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Replacing GB 18565-2001

Composite performance requirement and detecting methods for road transport vehicles

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Table of contents

Foreword

The clause 5.1.3.1.1, 5.1.3.1.3, 5.1.3.2, 5.1.4.1.5, 5.1.6.2.2, 5.1.6.6.3, 5.1.7.1 to 5.1.7.3, 5.1.10.1.4 , 5.1.10.1.5, 5.1.10.2.1, 5.1.10.2.4, 5.1.11.2, 5.1.11.5, 5.1.12.4, 5.3.1.2, the vertical offset of the beam and the horizontal offset of the beam in Table 6, and the clause 5.3. 2 are recommended, AND the rest is mandatory.

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB 18565-2001 “Multiple performance requirement and detecting methods for commercial vehicles”.

As compared with GB 18565-2001, in addition to editorial changes, the main technical changes of this standard are as follows:

- CHANGE the standard name (SEE cover; cover of 2001 version);

- ADJUST the whole structure;

- ADD the “Introduction” (SEE the “Introduction” part);

- MODIFY the “Scope” statement; ADD the suitability descriptions of the vehicle type (SEE Chapter 1; Chapter 1 of 2001 version);

- ADD and DELETE some normative references (SEE Chapter 2; Chapter 2 of 2001 version);

- ADD the terms and definitions of “application in road transport vehicles” (SEE Chapter 3);

- ADD such performance requirements for the application in road transport vehicles as “Structural requirements”, “Configuration requirements”, “Fire proof requirements”, “Power”, “Fuel economy”, “Braking”, “Emission”, and “Driving stability”, etc. (SEE Chapter 4);

- Respectively PROPOSE the non-quantitative requirements and quantification requirements for vehicles in use in the “basic requirements”, “performance requirements”, and “other requirements” (SEE 5.1, 5.2, 5.3);

- In the “basic requirements”, ADD such requirements as “uniqueness certification” and “electronic control system”, etc. (SEE 5.1.1, 5.1.2);

- DELETE such requirements as the “cylinder compression pressure” and “the components of the engine ignition, fuel supply, lubrication, cooling and exhaust systems shall be complete”, etc. (4.1 of 2001 version);

- DELETE such requirements as “the technical conditions of the vehicle body and the cab shall be such as able to ensure the driver have normal working conditions and passenger & cargo safety”, the structural size of “safety exit”, “sleeper bus sleeper layout”, “aisle width”, “passenger door first step height”, and “fender”, etc. (SEE 11.8.1,11.8.9,11.8.12 ~ 11.8.15, etc. of 2001 version);

- ADD the evaluation indicators of the power of the vehicles in use (SEE 5.2.1);

- MODIFY the fuel consumption limit of the vehicles in use (SEE 5.2.2; Chapter 4 and 12.2 of 2001 version);

- ADD the requirements for the braking system of the vehicles in use and the braking performance of category O_3 and O_4 trailers and semi-trailers (SEE 5.2.3);

- MODIFY the requirements for the limit of the emission pollutants of the ignition engine of the vehicles in use and the emission visible pollutants of the compression-ignition engine vehicles; ADD the requirements of ignition engine using the sample working condition method and the compression-ignition engine using the load deceleration method (SEE 5.2.4; 9.1 and 12.7 of 2001 version);

- DELETE the requirements for the “gasoline vehicle fuel evaporation pollutant emission control” and “vehicle stationary noise” (SEE 9.1.3 and 9.2.1 of 2001 version);

- ADD the requirements for the “lateral slip of the steering wheel” of the double steering axle of the vehicles in use (SEE 5.2.5.1);

- MODIFY the evaluation indicators of the “wheel retardation rate” of the vehicles in use (SEE 5.3.3; 6.13.1.5 of 2001 version);

- ADD and MODIFY the test methods of the basic requirements and the performance requirements of the vehicles in use (SEE Chapter 6);

- MODIFY the test methods of the “power”, “fuel consumption”, and “braking performance” of the vehicles in use (SEE 6.5, 6.6 and 6.7, etc.);

- DELETE the methods of evaluating the “suspension characteristics” using a flat-type braking test-bed (SEE 7.6.2 of 2001 version);

- ADD the “judgment and treatment of the test results of the road vehicles in use” (SEE Chapter 7);

Introduction

Road transport vehicles have distinctive characteristics and features, AND their operating intensity, operating mileage, and failure frequency are much higher than the ordinary social vehicles. In all kinds of traffic accidents, the road transport vehicles constitute the main road traffic accidents, in addition to drivers, roads and climatic conditions and other factors, the vehicle's mechanical failure and technical performance badness are the important causes for the serious road traffic accidents.

Road transport safety is not only the top priority of safety production, but also the top priority of traffic safety management, the “comprehensive prevention of traffic accidents, to build a safe and harmonious road traffic environment” have been highly focused by the government and industry managers, AND the “safety, energy conservation, and environmental protection” has become a focus of the whole society. From the factors affecting the road transport safety such as “people, vehicle, road and environment”, the safeguarding effects of the vehicle’s technical conditions are more and more prominent. The effective maintaining the vehicle’s technical conditions, reducing the occurrence of safety accidents, minimizing the occurrence of serious accidents, reducing vehicle fuel consumption, and reducing tailgas emissions are urgent for the technical management of the road transport vehicles under the new situations of safe development, green development and fast development of the road transport industry in China.

National standard “Multiple performance requirement and detecting methods for commercial vehicles” (hereinafter referred to as “GB 18565-2001”) is an important technical regulation and main technical basis for the technical management and performance maintenance of the road transport vehicles in China. From the date of implementation of this standard, it plays an important role in such aspects as improving the road transport vehicle performance level and safeguarding the road traffic safety, etc. Meanwhile, in the implementation process of GB 18565-2001, some new situations and problems appear, AND many standard users propose the modification opinions and suggestions. Therefore, it is necessary to appropriately revise GB 18565-2001. The contents as specified in the revised GB 18565 are not only the comprehensive performance requirements of the road transport vehicles in use, but also the basic technical conditions to be complied with by the application of the road transport vehicles. This revision pays more attention to the development characteristics of the road traffic industry, combines closely with the recently issued relevant policies, laws and regulations, and new technologies, makes important adjustment against the standard structure, appropriately makes necessary addition and deletion of some technical clauses, modifies, improves

Composite performance requirement and detecting methods for road transport vehicles

1 Scope

This standard specifies the technical requirements for application in road transport vehicles and road transport vehicles in use, as well as test methods of road transport vehicles.

This standard applies to vehicles that are application in road transport vehicles and vehicles that are engaged in road transport operations, AND the vehicles engaged in road transport related business such as driver training may make reference to this standard.

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) are applicable to this Standard.

GB 1589 Limits of dimensions, axle load and masses for road vehicles

GB/T 2408 Plastics - Determination of burning characteristics - Horizontal and vertical test

GB 3847 Limits and measurement methods for exhaust smoke from C.I.E (compression ignition engine) and vehicle equipped with C.I.E

GB 7258 Safety specifications for power-driven vehicles operating on roads

GB 8410 Flammability of automotive interior materials

GB/T 12544 Measurement of maximum speed of motor vehicles

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

GB 13057 Strength of the seats and their anchorages of passenger vehicles

GB 13392 The vehicle mark for road transportation dangerous goods

Specific power

It refers to the ratio between the maximum net power of the engine (or 0.9 times the engine rated power OR 0.9 times the engine calibration power) AND the maximum allowable mass of the vehicle.

3.4

Vehicle braking rate

It refers to the percentage of the sum of the maximum driving braking force of each wheel AND the mass of the whole vehicle (the sum of the static load of each axis).

3.5

Axle braking rate

It refers to the percentage of the sum of the coaxial left and right wheel maximum braking force AND the static (dynamic) shaft load.

3.6

Braking unbalance rate

It refers to, in the whole process of driving braking force increase, the percentage between the maximum difference of the coaxial left and right braking force as measured at the same time AND the maximum value of the braking force of the left wheel and right wheel of this axle; in addition to the front axle, when the axle braking rate is less than 60%, it refers to the percentage of the maximum value of the coaxial left and right wheel braking force difference as measured at the same time AND this axle load.

3.7

Braking coordination time

It refers to the time required from the time to initiate the brake pedal to the time when the sum of braking forces of all wheels at the same time reaches to 75% of the specified value of the vehicle braking rate (OR the average deceleration fully realized reaches to 75% of the specified value).

3.8

Parking brake rate

4.2.3 The passenger vehicles of length more than 9 m AND the category N_3 cargo vehicles (including dangerous cargo transport vehicle) shall be equipped with retarders or other auxiliary braking devices.

4.2.4 As for the category M_2 and M_3 passenger vehicles, the category N_2 and N_3 cargo vehicles, the category O_3 and O_4 semi-trailers, and the passenger vehicles and dangerous cargo transport vehicles, all the driving brakes shall be equipped with brake clearance automatic adjustment device.

4.2.5 The vehicles with pneumatic brake shall be equipped with air pressure indication device and pressure limiting device, which can achieve alarm function. The pneumatic brake system shall be equipped with devices to maintain the compressed air drying or oil & water separation.

4.2.6 The passenger vehicles of length more than 9 m AND the dangerous cargo transport vehicles shall be equipped with radial tires, AND the sleeper buses shall be fitted with tubeless radial tires.

4.2.7 All seats of buses, cargo vehicles and passenger vehicles shall be equipped with seat belts complying with the requirements of GB 14166, AND the fixed points shall comply with the requirements of GB 14167.

4.2.8 Passenger vehicles and dangerous cargo transport vehicles shall have a speed limit function; OR it shall be equipped with the speed limit device as required by GB/T 24545. Three-axle and three-axle above trucks shall have overspeed alarm function (unless otherwise there is speed limit function AND the speed limit device complies with provisions), which can issue alarm through visual or auditory signal. The maximum speed as set for the speed limit function, speed limit device, and overspeed alarm shall comply with the relevant provisions.

4.2.9 Tourist buses, chartered buses, category 3 and above route buses, dangerous goods transport vehicles, category N_3 cargo trucks and semi-trailer vehicles shall be with the travelling data recording function AND the satellite positioning system vehicle terminal complying with the provisions of GB/T 19056 and JT/T 794.

4.2.10 Passenger vehicles shall be designed and manufactured to avoid the exhaust from the engine or heating device from entering into the passenger compartment, AND the closed bus shall have ventilation equipment.

4.2.11 Passenger vehicles shall be equipped with compartment lamp and door lamp, which shall not affect the driver's line of sight or the normal driving of the other motor vehicles.

4.2.12 When the maximum designed shaft mass of the steering shaft is more than 4000 kg, it shall be equipped with the steering assistance device.

4.3 Fire protection requirements

4.3.1 Cabs and passenger compartment of passenger vehicles and cargo vehicles shall use the interior decorative materials which are made from flame retardant materials in accordance with GB 8410. Among them, the combustion rate of the internal decorative materials of the passenger vehicles shall be less than or equal to 70 mm/min.

4.3.2 As for the passenger vehicles with rear positioned engine, inside the engine compartment shall be equipped with the engine compartment automatic fire extinguishing device (except for electric vehicles). The fire extinguishing device shall, once started, be able to alarm the driver through the audible signal.

4.3.3 As for the passenger vehicles and cargo vehicles equipped with eddy current retarders (including dangerous cargo transport vehicle), above the retarder installation position shall be fitted with insulation boards or flame-resistant insulation materials.

4.3.4 The wiring harness in the engine compartment and adjacent to other heat sources of the passenger vehicle shall adopt the flame retardant power cables of temperature resistance not less than 125 °C, the wire harness at other positions shall adopt the flame retardant power cables of temperature resistance not less than 100 °C, the flame retardant grade of bellows shall reach to the grade V-0 as specified in GB/T 2408, AND the harness shall, if laying through holes, be fitted with flame retardant and abrasion resistant insulation casing.

4.3.5 The power supply conductors for the onboard electrical equipment of passenger vehicles and cargo vehicles shall comply with the requirements of QC/T 730; AND the low voltage wire harness shall comply with the requirements of QC/T 29106.

4.3.6 The passenger compartment of passenger vehicles and the cab of the cargo vehicles shall be equipped with hand-held fire extinguishers, AND the configuration of the fire extinguishing devices of the passenger vehicles shall comply with the requirements of relevant standards. In addition that the cab shall be equipped with 1 dry powder fire extinguisher, the road transport explosives and highly toxic chemicals vehicles and other dangerous cargo transport vehicles shall also be equipped with the fire extinguishers suitable for the performance of the media transported OR the effective fire extinguishing

The braking time sequence of the vehicle train shall be as the follows: the braking action of each shaft of the trailer shall not lag behind the braking action of the shaft of the tractor, AND the braking coordination time of the vehicle train shall be not more than 0.80 s.

Test methods for the braking time sequence of the vehicle train shall follow 6.7.1.4 AND the provisions of the relevant clauses of GB/T 26778.

4.4.3.3.3 Braking force distribution

Under full load conditions, the distribution of vehicle train braking force shall be as follows: the ratio between the brake deceleration generated when only the tractor (trailer) brakes is used AND the brake deceleration generated when all the brakes of the tractors and trailers shall be not less than 95% of the mass ratio between the tractor (trailer) and the vehicle train. The test method follows 6.7.1.4 or the relevant provisions of GB/T 26778.

4.4.3.4 Continuous braking capability

4.4.3.4.1 The capacity of the cylinder shall be such that at the maximum barometric pressure as adjusted by the regulator valve under the conditions of continuous charging, the barometric pressure of the motor vehicle is not lower than that of the startup barometric pressure after 5 continuous full stroke braking by pressing the pedal to its uttermost position.

4.4.3.4.2 Trailers that use pneumatic brakes shall have one or more gas cylinders supplied by the tractor, AND it shall be such that once the gas cylinder supply circuit is cut off, after the driving braking device of the tractor makes 8 full stroke braking, the pressure of the trailer gas cylinder supply component shall be not less than 50% of the pressure at the first braking.

4.4.4 Emission

The exhaust pollutant emission limit of passenger vehicles and cargo vehicles shall comply with the relevant provisions of national standards.

4.4.5 Driving stability

4.4.5.1 Passenger vehicles

Once driving along a certain curve at a constant speed under full load, when the maximum centripetal acceleration at the mass center of the vehicle reaches to a steady state of 0.4 g, the vehicle shall not subjected to rollover or side sliding. CONDUCT test in accordance with the methods as specified in JT/T 884.

5.1.4.1.1 Brake pipeline

The brake pipeline shall be stable; AND in case of steering and driving, the metal pipeline and hose shall not interfere with the vehicle body or chassis.

5.1.4.1.2 Brake pump (cylinder) and gas (oil) circuit

Brake pump (cylinder) and gas (oil) circuit shall comply with the following requirements:

a) The brake master pump (master cylinder), branch pump (wheel cylinder), all kinds of valves and brake pipelines shall be free from gas leakage or oil leakage;

b) The brake metal pipe and hose shall be free from bending, wear, protrusion and flattening, AND the connection at the joint shall be reliable;

c) The vacuum hoses of the hydraulic brake assistance system shall be free from wear, folding mark or rupture; AND the connection at the joint shall be reliable.

5.1.4.1.3 Brake alarm device

The low pressure alarm device of the pneumatic braking system shall work normally, AND the fault alarm device of the braking system is free from alarming signal output.

5.1.4.1.4 Retarder

Retarder connection is reliable; the eddy current retarder appearance and in between the stator and the rotor shall be clean and free from oil stain; AND the hydraulic retarder shall be free from oil leakage.

5.1.4.1.5 Spring energy storage device

As for the pneumatic braking vehicles equipped with the spring energy storage brake, when the spring chamber pressure is low, the self-locking device of the spring energy storage device shall be effective.

5.1.4.1.6 Gas storage cylinders

The gas storage cylinder shall be stably installed AND free from corrosion, deformation, or other damages, AND the blow down valve of the gas storage cylinder shall be free from obstructions.

5.1.4.1.7 Brake pedal

5.1.6.6.1 Elastic elements

The elastic elements of the suspension such as leaf springs, coil springs, torsion bar springs, rubber shock absorbers and other elastic components shall be installed firmly AND free from cracks, piece missing film, piece addition, fracture, plastic deformation and functional failure. The air spring shall be free from leakage.

5.1.6.6.2 Component connection

Such components of the suspension such as elastic component assembly, shock absorber, guide rod (if assembly) and other components shall be connected reliably; the leaf spring U-bolts and nuts shall be complete and firm; the lifting lug pin (cover) shall be free from loosening or break; AND the lock pin shall be complete and effective.

5.1.6.6.3 Shock absorber

The shock absorber shall be stable and effective AND free from oil leakage.

5.1.7 Drive train

5.1.7.1 Clutch

The clutch is stable in engagement, thorough in disengagement, convenient in operation, AND free from abnormal noise, slipping, jittering, or heaviness, etc., during operation.

5.1.7.2 Transmission

Transmission shall be convenient in operation and accurate in gear, AND free from abnormal noise or oil drip or leakage.

5.1.7.3 Transmission abnormal noise

During operation, the drive shaft, main reducer and differential shall be free from abnormal noise.

5.1.7.4 Cardan joints and bearings

The cardan joints and middle bearing shall be free from loosening or cracks.

5.1.8 Lighting, signaling device and identification

5.1.8.1 External lighting and signaling devices

The left and right rearview mirrors, internal rearview mirrors, and under-view mirrors of the vehicles shall be intact and free from damage, AND their positions shall be effectively maintained. There is no requirement for the internal rearview mirrors for the category N_2 and N_3 cargo vehicles.

5.1.11.2 Windshield wipers and scrubbers

Front windshield wipers and scrubbers shall be able to work properly, AND the wiper shall be automatically returned to the initial position when the wiper is turned off.

5.1.11.3 Anti-glare device

The device in the cab that prevents the direct sunlight from producing glare against the driver shall be complete and effective.

5.1.11.4 Defogging and defrosting device

The defogging and defrosting device of the front windshield shall work properly.

5.1.11.5 Exhaust pipe and muffler

Exhaust pipe and muffler shall be intact, effective, solid and reliable.

5.1.12 Safety protection

5.1.12.1 Seat belts

All seats on the passenger vehicles, the cargo vehicle driver's seat, and the front passenger seats shall be equipped with seat belts, the accessories of which shall be complete, effective, and free from damage.

5.1.12.2 Side protection device

The side protection devices at both sides of category N_2 and N_3 cargo vehicles (except for semi-trailer), category O_3 and O_4 trailer, and in between the tractor and trailer shall be intact, solid, and effective.

Note: The vehicle and trailer the structure itself of which being able to prevent pedestrians and cyclists from being involved are excluded.

5.1.12.3 Rear protection device

Except for the tractor and long cargo trailers, the rear lower protection device of the category N_2 and N_3 cargo vehicles and the category O_3 and O_4 trailer shall be intact, solid and effective.

$$V_W \geqslant V_m \qquad \cdots\cdots(2)$$

Where:

V_m - Rated torque speed, in kilometers per hour (km/h).

5.2.2 Fuel economy

As for the vehicle in use consuming diesel or gasoline the total mass of which exceeds 3500 kg, the fuel consumption limit and evaluation method shall comply with the requirements of GB/T 18566.

5.2.3 Braking

5.2.3.1 System sealability

5.2.3.1.1 As for the vehicles using pneumatic barking, when the air pressure is raised to 600 kPa AND the air compressor stops running for 3 min, the air pressure drop shall not exceed 10 kPa. In the case of air pressure 600 kPa, when the air compressor stops running AND the brake pedal is pressed to its uttermost position, within 3 minutes after the air pressure is stabilized, the air pressure drop of single vehicle shall be not more than 20 kPa; AND the air pressure drop of the vehicle train shall be not more than 30 kPa.

5.2.3.1.2 As for the vehicles using hydraulic braking, at the idle operation state of the engine, when the brake pedal is depressed using a force of 550 N for 1 min, the pedal shall be free from movement towards floor; as for the vacuum-assisted system, when the residual vacuum is exhausted AND a 220 N force (110 N for passenger vehicle) is continuously applied to the brake pedal, if the engine starts, the brake pedal shall slightly move downwards.

5.2.3.2 Startup air pressure build time

As for the vehicles using pneumatic braking, if the engine is at 75% of the rated speed, the time required from zero of the indicated air pressure of the onboard barometer to the startup air pressure of the vehicle train shall be not more than 6 min, AND that of the other vehicle shall be not more than 4 min; if the startup air pressure is not indicated, it shall be taken as 400 kPa.

5.2.3.3 Bench inspection driving brake performance

5.2.3.3.1 Vehicle braking rate, axle braking rate and braking unbalance rate

5.2.3.5.1 Parking brake shall be such that the vehicle is kept in place in any loading condition AND without a driver. The driver shall be able to realize the parking brake at the seat. If the trailer is disconnected from the tractor, the trailer of more than 3500 kg shall be able to produce parking brake, AND the parking brake of the trailer shall be able to be operated by a person standing on the floor.

5.2.3.5.2 In case of bench test under no load with one driver in the cab, the sum of the parking brake forces shall be not less than 20% of the vehicle mass which is measured, AND it shall be not less than 15% for the vehicle the total mass of which is less than 1.2 times the unladen mass. The vehicle train which is composed of tractor and trailer shall also comply with this requirement.

5.2.3.5.3 In case of road test under no load, the parking brake shall be able to ensure that the vehicle can remain stationary along the ramp up and ramp down directions of the ramp at a slope of 20% (15% for the vehicle for which the total mass is less than 1.2 times the unladen mass), for at least 5 min.

5.2.3.5.4 The parking brake performance shall be qualified if the requirements of 5.2.3.5.2 or 5.2.3.5.3 are met.

5.2.4 Emission

5.2.4.1 Ignition engine

5.2.4.1.1 The exhaust air pollutants tested by dual idle speed method shall comply with the requirements of GB 18285.

5.2.4.1.2 The exhaust pollutants tested by the simple working condition method shall comply with the limit value requirements of the administrative regions.

5.2.4.2 Compression ignition engine

5.2.4.2.1 The exhaust smoke detected by the free acceleration method shall comply with the requirements of GB 3847.

5.2.4.2.2 The visible pollutants detected by loading deceleration method shall comply with the limit value requirements of the administrative regions.

5.2.5 Steering maneuverability

5.2.5.1 Steering wheel lateral slip

6.2 Tested vehicle

6.2.1 If there is no special instruction in the test method, the vehicle being tested shall be unladen.

6.2.2 The body, cab, engine compartment, compartments, chassis and light-signaling devices of the tested vehicle shall be clean and free of oil stain.

6.2.3 The tested vehicle shall be accompanied with the duplicated copies of the driving permit and the motor vehicle registration certificate as well as the product brochure.

6.3 Uniqueness certification

6.3.1 CHECK and VERIFY whether the license plate number, type, brand model, fuel type, body color, engine number, chassis number or VIN number, trailer bed number, dimension of heavy-to-medium cargo vehicles and trailers, fence height of cargo vehicle and trailer, and the actual seat (sleeper) number of passenger vehicle are in line with the information as recorded in the driving permit, motor vehicle registration certificate, and the road transport permit, as well as other relevant data.

6.3.2 Outer dimensions and the cargo vehicle fence height shall be tested using the following methods:

a) Outer dimensions can be tested by using special equipment OR the steel tape and height gauge:

   1) In case of test by special equipment, CONDUCT test in accordance with the methods as specified in the user's instruction;

      Note: The indication error of the special equipment is ± 0.8% or ± 50 mm in the length direction AND ± 0.8% or ± 20 mm in the width and height direction.

   2) When using steel tape and height gauge, it shall, in a flat field, use plumb to project the vehicle length and width onto the ground, use steel tape or other meters to measure the spacing between the projection points, AND the vehicle height can be directly measured by the steel tape OR otherwise measured by such meters as height gauge.

b) The fence height of the cargo vehicles shall be tested by the special equipment or steel tape.

6.4 System, assembly and device

Visually CHECK whether the gas cylinder is installed firmly and free from such damages as corrosion and deformation, etc., AND whether the gas cylinder drainage (water) valve is smooth.

6.4.3.1.4 Brake pedal

In the cab, visually CHECK whether the brake pedal has rupture, damage, or anti-slip surface grinding.

6.4.3.2 Parking brake

In the cab, visually CHECK whether the parking brake device components are complete and intact; OPERATE the parking brake, to check whether the parking brake is flexible and effective AND whether the pull rod has excessive shaking.

6.4.4 Steering system

6.4.4.1 Component connection

PARK the steering wheel on the chassis clearance tester; OPERATE the skid plate switch to make the steering wheel produce directional displacement with the skid plate; in the trench, visually CHECK whether the components of the steering mechanism is normal in terms of connection, fixation, locking, and limit, AND is there any jamming or movement interference.

6.4.4.2 Component technical conditions

In the trench, visually CHECK whether the steering knuckle, arm, horizontal straight pull rod, steering rocker arm, and ball pin assembly have deformation and welding; USE the hammer knocking and visual inspection methods to check whether the steering knuckle, arm, horizontal straight pull rod, steering rocker arm, and ball pin assembly have visible cracks; OPERATE the chassis clearance tester skid plate switch to make the steering wheel produce directional displacement with the skid plate, and visually CHECK the connections of the steering rocker arm, ball pin assembly and all connection rods have loosening; visually CHECK whether the steering gear housing and side cover have cracks, damages or oil seepage and leakage.

6.4.4.3 Steering assistance device

TURN on the engine and ROTATE leftwards and rightwards the handwheel, to check whether the steering assistance device works normally, AND is there drive belt slip or oil leakage.

6.4.5 Driving system

Visually CHECK whether the shock absorbers are secure and effective AND free from oil leakage.

6.4.6 Drive train

6.4.6.1 Abnormal noise of clutches, transmissions and drive components

In the course of driving of the tested vehicles, CONDUCT the following inspections:

a) CONDUCT gear shifting operation to check whether the engagement of the clutch is stable, whether the disengagement is thorough, whether the operation is light and convenient, AND whether there is abnormal noise, slip, jittering, and heaviness, etc.;

b) CONDUCT gear shifting operation to check whether the transmission operation is light and convenient, AND whether the gear is accurate and free from abnormal noise;

c) CHECK whether the drive shaft, the main reducer and the differential have abnormal noise.

6.4.6.2 Sealability of cardan joints, bearings, and transmission

In the trench, CONDUCT the following inspections:

a) SHAKE the drive shaft to visually check whether the cardan joint and the intermediate bearing have loosening and visible cracks;

b) Visually CHECK whether the transmission has oil drip and leakage.

6.4.7 Lighting, signaling device and identification

6.4.7.1 External lighting and signaling devices

TURN on the external lighting and signaling devices to visually check whether the headlamp, direction-indicator lamp, end-outline marker lamp, hazard warning signal, fog lamp, and other signal devices are complete, intact and effective.

6.4.7.2 Headlamp main-bean and dipped-beam conversion function

OPERATE the main-beam and dipped-beam changeover switch of the headlamp to visually check whether the main-beam and dipped-beam conversion functions are normal.

6.4.7.3 Reflector and side marker lamp

6.4.10.1 Rearview mirrors and under-view mirrors

Visually CHECK the left and right rearview mirrors, internal rearview mirrors, and under-view mirrors of the tested vehicles are intact and free from damage, AND their positions are effectively maintained.

6.4.10.2 Windshield wipers and scrubbers

TURN on the windshield wiper and scrubber to visually check whether the wiper and scrubber are working properly, AND whether the wiper is automatically returned to the initial position when the wiper is turned off.

6.4.10.3 Anti-glare device

Visually CHECK whether the anti-glare device in the cab is complete and effective.

6.4.10.4 Defogging and defrosting device

Visually CHECK whether the defogging and defrosting device of the front windshield are working properly.

6.4.10.5 Exhaust pipe and muffler

DRIVE the tested vehicle above the trench; in the trench, visually CHECK whether the exhaust pipe and muffler are good and effective, secure and reliable.

6.4.11 Safety protection

6.4.11.1 Seat belts

Visually CHECK whether all seats on the passenger vehicles, the cargo vehicle driver's seat, and the front passenger seats are equipped with seat belts, AND whether the accessories are complete, effective, and free from damage.

6.4.11.2 Side protection device

Visually CHECK whether the side protection devices at both sides of category N_2 and N_3 cargo vehicles (except for semi-trailer), category O_3 and O_4 trailer, and in between the tractor and trailer are intact, solid, and effective.

6.4.11.3 Rear protection device

than the upper plane of the vehicle's longitudinal beam. The terminal insulation and spark extinguishing device are intact;

b) The circuit system has a means for cutting off the mains and isolating the electrical spark, which are installed in the cab;

c) The static electricity conducting strip at the rear of the vehicle is complete and effective without damage.

6.4.11.8.2 Visually CHECK whether the marking and identification of the dangerous cargo transport vehicles, explosive and highly toxic chemical transport vehicles, and the liquid dangerous cargo transport tank vehicles are complete, clear, free from damage, and installed in accordance with requirements.

6.4.11.8.3 Visually CHECK whether the tank of the tank (trough) vehicles transporting dangerous cargo has the effective inspection certificate or report as issued by a competent institute with qualification.

6.4.11.8.4 Visually CHECK whether the vehicles that transport large gas cylinders OR with movable tank (trough), etc., are provided with effective fastening means free from loosening.

6.5 Power

6.5.1 Equipment requirements

6.5.1.1 It shall use the chassis dynamometer complying with the requirements of the JT/T 445 to conduct test. AND it shall use the three-axis six-drum chassis dynamometer to test the vehicles equipped with dual-drive axle.

6.5.1.2 The chassis dynamometer shall be able to calculate the power correction coefficient in accordance with such parameters as ambient temperature, humidity, air pressure and so on; AND be able to calculate the loading force of the dynamometer and conduct constant force loading in accordance with the login parameters and information of the vehicle.

6.5.1.3 The static force indication error of chassis dynamometer is ± 1.0%, the constant force control error is ± 20 N, AND the vehicle speed indication error is ± 0.2 km/h or ± 1.0%.

6.5.1.4 The chassis dynamometer shall be capable of displaying the instantaneous loading forces and curves of the power absorber and the instantaneous speed and curve, AND be able to be operated as reminded by the external display equipment.

rated power (or rated torque), the gas vehicle's engine gas rated power (or rated torque), AND the pure electric vehicle power are not evaluated.

6.5.3 Inspection methods

USE the wheel side stable line speed of driving wheel inspection methods as specified in GB/T 18276 to conduct inspection.

6.5.4 Power test of compression ignition engine vehicle

6.5.4.1 Inspection procedure

6.5.4.1.1 PLACE the driving wheel of the tested vehicle on the chassis dynamometer drum; based on the vehicle type, ADJUST the lateral displacement limit and the fixation device; ADD the parking wedge for the non-driving wheel.

6.5.4.1.2 SET the chassis dynamometer at constant force control mode, and ADJUST such parameters as force and speed, etc., to zero.

6.5.4.1.3 When the chassis dynamometer is unladen, START the tested vehicle and MAKE acceleration gradually; SELECT the direct gear to test the maximum stable speed at the maximum throttle state, and USE the equation (4) to calculate the rated power speed. When the maximum stable speed is more than 95 km/h (for dangerous cargo transport vehicles, when the maximum stable speed is more than 80 km/h), it shall shift to a lower gear and re-measure the maximum stable speed.

$$V_e = 0.86 \times V_a \qquad \cdots\cdots (4)$$

Where:

V_e - Rated power speed, in kilometers per hour (km/h);

V_a - The maximum stable speed at the gear with full throttle, in kilometers per hour (km/h).

6.5.4.1.4 After loading constant force gradually onto the chassis dynamometer to the range of (F_E ± 20 N) AND making it stabilize for 3 s, START measuring the vehicle speed; when the speed fluctuation within 3 s does not exceed ± 0.5 km/h, this speed is the driving wheel edge stable speed V_W; AND the test is completed.

Note: The liquefied gas vehicle shall follow the power test method of the compression ignition engine.

η, P_e, V_e, V_W, F_e, F_E, F_{tc}, F_c, F_f, F_t, α_d, ambient temperature, relative humidity, and atmospheric pressure.

6.5.5 Power test of ignition engine vehicle

6.5.5.1 Inspection procedure

6.5.5.1.1 PLACE the driving wheel of the tested vehicle on the chassis dynamometer drum; based on the vehicle type, ADJUST the lateral displacement limit and the fixation device; ADD the parking wedge for the non-driving wheel.

6.5.5.1.2 SET the chassis dynamometer at constant force control mode, and ADJUST such parameters as force and speed, etc., to zero.

6.5.5.1.3 When the chassis dynamometer is unladen, START the tested vehicle and MAKE acceleration gradually; SELECT the gearbox third gear; USE the accelerator pedal to control speed; when the rotation speed of the externally connected tachometer (when the externally connected tachometer cannot stably measure the rotation speed, it may observe the engine tachometer) stably indicate that the engine rated torque speed is n_m, MEASURE the current driving wheel edge linear speed, and RECORD it as the rated torque speed V_m. When the rated torque speed V_m is more than 80 km/h, it shall shift to the lower gear AND re-measure the rated torque speed V_m.

Note: When the rated torque speed is n_{m1} ~ n_{m2}, n_m is taken as the mean value. When n_m is more than 4000 r/min, V_m is measured based on n_m = 4000 r/min.

6.5.5.1.4 DEPRESS the accelerator pedal to make the vehicle speed exceed V_m; after loading constant force gradually onto the chassis dynamometer to the range of (F_m ± 20 N) AND making it stabilize for 3 s, START measuring the vehicle speed; when the speed fluctuation within 3 s does not exceed ± 0.5 km/h, this speed is the driving wheel edge stable speed V_W; AND the test is completed.

Note: The compressed liquefied gas vehicle shall follow the power test method of the ignition engine.

6.5.5.2 Loading force calculation

6.5.5.2.1 The loading force of the power absorber under the test environment is calculated in accordance with the equation (10):

$$F_M = F_m - F_{tc} - F_c - F_f - F_t \qquad \cdots\cdots (10)$$

diameter is 245 mm, the center distance is 460 mm, and the height difference between the main and auxiliary drums is 30 mm, the height difference between the busbar on the auxiliary drum and the ground level is 40^{+5}_{0} mm; when the drum center distance increases or decreases by 10 mm, the height difference between the busbar on the auxiliary drum and the ground level is correspondingly increased or decreased by 2 mm; when the height difference between the main and auxiliary drums reduces by 10 mm, eight difference between the busbar on the auxiliary drum and the ground level is correspondingly increased by 4 mm.

c) The busbars on each drum shall be kept horizontal AND the height difference between the both ends of the busbar on the coaxial drum is not more than ± 3 mm (two measuring ends per drum).

d) The wheel (axle) mass of the multi-axle and parallel-mounted axle shall be respectively measured by the independent wheel mass meter and the composite glaze mass meter. The indication value of the wheel (axle) mass meter is the mass, in kilograms (kg).

Note 1: Two-axle vehicles refer to the two-axle single vehicle other than parallel-mounted axle, including trailers, same as below.

Note 2: Multi-axle and parallel-mounted axle vehicle refers to three-axle and three-axle above single vehicle, vehicle train, and parallel-mounted axle trailer, same as below.

e) When collecting the whole braking process data of the left wheel and the right wheel, the sampling period is 10 ms. Under the non-shutdown protection state, the sampling time is not less than 3 s.

f) The shutdown protection of the left and right drums shall ensure that the maximum braking force of the tested wheel is measured. When controlled by the third drum, the shutdown protection shall initiate when the tire linear speed reduces by 25% ~ 35% relative to the drum design linear speed.

g) The drum surface adhesion coefficient is not less than 0.75, AND the ground in front and rear of the bench shall be subjected to the adhesion coefficient improvement treatment.

h) The drive motor of the left and right drums shall be started separately, with the time interval not less than 1 s.

i) For full-time four-wheel drive vehicles, when it is tested by the use of drum reaction brake test bench, it may add the free drums in front and rear of

6.7.1.2.3 The tested vehicle tire surface shall be dry, clean and free from oil stain, there is no foreign matter insertion in the tire crown pattern AND in between the twin tires, the driving axle tire pattern depth shall be not less than 1.6 mm, AND the air pressure shall comply with the requirements.

6.7.1.2.4 For pneumatic braking vehicles, when it is tested by the drum reaction brake test bench, the gas cylinder shall have sufficient pressure AND ensure that the air pressure is not less than the startup air pressure when the braking performance test is finished.

6.7.1.2.5 The brake pedal switch shall be installed when testing the braking time sequence and braking coordination time of the vehicle train.

6.7.1.2.6 When using the drum reaction brake test bench to test the driving brake and the parking brake, it may use the triangular wedge behind of the non-tested wheel to avoid backwards movement of the wheel.

6.7.1.2.7 When the parallel-mounted double-drive axle is tested by the drum reaction brake test bench, it shall make the inter-axle differential act.

6.7.1.2.8 The test bench rotatory components and the electrical system shall be preheated.

6.7.1.3 Test method of drum reaction brake test bench

6.7.1.3.1 DETERMINE the static wheel mass of each axle of the tested vehicle.

6.7.1.3.2 PLACE the tested wheel between the two drums of the brake test bench; MAKE the transmission at neutral position. At this time, the multi-axle and parallel-mounted axle vehicles shall also use the composite axle mass meter to measure the static axle mass of the tested axle.

6.7.1.3.3 Respectively TURN on the drive motor for the left drum and the right drum of the test bench; after 3 s, slowly DEPRESS the brake pedal as reminded to its uttermost position (as for the hydraulic braking vehicle, it shall keep the specified brake pedal force), and MEASURE the maximum braking force of the left and right wheel as well as the data of the whole braking process; APPLY the parking brake for the parking brake axle, and MEASURE the maximum parking brake force.

6.7.1.3.4 TEST each axle in turn.

6.7.1.3.5 USE the methods as specified below to calculate the static wheel load and the static axle load, the vehicle braking rate, the axle braking rate, the braking unbalance rate, and the parking braking rate:

accordance with the static axle load measured by the independent wheel mass meter.

Note 2: When calculating the vehicle braking rate and the parking braking rate, the vehicle mass is calculated in accordance with the unladen static wheel load as measured by the independent wheel mass meter.

6.7.1.4 Test method by platform brake test bench

6.7.1.4.1 MAKE the tested vehicle in taxiing at the speed of 5 km/h ~ 10 km/h; after making the transmission in the neutral position (OR at “D” gear for the automatic transmission), LET it drive straightly and stably onto the bench.

6.7.1.4.2 When all the wheels are on the brake test bench, suddenly DEPRESS the pedal to stop the vehicle; MEASURE the maximum wheel braking force of each wheel, the data of the whole braking process, and the dynamic and static load; TURN on the vehicle again; after the parking braking axle is one the brake test bench, APPLY the parking braking; MEASURE the braking force of each parking axle.

Note: When the vehicle stops, if the tested wheel leaves from the brake test bench, the braking test is invalid AND it shall conduct measurement again.

6.7.1.4.3 USE the methods as specified below to calculate the static (dynamic) wheel load and the static (dynamic) axle load, the vehicle braking rate, the axle braking rate, the braking unbalance rate, the parking braking rate, the vehicle train braking time sequence, the braking coordination time, and the braking force distribution:

a) Calculation of static (dynamic) wheel load and static (dynamic) axle load: The calculation of static wheel load and static axle load is same as the calculation method using the drum reaction break test bench. The dynamic wheel load is taken as the wheel load corresponding to the time when the coaxial left and right wheel braking force reaches to the maximum value, AND the dynamic axle load is the sum of the dynamic wheel load of the coaxial left and right wheel.

b) Calculation of vehicle braking rate: MEASURE the percentage between the sum of the maximum braking force of each wheel AND the static vehicle mass. When the tractor is connected with the semi-trailer, the calculation of the vehicle braking rate of the tractor and that of the semi-trailer is same as the calculation method of using the drum reaction brake test bench.

c) Calculation of axle braking rate, brake imbalance rate and parking braking rate: It is same as the calculation method using the drum reaction

Note: When the tested vehicle is not suitable for connecting external engine tachometer, it may control the engine speed based on the indicated value of the onboard tachometer.

6.8.2.2 Compression ignition engine vehicle

USE the free acceleration opaque smoke method or the load deceleration method as specified in GB 3847 to conduct test.

6.9 Steering maneuverability

6.9.1 Steering wheel lateral slip

6.9.1.1 Equipment requirements

6.9.1.1.1 USE the two-board linkage slip test bench which is suitable for the single and double steering axle, AND such test bench shall be equipped with the tire lateral stress release function.

6.9.1.1.2 The skid plate shall be kept horizontal, AND the height difference between the two skids shall not exceed 5 mm.

6.9.1.2 Test preparation

6.9.1.2.1 The tested vehicle tire surface is dry, clean and free of oil stain, there is no foreign matter insertion in the tire crown pattern and in between the twin tires, AND the air pressure complies with requirements.

6.9.1.2.2 OPEN the locking mechanism of the lateral slip test bench skid plate.

6.9.1.2.3 The instrument displays the zero position and, if necessary, CONDUCT manual operation to adjust it to zero.

6.9.1.2.4 The lateral slip test bench's electrical system shall be warmed up.

6.9.1.3 Test methods

MAKE the tested vehicle drive straightly along the centerline to pass stably the lateral slip test bench's skid plate at the speed of not more than 5 km/h (it shall neither rotate the handwheel nor apply brake), MEASURE the maximum indicated value of the lateral slip of the steering wheel.

6.9.2 Steering wheel free rotation

Manually and qualitatively CHECK the maximum free rotation of the handwheel. If the free rotation approaches to the specified limit value AND it

6.10.3.4 RECORD the attenuation vibration curve; MEASURE the minimum dynamic wheel load at resonance; CALCULATE and READ the percentage between the minimum dynamic wheel load and the static wheel load as well as the percentage difference of the coaxial left wheel and right wheel.

Note: The ordinate of the attenuation vibration curve is the dynamic wheel load AND the abscissa is the time.

6.11 Headlamp main-beam intensity and irradiation position

6.11.1 Equipment requirements

6.11.1.1 USE the headlamp tester having the luminous intensity and main-beam and dipped-beam irradiation position detection function to conduct the test.

6.11.1.2 When using the automatic headlamp tester, the levelness of the running surface of the guide rail shall not exceed 2 mm/m.

6.11.2 Test preparation

6.11.2.1 The air pressure of all the tires of the tested vehicle complies with requirements.

6.11.2.2 The illuminated face of the headlamp tester AND the headlamp lens of the tested vehicle shall be clean.

6.11.2.3 The headlamp tester shall be warmed up.

6.11.3 Test methods

6.11.3.1 MAKE the tested vehicle travel along the centerline of the guide line AND stop at the specified test position, AND the longitudinal axis of the vehicle shall be parallel with the guide line. If not, RE-PLACE the vehicle or USE the vehicle alignment device to adjust it.

6.11.3.2 The vehicle power is in charging state, the transmission is in neutral gear, AND the headlamp main-beam is turned on.

6.11.3.3 The headlamp tester automatically searches for the tested headlamp AND measures its main-beam luminous intensity. As for the headlamp for which the main-beam can be independently adjusted, it shall also measure the main-beam irradiation position deviation.

6.11.3.4 CHANGE the tested headlamp to dipped-beam, AND the automatic headlamp tester automatically measures the irradiation position deviation at the dipped-beam light and shade cut-off line's deflection point.

6.13.3.2 PLACE the wheels of the tested axle onto the brake test bench drum, MAKE the transmission in neutral gear, and SET the data acquisition system at zero.

6.13.3.3 START the drive motor of the left drum and right drum of the test bench; after 2 s, START sampling for at least 5 s; MEASURE the average value of the drag force of each wheel in the sampling process.

6.13.3.4 In accordance with 6.13.3.2 and 6.13.3.3, CHECK the drag force of the wheels of each axle in turn.

6.13.3.5 CALCULATE the percentage of the average value of the drag force of each wheel AND the static axle load.

Note 1: Since there is a height difference between the busbar of the auxiliary drum of the drum reaction brake test bench and the ground horizontal plane, as for the multi-axle and the parallel-mounted axle vehicles, when calculating the wheel drag ratio, the static axle load is calculated based on the static axle load as measured by the composite axle mass meter.

Note 2: The wheel drag ratio test is conducted in synchronization with 6.7.1.3. Firstly TEST the coaxial wheel drag ratio and then TEST the driving brake and parking brake of this axle. The same test procedures may be combined.

6.14 Horn

6.14.1 Equipment requirements

USE the sound level meter to test the sound pressure level of the horn.

6.14.2 Test methods

6.14.2.1 PLACE the sound level meter at 2 m in front of the tested vehicle, with the microphone 1.2 m high above ground towards the driver's position of the tested vehicle.

6.14.2.2 ADJUST the sound level meter to the A-level weight and fast stop position.

6.14.2.3 SOUND the horn and MAKE it in sounding for more than 3 s; MEASURE the sound pressure level.

b) When the axle braking rate is disqualified, RE-CHECK the axle braking rate, braking unbalance rate and the coaxial wheel drag ratio, and CALCULATE the vehicle braking rate again after the replacement or repair;

c) When the parking brake rate is disqualified, RE-CHECK the parking brake rate after the replacement or repair;

d) When the coaxial wheel drag ratio is disqualified, RE-CHECK the wheel drag ratio, axle braking rate, and braking unbalance rate of this axle, and CALCULATE the vehicle braking rate again after the replacement or repair.

8 Transition period requirements for standard implementation

8.1 The following requirements apply for the application in road transport vehicles at the seventh month from the date of implementation of this standard:

- 4.2.1 Requirements for the installation of anti-lock brakes for category M_2 and M_3 passenger vehicles, category N_2 and category N_3 cargo vehicles, dangerous cargo transport vehicles, category O_3 and O_4 trailers, and passenger vehicles not exceeding four axles;

- 4.2.2 Requirements for the installation of disc brake in the front wheels of the passenger vehicles of length more than 9 m AND dangerous cargo transport vehicles;

- 4.2.3 Requirements for the installation of retarder and other auxiliary brake of the passenger vehicles of length more than 9 m AND category N_3 cargo vehicles (including dangerous cargo transport vehicles);

- 4.2.4 Requirements for the installation of the brake clearance automatic adjustment device of all the driving brake of the category M_2 and M_3 passenger vehicles, category N_2 and N_3 cargo vehicles, passenger cars and dangerous cargo transport vehicles;

- 4.3.1 Requirements for the inflammability speed of the interior decorative materials of passenger vehicle;

- 4.3.3 Requirements for the installation of the thermal insulation plate or the flame retardant thermal insulation materials above the installation position of the eddy current retarder;

Appendix A

(Normative)

Road transport vehicle manual inspection record sheet

A.1 The content requirements of the road transport vehicle manual inspection record sheet are as shown in Table A.1.

A.2 The contents of Table A.1 are mandatory, BUT their format can be adjusted. It is recommended to use a wide paper to contain all the information into one page when printing the record sheet.

A.3 For a vehicle train, it shall fill the tractor license plate number and the trailer license plate number.

A.4 In the "property" column of the Table A.1, the items marked with "★" are key items AND the items marked with "■" are general items; AND in the "judgment items", "○" refers to qualified items, "X" refers to disqualified items, and "/" refers to none applicable items.

A.5 In the disqualified item collection column, those filled with disqualified item number is separated by ",", AND it shall fill "none" if there is no disqualified item. ADD "G" in front of the disqualified item number of the trailer.

A.6 In the tread pattern depth data column, those recording the wheel positions are expressed by two-digit code "□□", after which ":" is used to separate it from the recorded data. The first bit of the code represents the axle on which the wheel is installed (the linear axle vehicle is based on line), expressed by A, B, C, D……beginning from axle 1 (or line 1); AND the second bit of the code represents the position of the axle (or line) on which the wheel is installed, expressed using 1, 2, 3… from left to right in turn.

A.7 During the manual test process, it may record, access, and measure the relevant information and data of the tested vehicle in Table B.1 in the synchronization manner, AND login the computer system.

A.8 This record sheet is used as the attachment to Appendix C.

Appendix B

(Normative)

Road transport vehicle performance test record sheet

B.1 Format of test record sheet

The format of the road transport vehicle performance test record sheet is as shown in Table B.1.

B.2 Printing requirements of test record sheet

B.2.1 Vehicle information

For vehicle trains, PRINT such vehicle main information as “vehicle model”, “VTN number [translator note: should be VIN number]”, “body color”, “vehicle exit-factory date”, and “registration date”, etc.

B.2.2 Test category

PRINT the corresponding categories, such as “technical rating assessment”, “class-II maintenance completion quality inspection”, and “vehicle overhaul completion quality inspection”, etc.

B.2.3 Business Type

PRINT vehicle business attributes: “application” for the application in road transport vehicles, AND “in use” for the road transport vehicles in use.

B.2.4 Test line

If the test unit has only one test line, it may not be printed; when it has two test lines and above, NUMBER the test line in alphabetical order from the capital letter A, and PRINT the number.

B.2.5 Test date

PRINT the vehicle test off-line date, in the format of “YYYY-MM-DD hh: mm: ss”.

B.2.6 Steering axle suspension form

PRINT the letter “independent” or “non-independent”.

For vehicles for which the speedometer cannot be tested on line, if the relevant management department or the entrusted test institute have requirements, it may use the road test to test the speedometer, at this time the road test values can be filled in the “speedometer” column of the report sheet, BUT it shall add the note of “road” in front of data to facilitate distinguishing from the bench test data.

B.2.18 Lateral slip

In the case of lateral slip test, as for the motor vehicles for which the front axle uses independent suspension, only the test result data is printed for the lateral slip column, AND the item judgment column is not printed. When the lateral slip plate moves outwards, ADD “+” in front of the printed data; when the lateral slip plate moves inwards, ADD “-” in front of the printed data.

B.2.19 Road test brake performance

B.2.19.1 When using the five-wheel instrument and non-contact speedometer to conduct test, PRINT the braking distance (m) and the braking stability (printing “stable” OR “instable”).

B.2.19.2 When using the portable braking performance tester to conduct test, PRINT MFDD (m/s^2), the vehicle train coordination time (s), and the brake stability.

B.2.19.3 When using the road test to test the parking brake performance, as for the ramp parking duration not less than 5 min, PRINT “ramp sliding” or “no ramp sliding”.

B.2.20 Collection of disqualified items

USE “,” to separate different “disqualified items” in the printed Table B.1; and PRINT “none” if there is no disqualified items. ADD “G” in front of the disqualified items of trailer.

B.2.21 Test station photo

PRINT brake test, lighting test, power test station, and real-time test photo of the tested vehicle at an angle 45 ° in front left of the vehicle, AND the license plate number of the tested vehicle shall be clear and visible.

B.2.22 Judgement

In the “judgment” column of Table A.1, “○” refers to qualified item, “×” refers to disqualified item; “-” refers to non-tested item; “#” refers to disqualification of individual indicator; “/” refers to non-applicable item. As for the technical rating

Appendix C

(Normative)

Road transport vehicle comprehensive performance test report sheet

C.1 Format of test report

The format and data fill requirements for the road transport vehicle comprehensive performance test report are shown in Table C.1.

C.2 Test report printing requirements

C.2.1 Paper

Road transport vehicle comprehensive performance test report is printed using A4 paper.

C.2.2 Test report number

Arrangement rules: “region code (6 digits)” + “test institute code (3 digits)” + year month day (YYYYMMDD) + “test number (4 digits)”, wherein the “test number” is printed in the order of the daily vehicle test quantity.

C.2.3 Trailer basic information

If the test does not contain trailers, then all items in this column are printed with “-“.

C.2.4 Test category

PRINT the corresponding categories, such as “technical rating assessment”, “class 2 maintenance complete quality inspection”, and “vehicle overhaul completion quality inspection”, etc.

C.2.5 Business Type

PRINT the tested vehicle attributes: “application” for the in application in road transport vehicles; AND “in use” for the road transport vehicles in use.

C.2.6 Test date

PRINT the vehicle test and off-line time, in the form of “YYYY-MM-DD hh: mm: ss”.

C.2.7 Manual test results

PRINT the actually conducted manual test items in the “manual test result” column. When the “test category” is “technical rating assessment”, it is required to print the “verification assessment” item for the application in road transport vehicles; PRINT the final test results in the “judgment” column. When the test is qualified, PRINT “qualified” in the “assessment” column and “none” in the “disqualified item” column; when the test is disqualified, PRINT “disqualified” in the “assessment” column and FILL the disqualified item name in the “disqualified item” column, such as the braking pipeline and drive part abnormal noise, etc., in between which “,” is used for separation purposes. As for the disqualified items of trailer by manual test, PRINT the “(Trailer)” plus the disqualified item name.

C.2.8 Performance test results

In the “performance test results” column, PRINT only the actually conducted test items and their test data, counting from the sequence number of 1, which is automatically generated by computer software and sequenced; in the “standard limit value” column, PRINT the items and parameter limit values as specified in this standard; in the “judgment” column, PRINT the assessment results of the corresponding items, that is, “qualified” and “disqualified”; when the “test category” is the “technical rating assessment”, as for the items deemed as qualified and the items deemed as of same level, PRINT “1” in the corresponding “test data” column, and “qualified” or “level I” in the “judgment” column.

C.2.9 Remarks

In the “remarks” column, PRINT such information as vehicle replacement or repair suggestions, explanatory notes, or tips, etc.; as for the qualified vehicles, this column can be empty.

Since the height of the main beam center of the headlamp above ground is lower than the dipped-beam light and shadow cut-off line angle OR when the main beam vertical offset is disqualified due to the center point height above ground, it shall note “Main beam is lower than dipped-beam” in the remark column.

C.2.10 Test conclusions

Verification of the inspection results: the vehicle inspection conclusions, such as "qualified", "unqualified", "first" or "two", "authorized signatory" signature confirmation, marking the date of issuance, and stamped with inspection agencies Special chapter.

C.2.11 Other relevant information

C.2.11.1 This report sheet shall be stamped with a test dedicated seal. Data correction, partial copy and full copy not re-sealed are invalid.

C.2.11.2 This report is made in triplicate: one copy for the principal, one copy for the test institute, AND one copy for the road transport administration, wherein the report for the principle and the test institute shall be written test report AND the road transport administration may use electronic test report.

C.2.11.3 If there is any objection to this report, it may be submitted to the test institute within 10 days from the date of issuance of the report; otherwise it shall be deemed to have been confirmed if overdue. Those who are dissatisfied with the test service quality, it may make compliant against the local road transport administration.

Table C.1 Road transport vehicle comprehensive performance test report

Report No.:_____

<table>
<tr><td colspan="6">I. Basic information of single vehicle (tractor)</td></tr>
<tr><td>License plate number</td><td></td><td>Principal</td><td colspan="3"></td></tr>
<tr><td>Vehicle type</td><td></td><td>Brand/model</td><td></td><td>Operation certificate number</td><td></td></tr>
<tr><td>Registration date</td><td></td><td>Exit-factory date</td><td></td><td>Body color</td><td></td></tr>
<tr><td>VIN</td><td></td><td>Engine number</td><td></td><td>Administrative region</td><td></td></tr>
<tr><td colspan="6">II. Basic information of trailer</td></tr>
<tr><td>License plate number</td><td></td><td>Principal</td><td colspan="3"></td></tr>
<tr><td>Vehicle type</td><td></td><td>Brand/model</td><td></td><td>Operation certificate number</td><td></td></tr>
<tr><td>Registration date</td><td></td><td>Exit-factory date</td><td></td><td>Body color</td><td></td></tr>
<tr><td>Valid driving permit</td><td colspan="5"></td></tr>
<tr><td colspan="6">III. Test business information</td></tr>
<tr><td>Test category</td><td></td><td>Business type</td><td></td><td>Test date</td><td></td></tr>
<tr><td colspan="6">IV. Manual test results</td></tr>
<tr><td>No.</td><td colspan="2">Test item</td><td>Judgment</td><td colspan="2">Disqualified items</td></tr>
<tr><td>1</td><td colspan="2">Uniqueness certification</td><td></td><td colspan="2"></td></tr>
<tr><td>2</td><td colspan="2">Fault information diagnosis</td><td></td><td colspan="2"></td></tr>
<tr><td>3</td><td colspan="2">Appearance inspection</td><td></td><td colspan="2"></td></tr>
<tr><td>4</td><td colspan="2">Operation inspection</td><td></td><td colspan="2"></td></tr>
<tr><td>5</td><td colspan="2">Chassis inspection</td><td></td><td colspan="2"></td></tr>
</table>

						m)			
	Tractor/train vehicle braking rate ratio (%)	XX.X	≥ XX			Right external headlamp dipped-beam vertical offset (H)	X.XXX	X.XX ~ X.XX	
	Trailer/train vehicle braking rate ratio (%)	XX.X	≥ XX			Right external headlamp dipped-beam horizontal offset (mm/10 m)	Left (right) XXX	Left XXX ~ right XXX	

Table c.1 (continued)

No.	Test item	Test data	Standard limit value	Judgment	No.	Test item	Test data	Standard limit value	Judgment
	Road test MFDD (m/s^2)	XX.XX	≥ X.X			Right internal headlamp main beam intensity (cd)	XXXXX	≥ XXXXXX	
	Road test braking stability	(Not) stable	Stable			Right internal headlamp main beam vertical offset (H)	X.XXX	X.XX ~ X.XX	
	Road test ramp parking condition	(No) sliding	No sliding			Right internal headlamp main beam horizontal offset (mm/10 m)	Left (right) XXX	Left XXX ~ right XXX	
	Road test braking distance /m	XX.X	≤ XX.X			Speedometer (km/h)	XX.X	XX.X ~ XX.X	
	First steering wheel lateral slip (m/km)	- (+) XX.X	- X ~ + X			Horn sound pressure level (dB(A))	XXX.X	XX ~ XXX	
	Second steering wheel lateral slip (m/km)	- (+) XX.X	- X ~ + X						
VI. Remarks									
VII. Test conclusions									
Authorized signing person: Test institute name (chopping) YYYY MM DD									

_____ END _____

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