



NJ-CERT Module 4: OBD Tests & Secondary Emissions Tests

A course made for New Jersey's Certified Emission Repair Technician
(ERT)

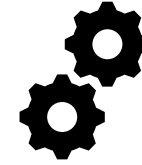
Presented by the NJ Department of Environmental Protection (NJDEP)
Bureau of Mobile Sources



- **Note:** If you have not printed out the [Master Acronym List](#), please do so now **OR** have it open while viewing these Modules.
- For detailed rules and regulations, please visit [Section 2](#) on the NJ-CERT homepage.

Thank you

Which Tests Apply to a Vehicle?



- A complete emission inspection is composed of multiple tests.
- A vehicle must pass all of the tests in order to pass the inspection.
- The applicability of individual tests will vary depending upon the **weight class**, **fuel type**, **model year**, and **registration type** of the vehicle.

Weight Class



- Weight class refers to the Gross Vehicle Weight Rating (GVWR) as assigned by the vehicle manufacturer and usually listed on a driver's side door jamb label. Any weight noted on the NJ MVC registration document is not relevant for purposes of inspection.
- The most important ranges that impact emission tests are:
 - Gasoline - GVWR \leq 8500 lbs., 8501-14000 lbs., \geq 14001 lbs.
 - Diesel – GVWR \leq 8500 lbs., 8501-14000 lbs., 14001-17999 lbs., \geq 18000 lbs.

Fuel Type



- **Gasoline** – includes gasoline, CNG, LNG, propane, alcohol, hybrid gas-electric (including plug-in hybrids), and flex-fuel vehicles that can accept any combination of these fuels. Also includes hydrogen if combusted, *not hydrogen fuel cell vehicles*.
- **Diesel** – includes diesel, and hybrid diesel-electric (including plug-in hybrids).
- *Neither fuel type includes pure battery electric or hydrogen fuel cell vehicles that do not combust any fuel. These vehicles are exempt from inspection.*

Model Year & Registration Type

- **Model Year**

- Model year refers to the production model year as designated by the vehicle manufacturer. It is not necessarily when the vehicle was built, assembled, sold, or titled.

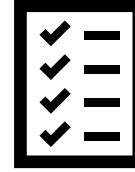
- **Registration Type**

- Registration type is either passenger or commercial. Omnibuses, livery, jitney, taxis and all types of vehicles for hire are commercial.

Emission Test Requirements, Standards, and Procedures in Regulation

- Generally, inspectors are required to follow the prompts from the inspection workstation software that is programmed to include all regulatory requirements. However, the regulations that cover emission testing may be found in these locations:
- For gasoline vehicles: Inspection requirements and pass/fail standards are at [N.J.A.C. 7:27-15](#) and test procedures are at [N.J.A.C. 7:27B-5](#).
- For diesel vehicles: Inspection requirements and pass/fail standards are at [N.J.A.C. 7:27-14](#) and test procedures are at [N.J.A.C. 7:27B-4](#).

Test Procedures



- This is a discussion of the various tests that constitute an emission inspection. Some tests are only applicable to gasoline vehicles, some to diesel, and some to both.
- The next few slides will detail the following tests:
 - OBD Test,
 - Indicator Light Test,
 - Visual Fuel Cap Check,
 - Catalytic Converter Check,
 - Visible Smoke Test,
 - Visual Fuel Leak Check,
 - Emission Control Apparatus Examination and
 - Smoke Opacity Test.

OBD Test



- Relevant to both gasoline and diesel vehicles.
- The OBD inspection procedure is largely a process whereby the inspection workstation and the motor vehicle's OBD system interface and exchange information. Different OBD modes are queried and many data elements are recorded.
- From the inspector's perspective, the OBD test involves not much more than plugging the workstation's OBD connector into the vehicle's DLC. The procedures are discussed in more detail later in this course.

OBD Test Continued...

There are several reasons why a vehicle may fail an OBD test:

- The DLC is damaged, obstructed, modified, or cannot be located.
 - The vehicle cannot communicate with the inspection workstation.
 - The MIL is not illuminated when commanded on (such as during the bulb check).
 - Any continuous readiness monitor is not supported or not ready. Continuous monitors are comprehensive component, fuel system and misfire.
 - The number of unset non-continuous monitors equals or exceeds the following criteria:
 - Three for model years 1996 through 2000.
 - Two for model year 2001 and newer.
- ✓ **You're allowed 1 monitor not ready for 2001 and newer.**
- DTCs have been detected that cause the MIL to be commanded on.
 - The MIL is on, whether commanded on or not.
 - A vehicle which previously failed an OBD test with a catalyst-related DTC will fail all subsequent inspections until the catalyst monitor is set to ready upon inspection.

Indicator Light Check

- For gasoline vehicles, this includes the MIL.
- For diesel vehicles, this includes the MIL, DPF light and SCR light.
 - Causes of failure include
 - If any of the lights fail to illuminate during the bulb check
 - DPF light indicates the vehicle is regenerating
 - SCR light indicates an empty DEF tank



Visual Fuel Cap Check

- For all gasoline vehicles only.
- This is a visual check to confirm that all fuel caps are physically present and properly attached to cover and seal each fuel tank inlet.
- In the case of cap-less systems, the check is to confirm that the system shows no excess wear and appears to be working correctly.



Catalytic Converter Check



- For gasoline vehicles only.
- This is a visual check to confirm that the vehicle is equipped with the same number of catalytic converters as it was originally equipped by the manufacturer and that those converters are in their original locations.
- If the catalytic converters have been replaced, they must be appropriate models for the vehicle application and installed in the same locations as the original converters.

Visible Smoke Test

- This applies to all gasoline and diesel vehicles.
- This test confirms that the vehicle does not emit any visible smoke from the exhaust or crankcase for a period in excess of three seconds while the engine is revved above idle speed.



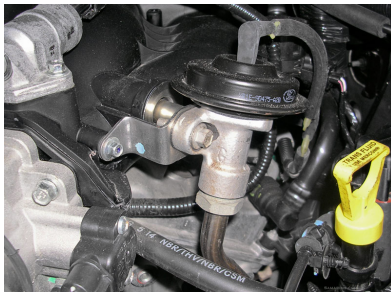
Visual Fuel Leak Check

- This applies to all gasoline and diesel vehicles.
- Any fuel observed to be visibly leaking from a vehicle shall be cause for failure.



Emission Control Apparatus Examination

- This applies to heavy duty diesel vehicles only.
- This test is a visual check to determine if all emission control apparatus and exhaust system components are present on the vehicle.
 - If any device or system has been disconnected, detached, deactivated, bypassed, or in any way rendered inoperable or less effective than originally designed, this would be cause for failure.
- Emission controls may include: DPF, diesel oxidation catalyst, lean NOx trap, SCR system, EGR, PCV, and other components.



Smoke Opacity Test

- For heavy duty diesel vehicles only.
- During this test, a state-approved smoke meter is connected to a diesel vehicle and a snap acceleration test is performed to measure smoke opacity.



Version 1a

