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AUTOMOBILE INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

QC/T 754-2006

Specifications for liquefied natural gas vehicle

液化天然气汽车定型试验规程

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Foreword

This Standard is formulated for the first time.

This Standard was proposed by and shall be under the jurisdiction of China Auto Standardization Committee.

Drafting organization of this Standard: National Car Quality Supervision and Inspection Center.

Main drafters of this Standard: ZHANG Xiaohui, Feng Yi, Chen Song, Gu Yanping, Liu Guibin, MA Zonghua and ZHANG Fuxing.

This Standard shall be responsibly interpreted by China Auto Technical Committee for Standardization.

Specifications for liquefied natural gas vehicle

1 Scope

This Standard specifies the type approval test's implementation conditions, test items, procedures, methods, and contents of the test report of Liquefied Natural Gas Vehicles.

This Standard is applicable to Category M and Category N vehicles, which have been type-approved, and which have been installed with special equipment for single-fuel, dual-use fuel and dual-fuel of Liquefied Natural Gas.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB1495 Limits and measurement methods for noise emitted by accelerating motor vehicles

GB 3847 Limits and measurement methods for exhaust visible pollutants from compression ignition (C.I.) engines and vehicles equipped with C.I. engines

GB/T 6323.4~6323.6 Controllability and stability test procedure for automobiles

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

GB/T 12535 Motor vehicles - Starting performance - Test methods

GB/T 12536 Motor vehicles - Coast - down - Test method

GB/T 12539 Motor vehicles - Steep hill climbing - Test method

GB/T 12543 Motor vehicles - Acceleration performance - Test method

GB/T 12544 Motor vehicles - Maximum speed - Test method

GB/T 12545.1 Passenger car - Fuel consumption test method

GB/T 12545.2 Commercial vehicle - Fuel consumption test method

- GB/T 12547 Motor vehicles Minimum stable speed Test method
- GB/T 12673 Motor vehicles Basic dimensions Measuring method
- GB/T 12674 Motor vehicles Weight parameter Measuring method
- GB/T 12677 Motor vehicles Technical condition Inspection method
- GB/T 12678 Reliability running test method for automobiles
- GB 14762 Limits and measurement methods for exhaust emissions from positive ignition (P.I.) engines of vehicles and vehicles equipped with P.I. Engines
- GB 17691 Limits and measurement methods for exhaust pollutants from compression ignition(C.I.) engines of vehicles
- GB 18285 Limits and measurement methods for exhausts of pollutants from in use vehicles
- GB 18352 Limits and measurement methods for emissions of pollutants from light duty vehicles(I)
- GB/T 19204 General characteristics of liquefied natural gas
- GB/T 20734 Mounting requirements for liquefied natural gas vehicle special equipment
- QC/T 755 Technology requirements of special equipment for LNG vehicle
- QC/T 900 1990 Quality test assessment method for automotive products

3 Implementation conditions

- **3.1** Sample cars for testing can apply for type approval test as long as they can meet the requirements of the design specification, the design drawing and the technical conditions.
- 3.2 There shall be more than two sample cars for the type approval test.
- **3.3** Before the type approval test, the manufacturing organization shall provide the following documents:
 - a) Design specification and technical condition approved according to prescribed procedures;
 - b) Assembly and adjustment technical conditions;
 - c) Operation and maintenance instructions;
 - d) Manufacturing and assembly adjustment records for sample cars for type approval

stipulations of GB17691.

- **4.5** Driving inspection of motor vehicles' technical condition shall be done in accordance with stipulations of GB/T 12677.
- **4.6** Vehicles' noise measurement shall be done respectively, when all kinds of fuel are used, according to GB1495.
- 4.7 Coast down test shall be done according to regulations of GB/T 12536.
- **4.8** Dynamic test: Dynamic tests shall be done respectively, when all kinds of fuels are used. The test items shall include:
- 4.8.1 Minimum stable speed test of direct gear shall be done according to GB/T 12547.
- **4.8.2** Acceleration performance shall be tested according to GB/T 12543. The test items shall include:
 - a) Acceleration performance test of direct gear (or common gear);
 - b) Acceleration performance test of standing-start continuous gear shift.
- 4.8.3 Maximum speed test shall be done according to regulations of GB/T 12544.
- **4.8.4** Maximum steep hill climbing test shall be done according to regulations of GB/T 12539.
- **4.9** Fuel consumption test shall be done according to regulations of GB/T 12545.1 \sim GB/T 12545.2.

Fuel economic performance tests shall be done respectively, when all kinds of fuels are used. Test items shall, under limited conditions, include the average fuel consumption, constant speed fuel consumption and driving-condition-mode fuel consumption.

- **4.10** Controllability and stability test shall be done according to regulations of GB/T 6323.4~6323.6. If the axle load change of vehicles exceeds 5%, compared with the original vehicle under the condition of full load, then this test shall be done.
- **4.11** Braking performance testing shall be done according to regulations of GB 7258.
- **4.12** Starting performance test of different fuels shall be done according to regulations of GB/T 12535.
- 4.13 Reliability driving test:
- **4.13.1** Reliability driving test can be done in the vehicle testing ground; the mileage allocation can be seen in Table 1. The test can also be done on the conventional reliability test road; its mileage allocation can be seen in Table 2. Besides, the reliability driving test

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