



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

GB 3847-2018

**Limits and measurement methods for emissions from diesel
vehicles under free acceleration and lugdown cycle**

Issued on: November 19, 2018

Implemented on: April 1, 2019

Issued by: SAMR; SAC

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1 Scope

This standard specifies the limits and measurement methods for emissions from diesel vehicles under free acceleration and lugdown cycle, as well as the method and judgment basis of appearance inspection and OBD inspection of diesel vehicle.

This standard is applicable to the inspection for new produced vehicle at end of production line, inspection for register vehicle, inspection for in-use vehicle.

This standard also applies to other vehicles equipped with compression ignition engines.

This standard does not apply to low-speed trucks and three-wheeled vehicles.

2 Normative references

The contents of this standard refer to the following documents or their terms.

For undated references, the valid versions are applicable to this standard.

GB/T 5181-2001 Automotive emission - Terms and definitions

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

GB 17691 Limits and measurement methods for exhaust pollutants from compression ignition and gas fueled positive ignition engines of vehicles

GB 17691-2018 Limits and measurement methods for emissions from diesel fueled heavy-duty vehicles (CHINA VI)

GB/T 17692 Measurement methods of net power for automotive engines

GB 18352 Limits and measurement methods for emissions of pollutants from light-duty vehicles

GB 19147 Automobile diesel fuels HJ 437 Technical specification for on-board diagnostic (OBD) system of compression ignition and gas fueled positive ignition engines of vehicles

HJ 845-2017 Measurement methods and technical requirements for emission pollutants from diesel vehicles (remote sensing method)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Net power The net engine power as measured according to GB/T 17692.

3.2 Compression ignition engine An engine that operates on a compression ignition principle (e.g., a diesel engine).

3.3 Opacity meter The instrument as specified in Appendix C for continuous measurement of the optical absorption coefficient of automobile emissions.

3.4 Maximum rated engine speed It refers to the maximum full-load speed as allowed by the diesel engine.

4.2 The entry inspection of the new produced imported vehicles shall be carried

out in accordance with the inspection items as specified in Table 1. It shall also comply with other standards and regulations.

5.1.1 The production enterprise shall ensure that the pollutant control devices

of all vehicles at end of production line are consistent with the of the vehicle-accompanied list.

5.1.5 The imported vehicles shall, before entry, be subjected to the inspection

for new produced vehicles at end of production line. Meanwhile it shall report the inspection information to the competent department of ecological environment.

5.2 The inspection items for registration shall be carried out in accordance with

the provisions of Table 1. The information shall be submitted in accordance with the provisions of Appendix G. The inspection process is as shown in Figure 2.

5.3 The inspection items of the in-use vehicle shall be carried out in accordance

with the provisions of Table 1. Before the inspection, it shall connect the environmental network for verification, to check whether the vehicle has any environmental violation records. According to the provisions of Appendix G, submit the information. The inspection process is as shown in Figure 3.

6.2.2 Check whether the vehicle's pollution control device and the engine are

consistent with the vehicle environmental identification document.

6.3.1 Check whether the condition of the vehicle under inspection is normal. If

there is any abnormality, it shall request the owner to carry out maintenance.

6.3.2 Check whether the vehicle has burning engine oil or serious black smoke.

If it is, it shall request the owner to carry out maintenance.

6.3.6 During the inspection of the change registration and transfer registration, it shall check whether the pollution control device is in good condition.

7.1 Offline of new produced vehicles

The automobile manufacturer shall check the OBD system's communication of each vehicle, to confirm that the OBD system's communication is normal before exit-factory.

8.1.1 Offline of new produced vehicles

Follow the requirements to carry out sampling test of the vehicle's emission at the end of the product line. The emission result shall be less than the emission limit as specified in

8.1.2. Production enterprises may also use other methods for emission testing, but shall demonstrate their equivalence.

8.1.2 Registration and in-use vehicles

Hybrid electric vehicles which has manual selection of driving mode shall be switched to the maximum fuel consumption mode for testing. In the absence of maximum fuel consumption mode, it shall be switched to the hybrid mode for testing. In the course of testing, if the engine is automatically turned off and automatically switches to the pure electric mode, there is no need to suspend the test and it can be carried out until the end of the test.

8.2.1 If any of the pollutant testing results do not meet the limit requirements, it is determined that the emission test is unqualified.

8.2.2 If the vehicle's emissions have obvious visible smoke or the blackness

values exceeding Ringelmann level 1, it is determined that the emission test is unqualified.

8.2.2 [translator's note. should be 8.2.3] In the power sweep course of the lugdown method, the measurement result of the wheel power after correction shall be not less than 40% of the rated power of engine as specified by the manufacturer. Otherwise, it is determined that the testing result is unqualified.

8.2.5 [translator's note. should be 8.2.6] It is forbidden to use a failure strategy that reduces the effectiveness of the emission control device. All tampering for pollution control devices will lead to unqualified emission test.

9 Requirements for data recording, storage, submission

9.1 It shall use the computer system to automatically detect, record, transmit, save, judge the OBD inspection (if applicable) and emission pollutant testing information.

9.2 The inspection agency shall transmit inspection information to the

competent department of ecological environment in real time.

9.3 The competent department of ecological environment at a lower level shall, in accordance with the provisions of Appendix F and Appendix G, report the inspection information to the competent department of ecological environment at a higher level in real time or at specified period.

9.4 The retention period of paper archives of inspection reports shall be not less

than 6 years. The retention period of electronic archives shall be not less than