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NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW JERSEY ADMINISTRATIVE CODE
TITLE 7, CHAPTER 27B, SUBCHAPTER 5
AIR TEST METHOD 5: TESTING PROCEDURES FOR GASOLINE-FUELED
MOTOR VEHICLES

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7:27B-5.1 Definitions

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

“Crankcase emissions” means substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

“Data link connector” or “DLC” means a standardized nine- or 16-pin diagnostic test receptacle used to connect an analyzer to a motor vehicle.

“Department” means the New Jersey Department of Environmental Protection.

“Emission control apparatus” means any device utilized by the vehicle manufacturer and/or the engine manufacturer to control the emission of any regulated emission, including any associated component which monitors the function and maintenance of such a device.

“EPA” means the United States Environmental Protection Agency.

“Gasoline-fueled” means powered in whole or in part by a hydrocarbon fuel other than diesel fuel, including, but not limited to, gasoline, natural gas, liquefied petroleum gas or propane or powered by alcohol fuels, hydrocarbon-alcohol fuel blends or hydrogen.

“Heavy-duty gasoline-fueled vehicle” or “HDGV” means a gasoline-fueled motor vehicle that has a GVWR exceeding 8,500 pounds and is designed primarily for transporting persons or property.

“Hydrocarbons (HC)” means any compound or mixture of compounds whose molecules consist of atoms of hydrogen and carbon only.

“Inspector” means any person authorized by the State of New Jersey to determine whether a vehicle complies with the requirements of N.J.A.C. 7:27-15.

“Key on engine off” or “KOEO” means the motor vehicle ignition position of key-on, engine-off. This may be denoted on some ignitions by a “run” position and is the key position just prior to holding the key in the “start” position to start the engine. Although this is the same key position as KOER, the KOEO position implies that the motor vehicle engine is not running.

“Key on engine running” or “KOER” means the motor vehicle ignition position of key-on, engine-running. This may be denoted on some ignitions by a “run” position and is the key position just prior to holding the key in the “start” position to start the engine.

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Although this is the same key position as KOEO, the KOER position implies that the motor vehicle engine is running.

“Light-duty gasoline-fueled truck” or “LDGT” means a gasoline-fueled motor vehicle that has a GVWR of 8,500 pounds or less, a vehicle curb weight of 6,000 pounds or less, and a basic frontal area of 45 square feet or less, and that is:

1. Designed primarily for the transportation of property or more than 12 passengers; or
2. Available with special features enabling off-street or off-highway operation and use.

“Light-duty gasoline-fueled truck 1” or “LDGT1” means a light-duty gasoline-fueled truck with a GVWR of 6,000 pounds or less.

“Light-duty gasoline-fueled truck 2” or “LDGT2” means a light-duty gasoline-fueled truck with a GVWR of more than 6,000 pounds.

“Light-duty gasoline-fueled vehicle” or “LDGV” means a gasoline-fueled motor vehicle that has a GVWR of 8,500 pounds or less, is designed primarily for use as a passenger car or is a passenger car derivative and is capable of seating no more than 12 passengers.

“Malfunction indicator light” or “MIL” means the light located on the dashboard instrument panel of an OBD-equipped motor vehicle that indicates a malfunction detected by the OBD system by illuminating the words “check engine,” “service engine,” or an engine pictograph with the word “check” or “service.”

“Motor vehicle testing equipment” means equipment used to conduct a test of a gasoline-fueled motor vehicle set forth at N.J.A.C. 7:27B-5, and which satisfies all applicable specifications set forth at N.J.A.C. 7:27B-5.8, Specifications for motor vehicle testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program. For motor vehicle inspections conducted pursuant to N.J.A.C. 7:27-15 and this subchapter, this term shall include all devices used for performing a motor vehicle inspection, including, but not limited to, exhaust gas analyzers, dynamometers, on-board diagnostic scanners and analyzers, fuel cap leak testers and computers and related software.

“OBD-eligible” means capable of receiving an OBD inspection as determined by the Department in accordance with N.J.A.C. 7:27-15.5(j).

“On-board diagnostics” or “OBD” means an automotive diagnostic system complying with California OBD regulations at Title 13 California Code section 1968.1 or EPA OBD regulations at 40 CFR Part 86.

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“Readiness” means the state of a motor vehicle’s OBD system that has successfully completed self-diagnostic routines on all supported subsystems as indicated by a showing of “ready” on all supported readiness monitors. Readiness does not indicate that the motor vehicle has passed the OBD inspection but only that the motor vehicle’s OBD system is ready for inspection.

“Readiness monitors” means the various indicators used by a motor vehicle’s on-board computer to record the status of subsystem diagnostic routines. A readiness monitor may record a subsystem as “ready,” “not ready” or “not supported.”

“Vehicle curb weight” means the actual weight of a motor vehicle in operational status or the weight given by the manufacturer for such a vehicle. Such weight shall include the weight of all standard equipment, of the fuel at nominal tank capacity, and of optional equipment computed in accordance with 40 CFR section 86.082-24.

7:27B-5.2 General instructions for all tests

(a) An inspector, conducting an emissions test on a gasoline-fueled motor vehicle pursuant to any provision of this subchapter, including, but not limited to, N.J.A.C. 7:27B-5.3 through 5.8, shall perform the test in accordance with the following general procedures:

1. Test the vehicle in as-received condition without making any repairs immediately prior to testing;
2. Prior to testing, turn off all vehicle accessories, including, but not limited to, air conditioning, heating, defroster, radio and lights; and
3. Prior to testing, ensure that the motor vehicle emission testing equipment is calibrated in accordance with the manufacturer’s requirements.

(b) Equipment to be used in conducting an emissions test on a gasoline-fueled motor vehicle in accordance with N.J.A.C. 7:27-15.5 shall satisfy all specifications and standards for motor vehicle testing equipment as set forth at N.J.A.C. 7:27B-5.8.

(c) An inspector conducting a motor vehicle emissions test on a gasoline-fueled motor vehicle as set forth in this subchapter shall use only motor vehicle testing equipment that has been approved by the Department prior to its use in the test. Approval by the Department is based on the following criteria:

1. The equipment conforms to the requirements set forth at N.J.A.C. 7:27B-5.8;
2. The equipment hardware and software comply with the data collection and transfer protocols in use throughout New Jersey’s motor vehicle inspection programs;
3. The equipment maintains compatibility with other test equipment used concurrently during the motor vehicle inspection process with which it is required to interface; and

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4. The equipment is complete in that it includes all options and accessories necessary for performing each emissions inspection test procedure for which it was designed and it is to be used.

7:27B-5.3 Procedures for the visible smoke test for gasoline-fueled motor vehicles

(a) An inspector conducting a visible smoke test to determine a gasoline-fueled motor vehicle's compliance with the standard set forth at N.J.A.C. 7:27-15.6(a) shall perform the test as follows:

1. Place the vehicle in neutral gear with all accessories off and the emergency or parking brake secured;
2. Increase the engine speed to an engine speed greater than the idle mode, and observe the exhaust emissions and crankcase emissions for visible continuous smoke;
3. If there is visible smoke in the exhaust emissions or crankcase emissions for a period in excess of three consecutive seconds, the motor vehicle has failed the smoke test; and
4. If there is no visible smoke in the exhaust emissions or crankcase emissions for a period in excess of three consecutive seconds, the motor vehicle has passed the smoke test.

7:27B-5.4 Procedure for the visual fuel leak test

An inspector conducting a visual fuel leak test to determine a motor vehicle's compliance with the visual fuel leak test requirements at N.J.A.C. 7:27-15.5 shall examine the vehicle's fuel system for the presence of any leaking fuel. If any fuel is visibly leaking from the motor vehicle, the motor vehicle has failed the visual fuel leak test.

7:27B-5.5 Emission control apparatus examination procedure

(a) The procedure for examination of the emission control apparatus of a motor vehicle equipped with one or more catalytic converters as original equipment, required at N.J.A.C. 7:27-15.5 consists of a visual check to determine whether one or more properly installed catalytic converters is present on the motor vehicle.

(b) A motor vehicle originally equipped with one or more catalytic converters shall fail the emission control apparatus compliance examination if:

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1. The vehicle is not equipped with the same number of catalytic converters with which it was originally equipped; and
2. Any catalytic converter is not in the same location as originally equipped.

(c) A motor vehicle that has failed the emission control apparatus compliance examination in accordance with (b) above shall be properly equipped with one or more replacement catalytic converters certified according to EPA procedures and subsequently reinspected. The reinspection shall be conducted in accordance with (b) above.

7:27B-5.6 Procedure for the on-board diagnostics inspection

(a) The procedure for the OBD inspection, to be used to determine a motor vehicle's compliance with the OBD inspection requirements at N.J.A.C. 7:27-15.5, is as follows:

1. Turn off the motor vehicle's engine and connect the analyzer to the motor vehicle computer via the DLC located on the motor vehicle;
2. If the DLC is damaged, missing or obstructed, the motor vehicle has failed the OBD inspection;
3. Determine if the MIL is functional by briefly turning the motor vehicle ignition system to the KOEO position;
4. If the MIL is not functional, the motor vehicle has failed the OBD inspection;
5. Start the motor vehicle and leave the engine running. Determine if the MIL remains illuminated while the engine is running;
6. If the MIL is illuminated with the engine running, the motor vehicle has failed the OBD inspection;
7. The analyzer will attempt to communicate with the motor vehicle's OBD system;
8. If the analyzer cannot successfully communicate with the motor vehicle's OBD system, the motor vehicle has failed the OBD inspection;
9. If the analyzer successfully communicates with the motor vehicle OBD system, it will then retrieve stored information relating to the identification of the motor vehicle and any malfunctions recorded by the OBD system;
10. If the analyzer determines that the OBD system or the motor vehicle is malfunctioning, the motor vehicle has failed the OBD inspection;
11. If the analyzer indicates that the motor vehicle does not meet the EPA's criteria for "readiness," that is, if the vehicle's OBD system does not indicate that the critical number of supported readiness monitors have been set, the motor vehicle is deemed "not ready" for an OBD inspection and has failed the OBD inspection;
12. If the analyzer indicates that the motor vehicle is deemed "ready" and determines that all components of the OBD system are functioning properly, and the OBD system is not indicating any malfunctions of the motor vehicle, then the motor vehicle has passed the OBD inspection;
13. A motor vehicle that failed an initial OBD inspection for not having a properly functioning catalyst must, on reinspection, have its catalyst monitor set

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to ready and must meet all other criteria required to pass the OBD inspection.

(b) The OBD inspection procedure is largely a process whereby the motor vehicle testing equipment and the motor vehicle's OBD system interface and exchange information. As such, the description of the on-board diagnostics inspection procedure at (a) above is a brief, simplified description that does not contain explicit technical details. A more detailed flow chart version, reflecting the logic flow of pass and fail determinations within the procedure, as well as the Department's OBD equipment specifications, which contain additional technical details, are available electronically by contacting the Department's Bureau of Mobile Sources at (609) 292-7953.

(c) In the case of a motor vehicle that is equipped with an OBD system but that is not OBD-eligible, as determined by the Department in accordance with N.J.A.C. 7:27-15.5(j), the procedure to be used to determine compliance with the OBD inspection requirements at N.J.A.C. 7:27-15.5, is as follows:

1. Determine if the MIL is functional by briefly turning the motor vehicle ignition system to the KOEO position;
2. If the MIL is not functional, the motor vehicle has failed the OBD inspection;
3. Start the motor vehicle and leave the engine running. Determine if the MIL remains illuminated while the engine is running;
4. If the MIL is illuminated with the engine running, the motor vehicle has failed the OBD inspection;
5. If the motor vehicle has failed the OBD inspection described in (c)1 through 4 above, the reinspection of the motor vehicle shall include a repeat of the procedure described in (c)1 through 4 above.

7:27B-5.7 Procedure for the visual fuel cap test

(a) The procedure to determine a motor vehicle's compliance with the visual fuel cap test requirements at N.J.A.C. 7:27-15.5 is as follows:

1. Examine the vehicle to determine if all fuel caps with which the vehicle is required to be equipped are physically present and properly attached to cover and seal each fuel tank inlet. If so, the motor vehicle shall be deemed to have passed the visual fuel cap test; and
2. If the vehicle is equipped by the manufacturer with a capless fuel filler system, examine the vehicle to determine if the capless fuel filler is intact, shows no signs of excessive wear, and appears to seal properly. If so, the motor vehicle shall be deemed to have passed the visual fuel cap test.

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7:27B-5.8 Specifications for motor vehicle testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program

Equipment used for performing the OBD inspection, as set forth at N.J.A.C. 7:27B-5.6, shall be approved by the Department as provided at N.J.A.C. 7:27B-5.2(c) and shall conform with the provisions of 40 CFR 85.2231, and all subsequent revisions thereto, incorporated herein by reference.