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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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# Limits and measurement methods for exhaust smoke emissions from motorcycles and mopeds

摩托车和轻便摩托车排气烟度排放限值及测量方法

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General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China.

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#### **Announcement of State Environmental Protection Administration**

No.21 of 2005

In order to implement the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, prevent and control environmental pollution, protect and improve the living environment and ecological environment, protect human health, it is hereby approved that four standards, including the "Limits and measurement methods for exhaust pollutants from compression ignition and gas fueled positive ignition engines of vehicles (III, IV, V)", as the national pollutant discharge standards. They are jointly issued by the State Environmental Protection Administration and the General Administration of Quality Supervision, Inspection and Quarantine.

The standard names, numbers, implementation plans are as follows:

1. Limits and measurement methods for exhaust pollutants from compression ignition and gas fueled positive ignition engines of vehicles (III, IV, V) (GB 17691-2005)

It is implemented from January 1, 2007. Since the date of implementation, it will replace the gas fueled ignition engine part in the "Limits and measurement methods for exhaust pollutants from compression ignition (C.I.) engines of vehicles (GB 17691-2001)" and the "Limits and measurement methods for exhaust emissions from positive ignition (P.I.) engines of vehicles and vehicles equipped with P.I. Engines (GB 14762-2002)".

2. Limits and measurement methods for exhaust smoke from C.I.E. (Compression Ignition Engine) and vehicle equipped with C.I.E. (GB 3847-2005)

It is implemented from July 1, 2005. Since the date of implementation, it will replace the automobiles equipped with compression ignition engines, in the "Limits and measurement methods for exhaust visible pollutants from compression ignition (C.I.) engines and vehicles equipped with C.I. engines (GB 3847-1999)", "Emission standard for smoke at full load from diesel engine of vehicle (GB 14761.7-93)", "Measurement method for smoke at full load from automotive diesel engine (GB 3847-83)", "Emission standard for smoke at free acceleration from vehicle with diesel engine (GB 14761.6-93)", "Measurement method for smoke exhausted from vehicle with diesel engine at free acceleration – Filter meter" (GB/T 3846-93)", "Limits and measurement methods for exhausts of pollutants from in-use vehicles (GB 18285-2000)".

3. Limits and measurement methods for exhaust pollutants from vehicles equipped ignition engine under two-speed idle conditions and simple driving mode conditions (GB 18285-2005)

It is implemented from July 1, 2005. Since the date of implementation, it will replace the automobiles equipped with ignition engines "Emission standard for pollutants at idle speed from vehicle with petrol engine (GB 14761.5-93)", "Measurement method for pollutants at idle speed from vehicle with petrol engine (GB/T 3845-93)", "Limits and measurement

# Limits and measurement methods for exhaust smoke emissions from motorcycles and mopeds

## 1 Scope

This standard specifies the motorcycles and mopeds' type approval, production consistency inspection, and limits and measurement methods for exhaust smoke emission of in-use vehicles.

This standard is applicable to all types of motorcycles and mopeds.

#### 2 Normative reference

The provisions in the following documents are quoted in this standard and become the provisions of this standard. For the undated reference, the latest versions are applicable to this standard.

GB14622 Limits and measurement methods for exhaust pollutants emissions from motorcycles (Operating condition methods)

GB 17930 Unleaded gasoline for vehicles

SH/T 0675 Air-cooled 2-stroke gasoline and engine oil

#### 3 Terms and definitions

The following terms and definitions are applicable to this standard:

#### 3.1 Motorcycles and mopeds

Motorcycle: A two-wheeled or three-wheeled motor vehicle that is equipped with a spark ignition engine, with weight of entire vehicle smaller than 400kg, engine capacity larger than 50ml or maximum designed speed larger than 50km/h.

Moped: A two-wheeled or three-wheeled motor vehicle that is equipped with a spark ignition engine, with weight of entire vehicle smaller than 400kg, engine capacity not more than 50ml or maximum designed speed not more than 50km/h.

#### 3.2 opacity N(%)

Opacity refers to the ratio of the light emitted by the light source that cannot pass through the smoke exhaust, expressed as a percentage. It is 0% when the light is completely transmitted, and 100% when it is not transmitted at all.

#### 3.3 effective optical path length L (m)

Effective optical path length refers to the length of the light beam crossed by the smoke exhaust between the light source and the light-receiving element. This length has been corrected for the inhomogeneity caused by density gradients and edge effects.

- **5.1.3** Before the test, the vehicle under inspection must be subjected to running-in in accordance with the stipulations of the enterprise's product instruction manual. If the manufacturer agrees, the vehicle under inspection may be exempted from the running-in.
- **5.1.4** In accordance with the measurement method in Appendix A, carry out the type approval test of exhaust smoke emission of motorcycles and mopeds.
- **5.1.5** For the application for type approval and the extension of type approval, refer to the relevant clauses in GB 14622.

#### **5.2 Production Conformity Inspection Test**

Production conformity inspection test refers to the test of inspecting the exhaust smoke emission of motorcycles and mopeds produced in batches by manufacturing enterprises.

- **5.2.1** For batches of motorcycles and mopeds that have passed the type approval test under this Standard and have been approved for production, all parts that affect the exhaust smoke of the engine shall be consistent with those of the sample vehicles that have undergone the type approval test.
- **5.2.2** In order to verify the consistency specified in 5.2.1, a sample vehicle shall be taken from the mass-produced products.
- **5.2.3** In accordance with the stipulations of 5.1.3, conduct the running-in.
- **5.2.4** In accordance with the measurement method in Appendix A, conduct a production conformity inspection test on the exhaust smoke emission of motorcycles and mopeds.
- **5.2.5** To judge whether the mass-produced products are qualified or not, refer to 6.3.2 in GB 14622.

#### 5.3 In-use Vehicle Inspection Test

In-use vehicle inspection test refers to the inspection test of exhaust smoke emission of motorcycles and mopeds with registered license plates.

- **5.3.1** By means of visual inspection and test run, check whether the parts and engines of motorcycles and mopeds are normally operating, and it is allowed to adjust or replace parts.
- **5.3.2** In accordance with the measurement method in Appendix A, conduct the in-use vehicle inspection test on the exhaust smoke emission of motorcycles and mopeds.

#### 6 Test Method

The measurement method for the exhaust smoke concentration of motorcycles and mopeds under the snap-acceleration condition shall comply with the stipulations of Appendix A.

# 7 Implementation of Standard

The manufacturers of motorcycles and mopeds shall submit an application for type approval to the competent department in charge of type approval for the exhaust smoke emission level of

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