CHAPTER 27B

SAMPLING AND ANALYTICAL PROCEDURES

Authority

N.J.S.A. 13:1D-5, 13:1D-9 and 26:2C-8.

Source and Effective Date

R.1974 d.360, effective December 30, 1974.
See: 7 N.J.R. 48(a).

Chapter Expiration Date

Chapter 27B, Sampling and Analytical Procedures, is exempt from expiration under Executive Order No. 66 (1978) and N.J.S.A. 52:14B-5.1 pursuant to 42 U.S.C. §§7401 et seq.

Chapter Historical Note

Chapter 27B, Sampling and Analytical Procedures was adopted as R.1974 d.360, effective December 30, 1974. See: 7 N.J.R. 48(a). Chapter 27B was amended and Subchapters 2 and 3 were adopted by R.1975 d.76, effective March 20, 1975. See: 7 N.J.R. 144(a). Revisions which consolidated the prior text of Subchapter 3 (making it Reserved) with Subchapter 1 became effective June 21, 1986 as R.1986 d.121. See: 8 N.J.R. 223(a). Subchapter 4 became effective January 21, 1985 (operative July 1, 1985) as R.1985 d.3. See: 16 N.J.R. 2894(a), 17 N.J.R. 194(a). Subchapter 3, Air Test Method 3: Sampling and Analytical Procedures for the Determination of Volatile Organic Compounds from Source Operations, was adopted as R.1986 d.377, effective September 8, 1986 (operative October 10, 1986). See: 17 N.J.R. 2194(a), 18 N.J.R. 1800(a).

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SUBCHAPTER 1. SAMPLING AND ANALYTICAL PROCEDURES FOR DETERMINING EMISSIONS OF PARTICLES FROM MANUFACTURING PROCESSES AND FROM COMBUSTION OF FUELS

Authority

Unless otherwise expressly noted, all provisions of this Subchapter were adopted pursuant to authority of N.J.S.A. 26:2C-1 et seq. and were filed and became effective on December 30, 1974, as R.1974 d.360. See: 7 N.J.R. 48(a). Revisions to the original rules were filed and became effective on May 20, 1975, as R.1975 d.136. See: 7 N.J.R. 261(d). Further revisions were filed on April 21, 1976, as R.1976 d.121 to become effective on June 21, 1976. See: 8 N.J.R. 223(a).

7:27B-1.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise. Terms not defined in this section are intended to be used as defined in the New Jersey Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., and Chapter 27 in Title 7 of the New Jersey Administrative Code, or are used in their common engineering or scientific sense. Symbols and nomenclature are defined in Appendix 6.

"Bureau" means the Bureau of Air Pollution Control.

"Department" means the Department of Environmental Protection.

"Equipment diameter" means the diameter of a circular cross section having the same area as a noncircular cross section.

"Performance test" or "test" means a series of test runs used for the purpose of determining emissions of air contaminants to the outdoor atmosphere.

"Run" or "test run" means a single integrated measurement or procedure used for the purpose of collecting a sample of air contaminants emitted to the outdoor atmosphere during a specified time interval.

"Sample collector" means any device used to selectively separate and collect a sample of a specified contaminant from a gas stream, including, but not limited to, thimbles, filters, impingers, bubblers, cyclones, condensers and absorbers.

"Sampling location" means the specific position at which a sampling port is located in a stack or chimney.

"Sampling port" means an opening in a stack or chimney into which sampling or measuring devices may be inserted or through which a sample is extracted.

"Sampling rate" means the volume rate at which stack gases are drawn through a sampling train.

"Sampling train" means a combination of entrapment devices, instruments, and auxiliary apparatus arranged in a prescribed sequence to selectively separate and collect samples of specified air contaminants.

"Sampling velocity" means the linear velocity at which stack gases are drawn through the nozzle of a sampling train.

"Stack gas velocity" means the linear velocity (in the direction of gas flow) at which stack gases pass the sampling train nozzle.

"Standard conditions" means 70 degrees Fahrenheit and one atmosphere pressure (14.7 psia or 760 mm Hg).

"Traverse point" means a predetermined point at which a sample or measurement is obtained inside a stack or chimney.

7:27B-1.2 Acceptable test methods

(a) Because of size and/or inertial effects on the particles to be measured, they are to be collected under isokinetic conditions to ensure that the sample is representative. With isokinetic sampling, that portion of the gas stream from which the particles are entrapped is made to enter the sampling nozzle in the same direction and at the same velocity as the gas stream in the stack or chimney being sampled. The sample weight is determined gravimetrically after removal of uncombined water.

(b) Performance tests shall be conducted in accordance with test methods set forth hereinafter. Alternate test procedures, equipment and/or materials of construction may be used subject to prior approval and/or conditions prescribed by the Department. The Department may itself employ such alternates when warranted by test conditions or other circumstances.

American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 ($4.00).

12. ASTM Designation D2698-73, Standard Test Method for the Determination of the Pigment Content of Solvent Reducible Paints by High Speed Centrifuging, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 ($4.00).

13. ASTM Designation D95-83, Standard Method for Determining Water in Petroleum and Bituminous Materials by Distillation, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 ($4.00).

14. Method 2-1 California Air Resources Board, Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations. Available from State of California, Air Resources Board, 1102 Q Street, Sacramento, California 95812.

15. ASTM Designation D322-80, Standard Test Method for Gasoline Dilutent in Used Gasoline Engine Oils by Distillation, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 ($4.00).

16. Code of Federal Regulations, Title 40, Part 60—Reference Methods 2A and 2B are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).
See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).
Repealed and replaced (a)3 regarding vapor pressure measurement methods.
Administrative change.
See: 43 N.J.R. 2328(a).

Editor's Note: In addition to the above text, Appendices A through H were filed with these rules, but not reproduced herein. Further information regarding these Appendices may be obtained by contacting:

Department of Environmental Protection
Division of Air Quality
Bureau of Technical Services
Emission Measurement Section
Mail Code 380-01A
PO Box 420
Trenton, New Jersey 08625-0420

SUBCHAPTER 4. AIR TEST METHOD 4: TESTING PROCEDURES FOR DIESEL-POWERED MOTOR VEHICLES

Authority

N.J.S.A. 13:1D-5, 13:1D-9, 26:2C-8, 26:2C-8.1, 26:2C-8.2 and 26:2C-8.5.

Source and Effective Date

R.1985 d.3, effective January 21, 1985 (operative July 1, 1985).
See: 16 N.J.R. 2894, 17 N.J.R. 184(a).

7:27B-4.1 Definitions

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

"Alternative smoke opacity standard" means the smoke opacity standard applicable to a specific vehicle-engine-chassis combination, as determined by the procedure set forth at N.J.A.C. 7:27B-4.5.

"Best available retrofit technology" or "BART" means an aftermarket particulate emissions control device that, as determined by the Department, can be used on or in a regulated vehicle or regulated equipment, at a reasonable cost to achieve substantial reduction of fine particulate diesel emissions, and is either a diesel emissions control strategy for which CARB has issued an Executive Order, or a verified retrofit technology for which the USEPA has issued a Verification Letter. "Best available retrofit technology" includes only those retrofit devices and fuel for which the retrofit device manufacturer or fuel manufacturer certifies that the installation and use would not jeopardize the original engine warranty in effect at the time of the installation or the commencement of use of the retrofit device or fuel, and for which the manufacturer has issued a warranty pursuant to N.J.A.C. 7:27-32.9.

"BART 1" means a BART that achieves a minimum particulate emissions control level of 25 percent reduction in mass.

"BART 2" means a BART that achieves a minimum particulate emissions control level of 50 percent reduction in mass.

"BART 3" means a BART that achieves a minimum particulate emissions control level of 85 percent reduction in mass.

"California Air Resources Board" or "CARB" means the agency of the State of California established and empowered to regulate sources of air contaminant emissions, including motor vehicles, pursuant to California Health and Safety Code, Sections 39500 et seq.

"Certified configuration" means a heavy-duty diesel engine design or a light-duty diesel-powered motor vehicle-engine-chassis design certified by either of the following agencies as meeting the applicable emission standards for heavy-duty diesel engines or light-duty diesel-powered motor vehicles manufactured in a given model year:

1. EPA, for model year 1971 or for a more recent model year heavy-duty diesel vehicle engine;

2. EPA, for model year 1968 or for a more recent model year light-duty diesel vehicle;

3. CARB, for model year 1973 or for a more recent model year heavy-duty diesel vehicle engine; or

4. CARB, for model year 1966 or for a more recent model year light-duty diesel vehicle.

"Chassis dynamometer" or "dynamometer" means a power absorption device utilizing a set of rollers on which a motor vehicle is driven to simulate on-road vehicle operation.

"Closed crankcase ventilation system" or "CCVS" means a system, installed upon an internal combustion engine, that is designed to capture all solids, liquids and gases that are emitted from the vent and to divert them to the engine intake air plenum for recombustion.

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

"Department" means the New Jersey Department of Environmental Protection.

"Dew point" means the temperature to which air must be cooled for saturation to occur.

"Diesel bus" means any diesel-powered autobus or motorbus of any size or configuration, whether registered in this State or elsewhere, that is designed or used for intrastate or interstate transportation of passengers for hire or otherwise on a public road, street or highway or any public or quasi-public property in this State, including, but not limited to, autobuses under the jurisdiction of the New Jersey Department of Transportation pursuant to Titles 27 or 48 of the Revised Statutes; autobuses of the New Jersey Transit Corporation and its contract carriers that are under the inspection jurisdiction of the New Jersey Department of Transportation; autobuses that are subject to Federal motor carrier safety regulations; autobuses under the authority of the Interstate Commerce Commission or its successor agency; school buses, as defined pursuant to N.J.S.A. 39:1-1; and hotel, casino, charter, and special buses.

"Diesel emissions inspection center" or "DEIC" means a facility licensed by the Division of Motor Vehicles pursuant to N.J.S.A. 39:8-69 and N.J.A.C. 13:20-47.

"Diesel emissions testing equipment" means equipment used to conduct a test of a diesel-powered motor vehicle in accordance with this subchapter and which satisfies all applicable specifications set forth at N.J.A.C. 7:27B-4.2(d) and 4.6. For motor vehicle inspections conducted pursuant to N.J.A.C. 7:27-14 and this subchapter, this term shall include all devices used for performing a motor vehicle inspection including, but not limited to, smoke opacity meters, exhaust gas analyzers, on board diagnostic scanners and analyzers and computers and related software.

"Diesel engine" means a compression ignition type of internal combustion engine.

"Diesel-powered" means utilizing a diesel engine.

"Element of design" means any part or system on a motor vehicle or a motor vehicle engine pertaining to the vehicle's or engine's certified configuration.

"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, regardless of the location of the location of the device on the vehicle. This term shall also include any retrofit device added to the vehicle or engine as part of a mandatory or voluntary retrofit program for emission control.

"Engine RPM rise time" means the time period, in seconds, during acceleration between curb idle and high idle.

"EPA" means the United States Environmental Protection Agency.

"Exhaust aftertreatment" means any element of design which affects or alters the molecular content of the exhaust emissions of a diesel engine.

"Exhaust emissions" means the emissions (including any liquid or solid particles in the gaseous stream) released into the atmosphere from any opening downstream from the exhaust ports of a motor vehicle engine.

"Exhaust leak" means any condition of the exhaust system which permits exhaust emissions to escape into the atmosphere at any point between the exhaust ports of a motor vehicle engine and the outlet of the engine exhaust pipe.

"Full-flow smokemeter" means a smokemeter which measures smoke opacity by passing a beam of light through the axis of the exhaust plume as the exhaust exits the tailpipe of a motor vehicle.

"Governor" means a mechanism installed on a diesel engine by the original equipment manufacturer for the purpose of limiting the maximum engine RPM.

"Gross combination weight rating" or "GCWR" means the GVWR of a combination (articulated) vehicle, which is defined as the GVWR of the power unit plus the GVWR of the towed unit or units.

"Gross vehicle weight rating" or "GVWR" means the value specified by the vehicle manufacturer as the maximum loaded weight of a single or combination vehicle. When used in connection with a combination or articulated vehicle, GVWR refers to the "gross combination weight rating" or "GCWR" of the combination or articulated vehicle, which is defined as the GVWR of the power unit plus the GVWR of the towed unit or units.

"Heavy-duty diesel vehicle" or "HDDV" means a diesel-powered motor vehicle other than a diesel bus that has a GVWR exceeding 8,500 pounds and is designed primarily for transporting persons or property.

"High idle" means the highest engine speed obtainable when the engine is disengaged from the transmission and is free-wheeling.

"High speed diesel engine" means any diesel engine with a maximum governed engine speed over 2,800 RPM.

"Idle" means an operating mode where the vehicle engine is not engaged in gear and where the engine operates at a speed at the revolutions per minute specified by the engine or vehicle manufacturer.

"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. 7:27-14 and 32.

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

"Light-duty diesel vehicle" or "LDDV" means a diesel-powered motor vehicle, other than a diesel bus, that has a GVWR of 8,500 pounds or less and is designed primarily for transporting persons or property.

"Low idle" or "curb idle" means the minimum operating speed of an engine with the accelerator pedal released and the transmission disengaged, as specified by the engine manufacturer.

"Low speed diesel engine" means any diesel engine with a maximum governed engine speed of no more than 2,200 RPM.

"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."

"Maximum governed RPM" means, for an engine which has a functioning governor, the manufacturer's recommended maximum engine speed as restricted by the governor. For an engine which does not have a functioning governor, this term means a value of 80 percent of the manufacturer's recommended maximum engine speed.

"Measurement path" means the linear path between the sending and receiving points of a full-flow smokemeter.

"Medium speed diesel engine" means any diesel engine with a maximum governed engine speed of 2,201 RPM to 2,800 RPM.

"Motor vehicle" means all vehicles propelled otherwise than by muscular power, excepting motorized bicycles and such vehicles as run only upon rails or tracks.

"Motorized bicycle" means a pedal bicycle having a helper motor characterized in that either the maximum piston displacement is less than 50 cubic centimeters, or said motor is rated at no more than 1.5 brake horsepower and said bicycle is capable of a maximum speed of no more than 25 miles per hour on a flat surface.

"MPH" means miles per hour.

"MVC" means the New Jersey Motor Vehicle Commission.

"Neutral density filter" means a device used to calibrate or verify the accuracy of the raw opaque value within the measurement path of a smokemeter which consists of a lens of neutral particle density and which filters visible light to a known opacity value.

"Nominal stack size" means the exhaust pipe diameter to be used in conducting smoke opacity measurements to determine compliance with diesel smoke opacity standards, based on engine horsepower, as set forth in N.J.A.C. 7:27B-4.3 Table 1.

"Oil temperature probe" means a device integral to a smokemeter which measures the engine crankcase oil temperature.

"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.

"Opacity" means the property of a substance whereby it partially or wholly obstructs the transmission of visible light expressed as the percentage to which light is obstructed.

"Partial-flow smokemeter" means a smokemeter which samples, at frequent intervals, a representative portion of the total exhaust flow and directs it to a measurement cell, and which calculates smoke opacity based upon the sample smoke density and the diameter of the exhaust pipe.

"Particles" means any material, except uncombined water, which exists as liquid particles or solid particles at standard conditions.

"Peak smoke opacity" means the highest numerical value of smoke opacity measured during a snap acceleration smoke opacity test at N.J.A.C. 7:27B-4.3(a), a rolling acceleration smoke opacity test at N.J.A.C. 7:27B-4.3(b), or a power brake smoke opacity test at N.J.A.C. 7:27B-4.3(c).

"Person" means an individual, public or private corporation, company, partnership, firm, association, society or joint stock company, municipality, state, interstate body, the United States, or any board, commission, employee, agent, officer or political subdivision of a state, an interstate body or the United States. "Person" expressly includes the Port Authority of New York and New Jersey, and the South Jersey Port Corporation.

"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."

"Regulated emission" means any solid, liquid or gaseous substance which is emitted from a motor vehicle or motor vehicle engine and which is regulated by the EPA pursuant to 40 C.F.R. Part 86.

"Retrofit device" means any emissions control apparatus, including exhaust aftertreatment device, that has been installed on the vehicle or engine after the original manufacturing date of the complete vehicle.

"RPM" means revolutions per minute.

"RPM sensor" means a mechanism integral to the smokemeter which senses the engine speed in revolutions per minute.

"SAE J1667" means the recommended practice incorporated in document number J1667 published by the Society of Automotive Engineers in February 1996, entitled Snap-Acceleration Smoke Test Procedure for Heavy-Duty Diesel-Powered Vehicles, and all appendices attached thereto, incorporated herein by reference.

"School bus" means a school bus as defined under N.J.S.A. 39:1-1.

"Smoke" means the emissions, including airborne solid and/or liquid particles, exclusive of water vapor, released into the atmosphere from a process of combustion.

"Smokemeter" means, in the context of this subchapter, a component of diesel emissions testing equipment. The smokemeter is not separable from the diesel emissions testing equipment. Inspections performed using a smokemeter must employ diesel emissions testing equipment.

"Tailpipe" means the final downstream section of pipe in a motor vehicle's exhaust system.

"Wide open throttle" or "WOT" means, in reference to a diesel-powered motor vehicle, the positioning of the primary engine power control to deliver maximum potential power and fuel. In most cases this is the positioning of the vehicle's accelerator control at its forward-most or downward-most position.

Emergency amendment R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
Amended by R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
Amended "Chassis dynamometer", "Gasoline-fueled" , "Heavy-duty gasoline-fueled vehicle", "Hydrocarbons (HC)", "Idle", and "Motor vehicle emission testing equipment".
Amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Added "Alternative smoke opacity standard", "California Air Resources Board", "Certified configuration", "Dew point", "Diesel bus", "Diesel emissions inspection center", "Diesel engine", "Diesel-powered", "Division of Motor Vehicles", "Element of design", "Engine RPM hookup", "Exhaust aftertreatment", "Exhaust stack diameter", "Full-flow smokemeter", "Governor", "Light-duty diesel vehicle", "Low speed engine", "Maximum governed RPM", "Measurement path", "Neutral density filter", "Oil temperature probe", "Partial-flow smokemeter", "Particles", "Peak smoke opacity", "Regulated emission", "SAE J667", "Tailpipe" and "Wide open throttle"; deleted "Autobus", "Motor vehicle safety specialist" and "Prescribed inspection test procedure"; and amended "Department", "Emission control apparatus", "Exhaust emissions", "Gasoline-fueled", "Gross vehicle weight rating", "Heavy-duty diesel vehicle", "Idle", "Inspector", "Opacity", "Smoke", and " Smokemeter".
Amended by R.1998 d.309, effective July 6, 1998 (operative July 21, 1998).
See: 30 N.J.R. 901(a), 30 N.J.R. 2476(b).
Deleted "Engine RPM hookup", "Exhaust stack diameter" and "Operating mode"; inserted new "Gross combination weight rating" or "GCWR", "High idle", "High speed diesel engine", "Low idle" or "curb idle", "Medium speed diesel engine", "Nominal stack size" and "RPM sensor"; and rewrote "Gross vehicle weight rating" or "GCWR" and "Low speed diesel engine".
Administrative correction.
See: 31 N.J.R. 872(b).
Amended by R.1999 d.210, effective July 6, 1999 (operative August 10, 1999).
See: 31 N.J.R. 828(a), 31 N.J.R. 1803(b).
In "High speed diesel engine", "Low speed diesel engine" and "Medium speed diesel engine", substituted references to diesel engines for references to heavy-duty diesel engines; and in "Medium speed diesel engine", inserted "maximum" preceding "governed".
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
In "Inspector", changed N.J.A.C. reference.
Administrative change.
See: 33 N.J.R. 3550(a).
Amended by R.2007 d.235, effective August 6, 2007 (operative September 8, 2007).
See: 38 N.J.R. 5244(a), 39 N.J.R. 3352(a).
Added definitions "Best available retrofit technology", "BART 1", "BART 2", "BART 3", "Closed crankcase ventilation system", "MVC", "Person", "Retrofit device" and "School bus"; deleted definition "Division of Motor Vehicles"; in definition "Inspector", updated the N.J.A.C. reference; and in definition "Peak smoke capacity", substituted "power brake" for "stall".

Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Added definitions "Data link connector", "Diesel emissions testing equipment", "Key on engine off", "Key on engine running", "Malfunction indicator light", "On board diagnostics", "Readiness" and "Readiness monitor"; in definition "Emission control apparatus", inserted a comma following "component", inserted ", regardless of the location of the location of the device on the vehicle" and inserted the last sentence; and rewrote definitions "Retrofit device" and "Smokemeter".

7:27B-4.2 General instructions for all tests

(a) An inspector conducting an emissions test on a heavy-duty diesel vehicle or diesel bus pursuant to any provision of this subchapter including, but not limited to, N.J.A.C. 7:27B-4.3, 4.4(a) and 4.4(b), shall perform the test in accordance with the following general procedures:

1. Test the vehicle in as-received condition;

2. Prior to testing, verify that the smokemeter is calibrated in accordance with the manufacturer's requirements;

3. Prior to testing, ensure that the engine is at normal operating temperature by operating the vehicle on a highway or a chassis dynamometer with a road load for a minimum of 15 minutes. For testing at a DEIC, only, confirm proper engine operating temperature by inserting an oil temperature probe through the oil dipstick tube into the crankcase oil, so that the oil temperature as measured during the test will be recorded as part of the analyzer printout at the conclusion of the test. Oil temperature shall be at least 60 degrees Celsius (140 degrees Fahrenheit), or water temperature shall be at least 82 degrees Celsius (180 degrees Fahrenheit) but not overheating;

4. Examine the vehicle's exhaust system for integrity. For testing at a DEIC, only, tighten all loose pipe connections and repair all significant exhaust leaks before performing a test;

5. Prior to conducting a smoke opacity test on a diesel-powered motor vehicle equipped with multiple exhaust outlets, determine which exhaust outlet exhibits the highest opacity level by visually comparing the opacity level of each outlet during a single repetition of the snap acceleration test as set forth at N.J.A.C. 7:27B-4.3(a), if appropriate, or by liberally accelerating the engine at WOT, not to exceed maximum governed RPM. Conduct the testing using the highest-opacity exhaust outlet;

6. Do not conduct the test if the ambient temperature is below 35 degrees Fahrenheit or above 95 degrees Fahrenheit, or if the temperature is at the dew point as determined by using a thermometer and hygrometer. If the testing is conducted outdoors, do not conduct the test if there is any visible precipitation, such as rain or fog, at the test site during the time of testing;

7. Prior to testing, turn off the engine brake and all vehicle accessories, including, but not limited to, air conditioning, heating, defroster, radio and lights;

8. Determine that the engine speed governor is in proper operating condition. For DEICs only, make this determination as follows: operate the engine with the transmission in neutral and the clutch disengaged. Gradually increase the engine speed from curb idle to high idle while observing an RPM sensor connected to the engine. The engine speed should not exceed high idle as specified by the engine manufacturer with the accelerator pedal fully depressed. If the engine speed continues increasing beyond the manufacturer's rated high idle, immediately release the accelerator pedal. If the engine speed increases uncontrollably, immediately release the accelerator pedal and shut off the engine's fuel supply. Discontinue emission testing of any vehicle with dysfunctional or out-of-specification engine speed governors. Do not resume testing unless and until speed governor repairs are made;

9. If inspecting a vehicle, which was either equipped by the manufacturer or was retrofitted in accordance with State or Federal law or regulation with a catalytic converter, particulate trap or trap oxidizer, or any other exhaust aftertreatment device, inspect the exhaust system for the presence of the device and for its physical integrity. Discontinue testing of any motor vehicle, which exhibits any missing exhaust aftertreatment device or perforating rust, crack, hole, tear or other such physical defect in the device. Discontinue testing if the vehicle's exhaust aftertreatment system is in regeneration mode or is producing high exhaust temperatures, as indicated by the instrument panel controls. If the vehicle being tested is a heavy-duty diesel vehicle or diesel bus with an exhaust aftertreatment device, discontinue testing and fail the vehicle if the device is found not to be in proper functioning condition. Do not resume testing unless and until the defect(s) are repaired;

10. If, at any time before or during the inspection of a diesel-powered motor vehicle, continuous smoke of any color is observed in the exhaust emissions for more than three seconds, discontinue the testing and determine that the vehicle has failed to pass the smoke opacity test conducted pursuant to N.J.A.C. 7:27-14.6;

(b) An inspector conducting an emissions test on a light-duty diesel vehicle pursuant to any provision of this subchapter, including, but not limited to, N.J.A.C. 7:27B-4.7 and 4.8, 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;

3. Prior to testing, ensure that the diesel emissions testing equipment is calibrated and warmed-up in accordance with the manufacturer's requirements;

4. Prior to testing, ensure that the vehicle is at normal operating temperature by doing one of the following:

i. Check the vehicle's engine coolant temperature gauge and the vehicle's engine oil temperature gauge to confirm that the vehicle is at a normal operating temperature, as indicated by the gauges (that is, that engine coolant temperature is in the "normal" range as specified by the vehicle manufacturer, or, if the "normal" range is not specified by the vehicle manufacturer, is at least 70 degrees Celsius (160 degrees Fahrenheit) and that engine oil temperature is at least 80 degrees Celsius (175 degrees Fahrenheit)). If there is no oil temperature gauge, insert a temperature probe through the oil dip-stick tube and into the engine oil to confirm normal operating temperature; or

ii. Operate the vehicle on the road, or on a chassis dynamometer under road load, at speeds above 35 MPH for at least 20 minutes; and

5. Discontinue testing any vehicle in an overheated condition, as indicated by a temperature gauge or warning light, or boiling of engine coolant;

(c) Equipment to be used in conducting an emissions test on a diesel-powered motor vehicle in accordance with N.J.A.C. 7:27-14.5 shall satisfy all specifications and standards for diesel emissions testing equipment as set forth in N.J.A.C. 7:27B-4.6.

(d) An inspector conducting a motor vehicle emissions test on a diesel-powered motor vehicle as set forth in this subchapter shall use only diesel emissions 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 meets all applicable specifications;

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

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.

(e) The Department maintains a list of approved equipment for specific test procedures. The Department shall periodically review and evaluate equipment offered by manufacturers of motor vehicle testing equipment of which it is aware or has been made aware and update this list. A copy of this list can be obtained from:

Department of Environmental Protection
Bureau of Mobile Sources - Diesel Inspection Program
Mail Code 401-03G
PO Box 420
Trenton, NJ 08625-0420

Amended by R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
Added (e) and (f).
Amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Substantially amended section.
Amended by R.1998 d.309, effective July 6, 1998 (operative July 21, 1998).
See: 30 N.J.R. 901(a), 30 N.J.R. 2476(b).
Rewrote (a).
Amended by R.1999 d.210, effective July 6, 1999 (operative August 10, 1999).
See: 31 N.J.R. 828(a), 31 N.J.R. 1803(b).
In (a), added "For testing at a DEIC, only," at the beginning of the second sentences of 3 and 4, and divided the former first sentence into the first and second sentences by substituting ". For DEICs only, make this determination as follows" for "as follows" following "condition" and substituted a reference to RPM sensors for a reference to tachometers in the new third sentence in 8.
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Rewrote the section.
Administrative change.
See: 33 N.J.R. 3550(a).
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
In the introductory paragraph of (a), substituted "heavy-duty diesel" for "diesel-powered motor" and inserted "or diesel bus"; in (a)3, substituted "60" for "70", "140" for "160", and "or" for "and" preceding "water"; rewrote (a)6; in (a)9, inserted a comma following "inspecting a vehicle" and following "motor vehicle", deleted a comma following "tear" and inserted the third sentence; in (a)10, substituted "smoke of any color" for "blue smoke"; deleted (a)11 and (a)12; added new (b); recodified former (b) through (d) as (c) through (e); in (c), substituted "an emissions" for "a smoke opacity" and "diesel emissions testing equipment" for "a smokemeter"; in (d), substituted "diesel emissions" for "motor vehicle emission"; and in (e), updated the address.
Administrative change.
See: 43 N.J.R. 2328(a).

7:27B-4.3 Procedures for using a smokemeter to measure the smoke opacity of heavy-duty diesel vehicles and diesel buses

(a) The testing procedures for the snap acceleration smoke opacity test, required pursuant to N.J.A.C. 7:27-14.5, shall be performed on heavy-duty diesel vehicles and diesel buses which are equipped with low or medium-speed diesel engines as follows:

1. Determine the engine horsepower from the engine identification plate or engine serial number. Refer to Table 1 below and input the nominal stack size into the smokemeter. If the engine identification plate is missing, inaccessible or illegible, measure the outside diameter of the exhaust pipe extending from the exhaust manifold with a precision caliper or equivalent gauge, rounding to the nearest inch;

2. For a DEIC, only, affix the RPM sensor to the engine and vehicle according to the smokemeter manufacturer's instructions;

3. For a DEIC, only, insert the engine oil temperature sensor into the oil dipstick tube and into the crankcase oil according to the smokemeter manufacturer's instructions;

4. For a DEIC, only, connect the engine RPM and oil temperature sensors to the smokemeter according to the smokemeter manufacturer's instructions;

5. Affix the smokemeter according to the manufacturer's instructions to the end of the vehicle's exhaust pipe. For full-flow smokemeters, ensure that the final two feet and the exit of the exhaust pipe is straight, with an internal diameter not to exceed five inches. Appropriate exhaust pipe adapters shall be used as necessary to comply with these specifications. Do not use full-flow smokemeters on vehicles with underbody exhaust pipes which direct the exhaust flow to the ground unless the exhaust gases are redirected away from the ground by the appropriate exhaust pipe adaptor mentioned above;

6. Chock the drive-wheels and release all tractor and trailer brakes;

7. Ensure that the transmission is in neutral and start the engine;

8. Ensure that the smokemeter is warmed up and calibrated according to N.J.A.C. 7:27B-4.2 and the manufacturer's instructions;

9. Initiate the test sequence on the smokemeter;

10. If using a partial-flow smokemeter, select the appropriate smoke opacity pass/fail standards, set forth at N.J.A.C. 7:27-14.6, based upon the engine model year. If using a full-flow smokemeter, enter the engine horsepower and stack diameter as measured from the vehicle exhaust stack;

11. If using a smokemeter without horsepower input, select the appropriate stack size from Table 1 below, based upon the vehicle's engine horsepower;

12. With each prompt from the smokemeter to "accelerate engine," rapidly depress the accelerator pedal to the floor and hold it there until prompted by the smokemeter to release the pedal;

13. Repeat (a)12 above at least four more times. This shall include, at a minimum, two preliminary snap accelerations to remove loose soot from the exhaust system for a stabilized reading, and a minimum of three snap accelerations for the official test, the average of which shall constitute the final test result; and

14. The pass/fail determination shall be based upon three valid smoke opacity test results averaged arithmetically and compared to the pass/fail standards appropriate for the engine model year.

(b) The testing procedures for the rolling acceleration smoke opacity test, required pursuant to N.J.A.C. 7:27-14.5, shall be performed on a straight and level road course, as follows:

1. Determine the engine horsepower from the engine identification plate or engine serial number. Refer to Table 1 below and input the nominal stack size into the smokemeter. If the engine identification plate is missing, inaccessible or illegible, measure the outside diameter of the exhaust pipe extending from the exhaust manifold with a precision caliper or equivalent gauge, rounding to the nearest inch;

2. For a DEIC, only, affix the RPM sensor to the engine and vehicle according to the smokemeter manufacturer's instructions;

3. For a DEIC, only, insert the engine oil temperature sensor into the oil dipstick tube and into the crankcase oil according to the smokemeter manufacturer's instructions;

4. For a DEIC, only, connect the engine RPM and oil temperature sensors to the smokemeter according to the smokemeter manufacturer's instructions;

5. Affix the smokemeter according to the manufacturer's instructions to the end of the vehicle's exhaust pipe. For full-flow smokemeters, ensure that the final two feet and the exit of the exhaust pipe is straight, with an internal diameter not to exceed five inches. Appropriate exhaust pipe adapters shall be used as necessary to comply with these specifications. Do not use full-flow smokemeters on vehicles with underbody exhaust pipes which direct the exhaust flow to the ground unless the exhaust gases are redirected away from the ground by the appropriate exhaust pipe adaptor mentioned above;

6. Ensure that the smokemeter is warmed up and calibrated according to N.J.A.C. 7:27B-4.2 and the manufacturer's instructions;

7. Start the engine and operate at curb idle speed;

8. Purge the exhaust system of loose soot and stabilize the smoke opacity readings. For vehicles with low speed diesel engines, conduct one rolling acceleration by rapidly depressing the accelerator pedal to the floor and holding it there for three to five seconds, or until prompted by the smokemeter to release the pedal. For vehicles with medium or high speed diesel engines, conduct three rolling accelerations by rapidly depressing the accelerator pedal to the floor and briefly holding it there until the engine speed reaches approximately 2,500 RPM, then release. The rolling acceleration portion of the test sequence shall be deemed to be complete as soon as:

i. The vehicle has reached a speed of 10 miles per hour;

ii. The engine has reached maximum governed RPM; or

iii. The engine has reached 2,500 RPM;

9. Initiate the test sequence on the smokemeter;

10. Select the appropriate smoke opacity pass/fail standards from N.J.A.C. 7:27-14.6, based upon the engine model year;

11. If using a partial-flow smokemeter, select the appropriate stack size from Table 1 below, based upon the engine horsepower. If using a full-flow smokemeter, enter the engine horsepower and nominal stack size as measured on the vehicle;

12. If using a smokemeter without horsepower input, select the appropriate stack size from Table 1 below, based upon the vehicle's engine horsepower;

13. When testing a vehicle with a manual transmission, depress the clutch and select the appropriate low gear for the degree to which the vehicle is laden to avoid overgearing or lugging. When testing a vehicle with an automatic transmission, place the transmission in "D" or "Drive" only, or the gear position immediately next to "N" or "Neutral";

14. When testing a vehicle with a manual transmission, gradually engage the clutch;

15. Accelerate until the vehicle is rolling forward at a speed equivalent to the engine curb idle, then increase the engine speed by 200 RPM, +/-50 RPM;

16. When testing a vehicle with a low speed diesel engine, rapidly depress the accelerator pedal to the floor and hold for approximately three to five seconds or until prompted by the smokemeter to release the accelerator. When testing a vehicle with a medium or high speed diesel engine, rapidly depress the accelerator pedal to the floor and hold it there until an engine RPM of approximately 2,500 RPM is achieved, then release the accelerator pedal. When testing a vehicle with a manual transmission, do not shift to the next gear. The rolling acceleration portion of the test sequence shall be deemed to be complete as soon as:

i. The vehicle has reached a speed of 10 miles per hour;

ii. The engine has reached maximum governed rpm; or

iii. The engine has reached 2,500 rpm;

17. Release the accelerator pedal, disengage the clutch and bring the vehicle to a stop; and

18. Determine whether the vehicle has passed or failed by comparing the smoke opacity test result to the standards set forth at N.J.A.C. 7:27-14.6 appropriate for the test vehicle's engine model year.

(c) The testing procedures for the power brake smoke opacity test, required pursuant to N.J.A.C. 7:27-14.5, shall be performed, on a vehicle with a medium or high speed diesel engine and an automatic transmission only, as follows:

1. Unless the vehicle engine is of a torque-tube design, inspect the vehicle's drive shaft, U-joints and slip-joints for mechanical integrity. Discontinue testing of any vehicle exhibiting signs of appreciable looseness or wear in the U-joints or slip-joints, or any damage to the drive shaft which would adversely affect the vehicle's mechanical integrity. Do not resume testing unless and until the defects are repaired;

2. Ensure that the parking and service brakes are in good operating condition. Discontinue testing of any vehicle exhibiting inoperable or inadequate parking or service brakes. Do not resume testing unless and until the defects are repaired;

3. Determine the engine horsepower from the engine identification plate or engine serial number. Refer to Table 1 below and input the nominal stack size into the smokemeter. If the engine identification plate is missing, inaccessible or illegible, measure the outside diameter of the exhaust pipe extending from the exhaust manifold with a precision caliper or equivalent gauge, rounding to the nearest inch;

4. For a DEIC, only, affix the RPM sensor to the engine and vehicle according to the smokemeter manufacturer's instructions;

5. For a DEIC, only, insert the engine oil temperature sensor into the oil dipstick tube and into the crankcase oil according to the smokemeter manufacturer's instructions;

6. For a DEIC, only, connect the engine RPM and oil temperature sensors to the smokemeter according to the smokemeter manufacturer's instructions;

7. Affix the smokemeter according to the manufacturer's instructions to the end of the vehicle's exhaust pipe. For full-flow smokemeters, ensure that the final two feet and the exit of the exhaust pipe is straight, with an internal diameter not to exceed five inches. Appropriate exhaust pipe adapters shall be used as necessary to comply with these specifications. Do not use full-flow smokemeters on vehicles with underbody exhaust pipes which direct the exhaust flow to the ground unless the exhaust gases are redirected away from the ground by the appropriate exhaust pipe adaptor mentioned above;

8. Ensure that the smokemeter is warmed up and calibrated according to N.J.A.C. 7:27B-4.2 and the manufacturer's instructions;

9. Chock the drive-wheels;

10. Set the vehicle's parking brake;

11. Start the engine and operate at curb idle speed;

12. Purge the exhaust system of loose soot and stabilize the smoke opacity readings. Conduct at least three snap accelerations by rapidly depressing the accelerator pedal to the floor and holding until the engine speed reaches high idle or 2,500 RPM, whichever is lower before releasing, with five to 45 seconds between accelerations;

13. Initiate the test sequence on the smokemeter. Some smokemeters may not have a testing sequence entitled

"power brake acceleration test." For these smokemeters, the snap acceleration test sequence may be used;

14. Select the appropriate smoke opacity pass/fail standard set forth at N.J.A.C. 7:27-14.6, based upon the engine model year;

15. If using a partial-flow smokemeter, select the appropriate stack size from Table 1 below, based upon the engine horsepower. If using a full-flow smokemeter, enter the engine horsepower and the actual stack diameter as measured upon the vehicle exhaust stack outlet;

16. If using a smokemeter without horsepower input, select the appropriate stack size from Table 1 below, based upon the vehicle's engine horsepower;

17. Apply the service brakes with the left foot;

18. Place the transmission in "D" or "Drive" or the gear position immediately next to "N" or "Neutral." Do not use the "LO" or "1" gear positions;

19. Rapidly depress the accelerator pedal to the floor and hold it there for approximately three seconds or until prompted to release it by the smokemeter;

20. Repeat (c)19 above at least two more times for a minimum total of three accelerations, with a pause of between five and 10 seconds between accelerations or until prompted by the smokemeter;

21. Three valid power brake accelerations shall constitute a successful test procedure and terminates the test;

22. Determine whether the vehicle has passed or failed based upon three valid smoke opacity test results averaged arithmetically and compared to the standards set forth at N.J.A.C. 7:27-14.6 appropriate for the test vehicle's engine model year; and

23. If the tests results are invalid and testing must be repeated, allow a minimum of three minutes but no more than five minutes of idling to cool the transmission before repeating the test.

TABLE 1

Engine Horsepower Rating vs. Nominal Stack Size

Manufacturer's Rated Horsepower	Nominal Stack Size in Inches†
Less than 101	2
101-200	3
201-300	4
301 and over	5

†Note: Nominal stack size shall always be used when measuring engine smoke opacity, irrespective of the stack size equipped on the vehicle being tested. For example, a vehicle equipped with an engine rated at 301 horsepower or above which has an exhaust stack measuring seven inches in diameter shall, for purposes of an official test, have a nominal stack size of five inches input to the smokemeter. If, for example, a vehicle has no engine identification plate and is equipped with an exhaust stack measuring six or seven inches in diameter—but the exhaust pipe from the manifold is five inches in diameter—then the nominal stack size shall be five inches.

Amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Rewrote section.
Amended by R.1998 d.309, effective July 6, 1998 (operative July 21, 1998).
See: 30 N.J.R. 901(a), 30 N.J.R. 2476(b).
Rewrote the section.
Amended by R.1999 d.210, effective July 6, 1999 (operative August 10, 1999).
See: 31 N.J.R. 828(a), 31 N.J.R. 1803(b).
In (a), deleted a reference to manual transmissions in the introductory paragraph.
Administrative correction.
See: 38 N.J.R. 5155(b).
Amended by R.2007 d.235, effective August 6, 2007 (operative September 8, 2007).
See: 38 N.J.R. 5244(a), 39 N.J.R. 3352(a).
In the introductory paragraph of (c), and in (c)13 and (c)21, substituted "power brake" for "stall".
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Deleted (d) and (e).

7:27B-4.4 Emission control apparatus, retrofit device and closed crankcase ventilation system examination procedure

(a) The procedure for examination of the emission control apparatus of a diesel-powered motor vehicle, required at N.J.A.C. 7:27-14.5(d), shall consist of a visual check to determine whether all emission control apparatus and exhaust system components are present on the motor vehicle.

(b) If any emission control apparatus or exhaust system component has been disconnected, detached, deactivated or in any other way rendered inoperable or less effective than designed by the original equipment or vehicle or engine manufacturer, the vehicle shall fail the emission control apparatus compliance examination.

(c) The procedure for the one-time compliance inspection of the retrofit device of a diesel-powered motor vehicle required to be retrofitted pursuant to N.J.A.C. 7:27-32.7, as required at N.J.A.C. 7:27-32.21 and 14.5(e), shall be performed as follows:

1. Confirm that the vehicle identification number on the vehicle matches the vehicle identification number on the compliance form;

2. Confirm that the diesel emission control strategy family name on the retrofit label matches the diesel emissions control strategy family name on the compliance form;

3. Confirm that the BART number (BART 1, BART 2 or BART 3) on the compliance form matches the BART number on the retrofit label;

4. Visually confirm the presence of a retrofit device upon the vehicle;

5. If the vehicle satisfies all of the conditions of (c)1 through 4 above, certify on the compliance form that the retrofit requirement has been met; and

6. If the vehicle fails to satisfy any of the conditions at (c)1 through 4 above, certify on the compliance form that the retrofit requirement has not been met.

(d) The procedure for examination of the closed crankcase ventilation system of a school bus required to have a closed crankcase ventilation system installed pursuant to N.J.A.C. 7:27-32.4 and N.J.S.A. 26:2C-8.31, as required at N.J.A.C. 7:27-32.6 and 14.5(f), shall be performed as follows:

1. Confirm that the vehicle identification number on the vehicle matches the vehicle identification number on the compliance form;

2. Visually confirm the presence of a closed crankcase ventilation system that meets the following:

i. The closed crankcase ventilation system must not have any opening that would permit the uncontrolled release of crankcase emissions from the engine, as specified by (d)2ii through v below;

ii. The tubing or similar ducting material originating at the crankcase vent must be ducted to the engine air intake plenum and may include an in-line filtration system;

iii. An in-line filtration system may also have a drainpipe that returns condensed fluids to the crankcase or a collection vessel;

iv. All tubing, ducting or pipes, or connections thereto, leading from the crankcase vent to the terminal point in the air intake system must be closed and secure. This includes connections to any intermediary filters or drain lines, and their terminal points; and

v. There are no visible indications of leaks from closed crankcase ventilation system, such as oil residue at connection points or visible emissions from the closed crankcase ventilation system;

3. If the vehicle satisfies all of the conditions set forth at (d)1 and 2 above, certify upon the compliance form that the closed crankcase ventilation system installation requirement has been met; and

4. If the vehicle fails to satisfy any of the conditions at (d)1 and 2 above certify on the compliance form that the closed crankcase ventilation system installation requirement has not been met.

New Rule, R.1985 d.331, effective July 1, 1985 (operative December 2, 1985).
See: 17 N.J.R. 781(a), 17 N.J.R. 1649(a).
Old rule "Light-duty gasoline fueled motor vehicle emission control apparatus compliance examination procedure" was repealed and this new section adopted except for (a)2 which is still pending.
Public Notice: The Department has decided not to adopt the proposed Plumbtesmo test procedure.
See: 18 N.J.R. 1714(b).
Emergency recodification from 7:27B-4.6 and amendment, R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
Recodified from N.J.A.C. 7:27B-4.9 and amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
In (a) and (c), inserted "gasoline-fueled"; in (b), inserted "in a gasoline-fueled motor vehicle"; and added (d) and (e). Former section recodified as N.J.A.C. 7:27B-4.7.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified with amendments from N.J.A.C. 7:27B-4.8.
Administrative correction.
See: 38 N.J.R. 5155(b).
Amended by R.2007 d.235, effective August 6, 2007 (operative September 8, 2007).
See: 38 N.J.R. 5244(a), 39 N.J.R. 3352(a).
Section was "Emission control apparatus examination procedure". Added (c) and (d).
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Rewrote (a) and (b).
Administrative correction.
See: 42 N.J.R. 792(a).

7:27B-4.5 Procedures for establishing an alternative smoke opacity standard for diesel-powered motor vehicles

(a) Before December 2, 2009, in the event that a heavy-duty diesel vehicle, which is equipped with an engine model year 1973 or older, fails to pass an exhaust emissions inspection as part of either a periodic inspection or an inspection conducted as part of the roadside enforcement program, the owner or lessee of the heavy-duty diesel vehicle may request the Department to establish an alternative smoke opacity standard for that vehicle-engine-chassis combination, if the cause of the failure is due to the design of the vehicle, rather than to insufficient repair and maintenance. The procedures for obtaining this alternative smoke opacity standard are as follows:

1. The owner or lessee shall present to the Department the "Heavy-duty Diesel Emission Testing Report" prepared by the inspector who conducted the smoke opacity testing and determined that the vehicle failed to meet the standards set forth at N.J.A.C. 7:27-14.4 and 14.6, as applicable;

2. The owner or lessee shall submit documentation to the Department, or its designee, demonstrating that the vehicle engine and all fuel control and emissions-related components have been, within 45 calendar days of submission of said documentation:

i. Tuned to minimize the level of smoke in the exhaust emissions consistent with the design, specifications and certified configuration, as applicable, prescribed by the original equipment manufacturer; and

ii. Determined by a licensed diesel emissions inspection center, to be within the design, specifications and certified configuration, as applicable, prescribed by the original equipment manufacturer;

3. The owner or lessee shall subject the vehicle to any other examination or testing required by the Department or the Department's designee. Such examination or testing shall be performed by a person of the Department's choosing; and

4. The owner or lessee shall ensure the performance of any repairs which the Department deems likely to enable the vehicle to meet the smoke opacity standards set forth at N.J.A.C. 7:27-14.4 and 14.6, as applicable.

(b) If the Department determines that the vehicle cannot be repaired to meet the standards set forth at N.J.A.C. 7:27-14.4 and 14.6, it shall issue an alternative smoke opacity standard report to the owner or lessee which establishes an alternative smoke opacity standard for the specific vehicle-engine-chassis combination. The Department shall establish this alternative smoke opacity standard by adding 10 percentage points or the maximum points as necessary to not yield an alternative smoke opacity standard in excess of 100 percent to the highest smoke opacity percentage obtained from all testing of the vehicle performed subsequent to any tuning, repairing, or rebuilding of the engine pursuant to (a)2 above.

(c) In order to have the alternative smoke opacity standard applied when the vehicle is inspected pursuant to the requirements of N.J.A.C. 7:27-14 and this subchapter, an owner or lessee shall present the alternative smoke opacity report issued by the Department to the inspector at the time of the inspection of the vehicle. Failure by the owner or lessee to present the alternative smoke opacity report to the inspector at the time of inspection will result in the application of the smoke opacity standards set forth at N.J.A.C. 7:27-14 otherwise applicable to the vehicle.

New Rule, R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Former section recodified as N.J.A.C. 7:27B-4.12.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.13. Former N.J.A.C. 7:27B-4.5, Procedures for the 2,500 RPM test, was recodified as N.J.A.C. 7:27B-5.4.
Amended by R.2009 d.159, effective May 4, 2009 (operative June 2, 2009).
See: 40 N.J.R. 3541(a), 40 N.J.R. 4478(a), 41 N.J.R. 2009(a).
In the introductory paragraph of (a), substituted "Before December 2, 2009, in" for "In".

7:27B-4.6 Specifications for diesel emissions testing equipment for determining compliance with N.J.A.C. 7:27-14

(a) A smokemeter used to measure smoke opacity in the exhaust emissions of a diesel-powered motor vehicle in order to determine the vehicle's compliance with N.J.A.C. 7:27-14 shall conform to all specifications and standards set forth in SAE J1667 and incorporated herein by reference.

(b) Equipment used for performing the OBD inspection, as set forth at N.J.A.C. 7:27B-4.8, shall be approved by the Department as provided at N.J.A.C. 7:27B-4.2(d) and shall meet the requirements of 40 CFR 85.2231, incorporated herein by reference.

New Rule, R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.15. Former N.J.A.C. 7:27B-4.6, Procedures for the ASM5015 test, was recodified as N.J.A.C. 7:27B-5.5.
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Section was "Specifications for a smokemeter for determining compliance with N.J.A.C. 7:27-14". Rewrote (a) and (b).

7:27B-4.7 Procedures for the visible smoke test

(a) An inspector conducting a visible smoke test to determine a diesel vehicle's compliance with the inspection requirements set forth at N.J.A.C. 7:27-14.5(c)1 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.

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.7, Procedures for the IM240 test, recodified to N.J.A.C. 7:27B-5.6.
New Rule, R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Section was "Reserved".

7:27B-4.8 Procedures for the on board diagnostics inspection

(a) The procedure for the OBD inspection, to be used to determine a light-duty diesel vehicle's compliance with the OBD inspection requirements at N.J.A.C. 7:27-14.5(c)2 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; and

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.

(b) The OBD inspection procedure is largely a process whereby the diesel emissions testing equipment and the motor vehicle's OBD system interface and exchange information. As such, the description of the on board diagnostics inspection procedure set forth 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 the address at N.J.A.C. 7:27B-4.2(e) or by calling (609) 292-7953.

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.8, Emission control apparatus examination procedure, recodified to N.J.A.C. 7:27B-4.4 and 7:27B-5.7.
New Rule, R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Section was "Reserved".

Administrative change.
See: 43 N.J.R. 2328(a).

7:27B-4.9 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.9, Procedures for the evaporative pressure test, recodified to N.J.A.C. 7:27B-5.8.

7:27B-4.10 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.10, (Reserved), recodified to N.J.A.C. 7:27B-5.9.

7:27B-4.11 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.11, Procedures for on-board diagnostics testing, recodified to N.J.A.C. 7:27B-5.10.

7:27B-4.12 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.12, Procedures for the fuel cap leak test, recodified to N.J.A.C. 7:27B-5.11.

7:27B-4.13 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.13, Procedures for establishing an alternative smoke opacity standard for diesel-powered motor vehicles, recodified to N.J.A.C. 7:27B-4.5.

7:27B-4.14 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.14, Specifications for motor vehicle emission testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program, recodified to N.J.A.C. 7:27B-5.12.

7:27B-4.15 (Reserved)

Administrative change.
See: 33 N.J.R. 3550(a).
Former N.J.A.C. 7:27B-4.15, Specifications for a smokemeter for determining compliance with N.J.A.C. 7:27-14, recodified to N.J.A.C. 7:27B-4.6.

SUBCHAPTER 5. AIR TEST METHOD 5: TESTING PROCEDURES FOR GASOLINE-FUELED VEHICLES

Authority

N.J.S.A. 13:1D-5, 13:1D-9, 26:2C-8, 26:2C-8.1, 26:2C-8.2 and 26:2C-8.5.

Source and Effective Date

R.1985 d.3, effective January 21, 1985 (operative July 1, 1985).
See: 16 N.J.R. 2894, 17 N.J.R. 184(a).

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.

"Carbon monoxide" or "CO" means a gas having a molecular composition of one carbon atom and one oxygen atom.

"Chassis dynamometer" or "dynamometer" means a power absorption device utilizing a set of rollers on which a motor vehicle is driven to simulate on-road vehicle operation.

"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 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. 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(m).

"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.

"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.

Administrative change.
See: 33 N.J.R. 3550(a).
Recodified in part from N.J.A.C. 7:27B-7.1.
Amended by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
Added "Data link connector" or "DLC", "Key on engine off" or "KOEO", "Key on engine running" or "KOER", "Malfunction indicator light" or "MIL", "OBD-eligible", "On-board diagnostics" or "OBD", "Readiness" and "Readiness monitors"; rewrote "Motor vehicle testing equipment".
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
In definition "Gasoline-fueled", inserted "in whole or in part" and deleted a comma following "petroleum gas"; in definition "Motor vehicle testing equipment", updated the N.J.A.C. reference and deleted a comma following "testers"; and in definition "On-board diagnostics", inserted "at Title 13 California Code section 1968.1" and substituted "regulations at 40 CFR Part 86" for "II regulations effective for model year 1996 and newer motor vehicles".

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;

3. Prior to testing, ensure that the motor vehicle emission testing equipment is calibrated and warmed-up in accordance with the manufacturer's requirements;

4. Prior to testing, ensure that the vehicle is at normal operating temperature by doing one of the following:

i. Check the vehicle's engine coolant temperature gauge and the vehicle's engine oil temperature gauge to confirm that the vehicle is at a normal operating temperature, as indicated by the gauges; that is, that engine coolant temperature is in the "normal" range as specified by the vehicle manufacturer, or, if the "normal" range is not specified by the vehicle manufacturer, is at least 70 degrees Celsius (160 degrees Fahrenheit) and that engine oil temperature is at least 80 degrees Celsius (175 degrees Fahrenheit). If there is no oil temperature gauge, insert a temperature probe through the oil dip stick tube and into the engine oil to confirm normal operating temperature; or

ii. Operate the vehicle on the road, or on a chassis dynamometer under road load, at speeds above 35 MPH for at least 20 minutes;

5. Discontinue testing any vehicle in an overheated condition, as indicated by a temperature gauge or warning light, or boiling of engine coolant;

6. If the vehicle has two tailpipes, determine whether they are functionally independent. If they are functionally independent, collect exhaust samples from both tailpipes simultaneously; if they are not functionally independent, collect exhaust samples from either tailpipe;

7. When prompted by the motor vehicle emission testing equipment, insert the exhaust sampling probe into the vehicle's tailpipe, using a tailpipe extension if necessary, to an insertion depth of at least ten inches and collect exhaust gases from each tailpipe of a functionally independent exhaust system; and

8. If using a chassis dynamometer, ensure that the air pressure of each of the vehicle's drive wheel tires is in accordance with the recommendation of the motor vehicle manufacturer; or, if such a recommendation is not available, in accordance with the pressure recommendations on the tire sidewall; if not in accordance, inflate or deflate the drive wheel tires, as appropriate.

(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

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.

(d) The Department maintains a list of approved equipment for specific test procedures. The Department shall periodically review and evaluate equipment offered by manufacturers of motor vehicle testing equipment of which it is aware or has been made aware and update this list. A copy of this list can be obtained from:

Department of Environmental Protection
Bureau of Mobile Sources
401 East State Street
Mail Code 401-03G
PO Box 420
Trenton, NJ 08625-0420

Administrative change.
See: 33 N.J.R. 3550(a).
Recodified with amendments from N.J.A.C. 7:27B-4.2 (b) and (d) through (f).
Amended by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
In (a), amended the N.J.A.C. references and inserted "inclusive" following "5.8" in the introductory paragraph; in (b), substituted "at N.J.A.C. 7:27B-5.9" for "in N.J.A.C. 7:27B-5.12"; in (c), deleted "emission" preceding "testing equipment" in the introductory paragraph and rewrote 1.
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
In the introductory paragraph of (a), deleted "inclusive," preceding "shall"; in (a)4i, inserted "or" at the end; in (a)4ii, deleted "or" at the end; deleted (a)4iii; in (b) and (c)1, updated the N.J.A.C. reference; and in the address in (d), substituted "Motor Vehicle Inspection and Maintenance" for "Transportation Control".
Administrative change.
See: 43 N.J.R. 2328(a).

7:27B-5.3 Procedures for the visible smoke test and the idle 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.

(b) An inspector conducting an idle test to determine a gasoline-fueled motor vehicle's compliance with the exhaust emission standards set forth at N.J.A.C. 7:27-15.6(b)1 shall perform the test as follows:

1. With the engine operating at idle and transmission in neutral, insert the sample probe at least 10 inches into the tailpipe. If the motor vehicle's exhaust system prevents insertion to this depth, use a tailpipe extension. For motor vehicles equipped with multiple tailpipes, take exhaust gas measurements from all tailpipes simultaneously;

2. Measure the exhaust concentrations as percent carbon monoxide and parts per million hydrocarbons after stabilized readings are obtained or at the end of 30 seconds, whichever occurs first;

3. If the percent carbon monoxide or parts per million hydrocarbons recorded in (b)2 above exceeds the applicable standards specified in Table 1 at N.J.A.C. 7:27-15.6, increase the vehicle's engine speed to between 2,200 and 2,800 RPM for a period of 30 seconds. Allow the vehicle's engine speed to return to idle and then repeat the exhaust concentration measurement as in (b)2 above;

4. If the percent carbon monoxide or parts per million hydrocarbons recorded in (b)3 above exceeds the applicable standards specified in Table 1 at N.J.A.C. 7:27-15.6, the motor vehicle has failed the idle test; and

5. If the percent carbon monoxide or parts per million hydrocarbons recorded in (b)2 or 3 above does not exceed the applicable standards specified in Table 1 at N.J.A.C. 7:27-15.6, the motor vehicle has passed the idle test.

Emergency amendment R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
Amended by R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
In (b)2, substituted "at idle" for "in the idle mode" and added second sentence.
Recodified from N.J.A.C. 7:27B-4.5 and amended by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Amended section name; in (a), inserted gasoline-fueled. Former section "Smoke opacity testing procedure for diesel-powered autobuses subject to the inspection rules and regulations of the New Jersey Department of Transportation" was repealed.

Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Rewrote the section.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.4.

7:27B-5.4 Procedures for the two speed idle test

An inspector conducting a two speed idle test to determine a gasoline-fueled motor vehicle's compliance with the exhaust emission standards set forth at N.J.A.C. 7:27-15.6(b)2 shall perform the test in accordance with 40 CFR 85.2215, Two speed idle test—EPA 91, incorporated herein by reference.

Emergency New Rule, R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
Amended by R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
In (a), inserted "performed" preceding "as follows:"; and in (a)3, inserted "For all pre-1996 model year vehicles,", and added last two sentences.
Recodified from N.J.A.C. 7:27B-4.6 by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Former section recodified as N.J.A.C. 7:27B-4.4.
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Rewrote the section.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified with amendments from N.J.A.C. 7:27B-4.5
Amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Section was "Procedures for the 2,500 RPM test". Rewrote the section.

Case Notes

Private inspection center license not suspended; licensee did not improperly certify repairs. Division of Motor Vehicles v. Joe's Auto Service, 92 N.J.A.R.2d (MVH) 1.

7:27B-5.5 Emission control apparatus examination procedure

(a) The procedure for examination of the emission control apparatus of a gasoline-fueled motor vehicle, required at N.J.A.C. 7:27-15.5(f)3, shall, if the motor vehicle had a catalytic converter as original equipment, consist of a visual check to determine whether a properly installed catalytic converter is present on the motor vehicle.

(b) The absence in a gasoline-fueled motor vehicle of a properly installed catalytic converter shall result in a determination of failure to pass the emission control apparatus compliance examination.

(c) A gasoline-fueled motor vehicle that has failed to pass the emission control apparatus compliance examination in accordance with (b) above shall be required to be properly equipped with a replacement catalytic converter certified according to EPA procedures and subsequently reinspected. The reinspection shall consist of a visual check to verify the proper installation of an appropriate replacement catalytic converter.

The following annotations apply to N.J.A.C. 7:27B-5.5 prior to its repeal by R.2009 d.343:

Emergency New Rule, R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
Recodified from N.J.A.C. 7:27B-4.7 by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Former section recodified as N.J.A.C. 7:27B-4.5.
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Rewrote the section.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27-4.6.

The following annotations apply to N.J.A.C. 7:27B-5.5 subsequent to its recodification from N.J.A.C. 7:27B-5.6 by R.2009 d.343:

Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.8.
Recodified from N.J.A.C. 7:27B-5.7 by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
Former N.J.A.C. 7:27B-5.6, Procedures for IM240 test, repealed.
Recodified from N.J.A.C. 7:27B-5.6 by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Former N.J.A.C. 7:27B-5.5, Procedures for the ASM5015 test, repealed.

7:27B-5.6 Procedures 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(f)2, is specified 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 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 set forth 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 Motor Vehicle Inspection and Maintenance at (609) 530-4035.

(c) In the case of a motor vehicle that is not OBD-eligible, as determined by the Department in accordance with N.J.A.C. 7:27-15.5(m), the procedure to be used to determine compliance with the OBD inspection requirements at N.J.A.C. 7:27-15.5(f)2, is specified 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. Administer the appropriate tailpipe exhaust test, as determined at N.J.A.C. 7:27-15.5(g);

6. If the MIL is determined to be functional and is not illuminated with the engine running, then the results of the appropriate tailpipe exhaust test will be used to determine the pass or fail status of the motor vehicle;

7. If the motor vehicle has failed the OBD inspection described in (c)1 through 4 above, the reinspection of the motor vehicle shall include both a repeat of the procedure described in (c)1 through 4 above and, if it has also failed the appropriate tailpipe exhaust pursuant to (c)5 above, a repeat of the tailpipe exhaust test.

Emergency New Rule, R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).
See: 27 N.J.R. 2752(a).
Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).
See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).
New Rule, R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
Recodified from N.J.A.C. 7:27B-4.12 by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Former section recodified as N.J.A.C. 7:27B-4.10.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.11.
Recodified from N.J.A.C. 7:27B-5.10 and amended by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
Rewrote the section. Former N.J.A.C. 7:27B-5.7, Emission control apparatus examination procedure, recodified to N.J.A.C. 7:27B-5.6.
Recodified from N.J.A.C. 7:27B-5.7 and amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
In (a)5, inserted new second sentence and recodified the former second sentence of (a)5 as (a)7; added new (a)6; recodified former (a)6 through (a)11 as (a)8 through (a)13; rewrote (a)13; and in (b), substituted "Motor Vehicle Inspection and Maintenance" for "Transportation Control". Former N.J.A.C. 7:27B-5.6, Emission control apparatus examination procedure, recodified to N.J.A.C. 7:27B-5.5.

7:27B-5.7 Procedures for the fuel cap leak test

(a) An inspector conducting a fuel cap leak test to determine a gasoline-fueled motor vehicle's compliance with the fuel cap leak test requirements at N.J.A.C. 7:27-15.5(f)4 shall perform the test in accordance with the applicable procedures and standards described in the EPA technical guidance document EPA420 R-00-007, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document may be obtained by contacting the Department of Environmental Protection at:

Department of Environmental Protection
Bureau of Mobile Sources
401 East State Street
Mail Code 401-03G
PO Box 420
Trenton, NJ 08625-0420.

New Rule, R.1997 d.56, effective February 3, 1997 (operative March 8, 1997).
See: 28 N.J.R. 2298(b), 29 N.J.R. 498(a).
Recodified from N.J.A.C. 7:27B-4.13 by R.1997 d.393, effective September 15, 1997 (operative October 7, 1997).
See: 29 N.J.R. 971(a), 29 N.J.R. 4108(a).
Former section recodified as N.J.A.C. 7:27B-4.11.
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Rewrote the section.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.12.
Recodified from N.J.A.C. 7:27B-5.11 and amended by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
In (a), amended the N.J.A.C. reference in the introductory paragraph and substituted "EPA420 R-00-007" for "EPA-AA-RSPD-I/M-98-1" in 2. Former N.J.A.C. 7:27B-5.8, Procedures for the evaporative pressure test, repealed.
Recodified from N.J.A.C. 7:27B-5.8 and amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Rewrote the section. Former N.J.A.C. 7:27B-5.7, Procedures for the on-board diagnostics inspection, recodified to N.J.A.C. 7:27B-5.6.
Administrative change.
See: 43 N.J.R. 2328(a).

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

(a) Equipment used for performing the idle test, as set forth at N.J.A.C. 7:27B-5.3(b), and the two speed idle test, as set forth at N.J.A.C. 7:27B-5.4, shall conform with the requirements for such equipment at 40 CFR 85.2225, Steady state test exhaust analysis system—EPA 91, and all subsequent revisions thereto, incorporated herein by reference.

(b) Equipment used for performing the fuel cap leak test, as set forth at N.J.A.C. 7:27B-5.7, shall be in accordance with the applicable specifications described in the EPA technical guidance document EPA420 R-00-007, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document may be obtained from the Public Access Center in the Department of Environmental Protection.

(c) 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.

New Rule, R.1997 d.283, effective July 7, 1997 (operative August 11, 1997).
See: 29 N.J.R. 726(a), 29 N.J.R. 2826(b).
Amended by R.1999 d.408, effective November 15, 1999 (operative December 7, 1999).
See: 31 N.J.R. 2572(a), 31 N.J.R. 3627(a).
Changed N.J.A.C. references throughout; and in (c)2 and (d)2, substituted references to EPA technical guidance document EPA420-R-98-010 for references to EPA technical guidance document EPA-AA-RSPD-I/M-96-1.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified with amendments from N.J.A.C. 7:27B-4.14.
Recodified from N.J.A.C. 7:27B-5.12 and amended by R.2003 d.47, effective January 21, 2003 (operative February 18, 2003).
See: 34 N.J.R. 1811(a), 35 N.J.R. 429(a).
Rewrote the section. Former N.J.A.C. 7:27B-5.9, (Reserved), repealed.
Recodified from N.J.A.C. 7:27B-5.9 and amended by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Rewrote (a); deleted former (b); recodified former (c) and (d) as (b) and (c); rewrote (b); and in (c), updated the first N.J.A.C. reference and substituted "CFR" for "C.F.R.". Former N.J.A.C. 7:27B-5.8, Procedures for the fuel cap leak test, recodified to N.J.A.C. 7:27B-5.7.

7:27B-5.9 (Reserved)

Recodified to N.J.A.C. 7:27B-5.8 by R.2009 d.343, effective November 16, 2009 (operative December 18, 2009).
See: 41 N.J.R. 1606(a), 41 N.J.R. 4195(b).
Section was "Specifications for motor vehicle testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program".