorldSID 50th side-impact dummy

4.2.1.1 The head injury criterion (HIC36) shall not be greater than 1 000. When no head contact occurs, the HIC value is not calculated and "no head contact" shall be recorded.

4.2.1.2 The peak lateral force on the shoulder shall not exceed 3 kN.

4.2.1.3 The chest rib deformation shall not exceed 50 mm.

4.2.1.4 The belly rib deformation shall not exceed 65 mm.

4.2.1.5 The peak force at the pubic symphysis shall not exceed

4.2.2 EuroSID-2re side-impact dummy

4.2.2.1 The head injury criterion (HIC36) shall not be greater than 1 000. When no head contact occurs, the HIC value is not calculated and "no head contact" shall be recorded.

4.2.2.2 The chest rib deformation shall not exceed 44 mm.

4.2.2.3 The peak value of the resultant force on the belly shall not be greater than 2.5 kN of internal force.

4.2.2.4 The peak force at the pubic symphysis shall not exceed 6 kN.

4.3 Vehicle body safety requirements

4.3.1 During a collision, the vehicle doors (including the rear door or tailgate) shall not open.

4.3.2 After the collision test, the vehicle doors (including the rear door or tailgate) shall be in a latched state, and both the latch and the striker shall not be detached from the connection with the vehicle body; the door hinges shall not be separated from each other

4.3.6 Without increasing the risk of injury to occupants, the components inside the passenger compartment are only allowed to fall off due to permanent deformation.

4.3.7 After the collision test, if there is continuous leakage of liquid in the fuel supply system, the average leakage rate in the first 5 minutes after the collision shall not exceed 30 g/min; if the liquid leaked from the fuel supply system is mixed with the liquid leaked from other systems, and the different liquids cannot be separated and identified, the continuous leakage amount shall be evaluated based on all the collected liquids.

4.3.8 During the collision test and within 30 minutes after the collision test, the vehicle shall not catch fire (continued flame phenomenon).

4.3.9 After the collision test, the vehicle shall automatically turn on the hazard warning lights.

4.4 Electrical safety requirements For battery electric vehicles and hybrid electric vehicles with Class B voltage circuits, after the collision test, the vehicle's high-voltage power system

including the REESS and the high-voltage components connected to it shall comply with the anti-electric shock protection requirements (

4.2 of GB/T 31498-2021), electrolyte leakage requirements (

4.3 of GB/T 31498-2021) and REESS requirements (

4.4 of GB/T 31498- 2021) of GB/T 31498.

5 Test methods

5.1 Test site The size of the test site shall be able to accommodate the collision device propulsion system, the movement of the collided vehicle after collision, and the installation of the test equipment. The site where vehicles collide and move shall be level and flat, and the road friction coefficient shall be no less than 0.5.

5.2 Test conditions

5.2.1 The test vehicle shall remain stationary.

5.2.2 The mobile deformable barrier shall comply with the characteristics specified in Appendix A. The mobile deformable barrier shall be equipped with appropriate devices to avoid secondary collision with the test vehicle.

5.2.3 When a collision occurs, the longitudinal mid-vertical plane of the mobile deformable barrier shall be perpendicular to the longitudinal mid-vertical plane of the collided vehicle.

5.2.4 The distance between the longitudinal mid-vertical plane of the mobile deformable barrier and the transverse vertical plane of the test vehicle passing through R point of the front seat on the impact side shall be within ± 25 mm. At the moment of impact, it shall be ensured that the horizontal mid-plane defined by the vertical plane of the outer edge of the front surface of the deformable barrier is within ± 25 mm above and below the position determined before the test.

5.2.5 The instrument shall comply with the requirements of ISO 6487.

5.2.6 During the lateral collision test, the temperature of the side-impact dummy shall be stable at $20.6^{\circ}\text{C} \sim 22.2^{\circ}\text{C}$.

5.3 Test speed At the moment of collision, the speed of the mobile deformable barrier shall be $50 \text{ km/h} \pm 1 \text{ km/h}$, and this speed shall remain stable for at least 1 m before collision. The accuracy of the instrument used to measure the speed of the mobile barrier shall not be less than 1%. If the test is carried out at a higher impact speed and the test results meet the technical requirements of Chapter 4, the test is valid.

5.4 Vehicle status

5.4.1 General requirements The test vehicle shall include all equipment properly installed