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**NATIONAL STANDARD OF THE
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Test method for sightseeing vehicle brake performance

非公路用旅游观光车辆制动性能试验方法

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1 Scope

GB/T 42611-2023 specifies how the brakes of a sightseeing vehicle are tested. These are the low-speed electric vehicles that carry visitors around parks, scenic areas, resorts and campuses - not road vehicles, so outside the type approval regime that governs cars, and yet carrying members of the public, often standing, often on gradients, and driven by staff rather than by licensed professional drivers. Braking is where that combination becomes dangerous: a loaded vehicle on a downhill path with a brake system that has never been tested to a defined procedure. This document specifies the technical requirements and the test methods for the braking performance of sightseeing vehicles, defining the conditions, loads and measurements so that a result means the same thing from one vehicle and one test site to another. It applies to braking performance tests of sightseeing vehicles, including garden patrol minibuses and sightseeing vehicles generally. Under ICS 97.200.40, it is written for the manufacturers of these vehicles, for the inspection bodies that certify them, and for the parks and scenic area operators responsible for the vehicles they put into

service.

This document specifies the technical requirements and test methods for the braking performance of sightseeing vehicles. This document is applicable to the braking performance test of sightseeing vehicles (including garden patrol minibuses and sightseeing combination buses, hereinafter referred to as "sightseeing vehicles").

2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 21268 General technical conditions for garden patrol minibus

GB/T 38433 General technical specifications for sightseeing combination bus

3 Terms and definitions

The terms and definitions defined in GB/T 21268 and GB/T 38433 and the following apply to this document.

3.1 braking distance The distance traveled from the moment the driver starts to activate the brake control device to the moment the sightseeing vehicle stops, when the sightseeing vehicle travels at a specific initial speed.

3.2 service braking system The braking system by which the driver can directly or indirectly control the sightseeing vehicle to slow down or stop the sightseeing vehicle.

3.3 parking braking system On permitted ramps or level roads, the braking system that uses a mechanical mechanism to keep the sightseeing vehicle stationary, while the driver does not need to continuously operate the control device.

3.4 braking device A mechanism or device that slows, stops a vehicle's wheels, or holds a vehicle's wheels in a stopped state. NOTE: Generally it refers to the actuating components of the braking system and its ancillary devices.

3.5 braking heat fade Multiple braking operations or driving with the braking device in an incompletely combined state cause the braking device temperature to rise, resulting in a decline in the braking performance of the sightseeing vehicle.

3.6 braking stability During the braking process, the ability of the sightseeing vehicle to maintain straight driving without adjusting the steering wheel, which is reflected in the fact that any part of the vehicle (except for parts not included in the width of the vehicle) during the braking process does not exceed the specified test channel width.

3.7 electronic parking device The device in which the holding mechanism is activated by an electronic switch button, and the electronic control unit and actuator work together to realize the parking braking. NOTE: This device is a parking brake device controlled by an electronic system.

4.1 General requirements for sightseeing vehicles

4.1.1 The pedal, handle, or electronic parking devices that implement service braking and parking braking shall be convenient for the driver to operate. Sightseeing vehicles shall have a complete service braking system and parking braking system that are sufficient to decelerate, stop, and park the vehicle. The service braking function shall act on all wheels of the sightseeing vehicle. The control device of the service braking and the control device of the parking braking system shall be independent of each other.

4.1.2 The service braking distance and braking stability shall meet the requirements of Table 1, and the brake pedal force shall not be greater than 700 N.

4.1.8 The service braking pedal or handle shall be arranged according to the operating habits of the right foot or right hand.

4.1.9 The service braking system shall not affect the function of the service braking due to corrosion of the brake pipeline by the brake fluid or air resistance caused by the action of the engine and other heat sources.

4.1.10 Garden patrol minibuses shall be equipped with brake lights at the rear of the car; sightseeing combination buses shall be equipped with brake lights in the last carriage. The brake lights are triggered when the driver steps on the brake pedal.

4.1.11 Garden patrol minibuses with a speed limit function, when the specified speed limit is reached, will automatically decelerate the vehicle through the retarder, motor speed limit, or automatic start of the service braking system. The deceleration speed is adjustable and the vehicle speed can be limited to within 110% of the design parameter value.

4.2 Special requirements for sightseeing combination buses

4.2.1 For sightseeing combination buses that use air pressure braking, when the air pressure of the braking system is lower than the starting air pressure, the alarm device shall be able to continuously send an audible or visible alarm signal to the driver.

4.2.2 The braking system of each carriage shall have an independent air reservoir. The capacity of the air reservoir shall ensure that under the condition of rated working pressure and no further inflation, after five consecutive maximum braking travels of the sightseeing combination bus, the pressure in the air reservoir can still remain no lower than the starting air pressure.

4.2.3 The air pressure braking system of sightseeing combination buses shall be equipped

with a pressure limiting device to ensure that the air pressure in the air reservoir does not exceed the maximum allowable air pressure. The air pressure braking system shall be equipped with a device to keep the compressed air dry and separate oil and water. After the braking air pressure reaches the rated working pressure, turn off the power of the vehicle and keep it stationary for 2 hours; there shall be no obvious air loss. After starting the sightseeing combination bus, press the brake pedal for five consecutive times full travel; during this period, the braking system shall not alarm, and the brake charging pump shall not start.

4.2.4 When the carriage is suddenly decoupled and separated while the sightseeing combination bus is running, causing the braking pipe or braking signal line to break, the carriage braking system shall brake immediately and enable the decoupled carriage to brake and stop within 8m. The braking process shall not cause harm to passengers. After the carriage stops, the parking state shall be easily released. If special tools are needed, they shall be equipped with the vehicle.

4.2.5 When the sightseeing combination bus is braked, the danger caused by the collision of carriages and the discomfort to passengers shall be avoided.

5.1 Preparation before the test

5.1.1 All assemblies, components, accessories, and ancillary devices of the prototype are fully equipped and fully running as required, so that they are in normal technical condition. The battery voltage is sufficient, the oil and fluids meet the ex-factory conditions, all mechanical transmissions are well lubricated, the braking system functions normally, and the tire pressure meets the specifications in the manual.

5.1.2 The environmental conditions during the test shall meet the following requirements:

- a) Temperature is at -5 °C~40 °C;
- b) The wind speed does not exceed 3 m/s;
- c) The relative humidity of the air is not greater than 90%;
- d) The altitude is less than 2000 m.

5.1.3 The test site shall be a dry, flat concrete or asphalt pavement, and the length and width shall meet the test requirements.

5.1.4 The instruments, equipment, and measuring tools used in the test shall be verified or calibrated and used within the validity period.

5.1.5 The unloaded and fully loaded state of the sightseeing vehicle during the test shall meet the requirements of GB/T 21268 and GB/T 38433.

5.2 Visual inspection Check whether the braking system of the sightseeing vehicle complies with the provisions of 4.1.1, 4.1.3, 4.1.6, 4.1.8, 4.1.9, 4.1.10, 4.2.1, and