

“Gasoline” means any petroleum distillate or petroleum distillate/oxygenate blend having a Reid vapor pressure of four pounds per square inch (207 millimeters of mercury) absolute or greater and used as an automotive fuel.

“Gas sampling valve” means a two-position heated valve used to purge the sample loop with the source gas and to insert the loop containing the source gas sample into the carrier gas stream leading to the chromatograph. Both loop and valve must be heated to a temperature that will prevent any condensation of the sample gas.

“Isokinetic sampling” means drawing a gas sample through a nozzle into a sampling train at the same velocity as that in the stack or duct.

“Laboratory standard calibrations gases” means three gas mixtures each containing known concentrations of each of the VOC in the source gas (except trace components) in the same matrix, if possible, as will be sampled. One mixture is to have greater than, one mixture is to be approximately equal to, and one mixture is to have less than the expected concentration of VOC in the source gas. These gases can be certified to \pm two percent by the manufacturer or produced locally by approved techniques if the concentration is confirmed by an independent analysis. The standards must be stable in the matrix and container over their period of use.

“LFL” means lower explosive limit.

“Modified particulate train” means a sampling train capable of collecting organic emissions at an isokinetic sampling rate.

“Needle valve” means a fine adjustment valve used to control the source gas sampling rate and constructed of corrosion-resistant material.

“Organic substance” means any chemical compound or mixture of chemical compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbonates, metallic carbides, and ammonium carbonate.

“Ppm” means part per million by volume.

“Partial pressure” means the pressure exerted by a specified component in a mixture of gases.

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

“Petroleum solvent dry cleaning” means a process used for the cleaning of textiles and fabric products in which articles are washed in a solution of organic material produced by petroleum distillation that exists as a liquid under standard conditions, and then dried by exposure to a heated air stream.

“Probe” means glass, stainless steel or Teflon tubing as required by source gas conditions and equipped with a filter, if necessary. The probe and filter must have a heating or

dilution system capable of preventing any condensation of the sample gas.

“Psia” means pounds per square inch absolute.

“Pump” means a leakless Teflon-coated diaphragm pump or equivalent with an appropriate capacity and a heating or dilution system capable of preventing any condensation of the sample.

“Pure component standards” means a gas mixture consisting of only one VOC in an inert gas. A separate mixture is required for each VOC suspected in the source gas.

“Recorder/Integrator” means a strip chart recorder and an optional integrator to calculate the results.

“Reid vapor pressure” or “RVP” means the absolute vapor pressure of a petroleum product in pounds per square inch (kilopascals) at 100 degrees Fahrenheit ($^{\circ}$ F) (37.8 degrees Celsius ($^{\circ}$ C)) as measured by “Method 1-Dry RVP Measurement Method” or “Method 2-Herzog Semi-Automatic Method” promulgated at 40 CFR 80, Appendix E; or any other test method approved in advance in writing by the Department and the EPA.

“Rigid sampling container” means a leak-free sampling container large enough to hold a gas sampling bag and capable of being evacuated to a pressure of 20 inches water without collapsing.

“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.

“Sample line” means glass, Teflon or stainless steel tubing with Teflon or stainless steel fittings, heated if necessary to prevent condensation.

“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.

“SCFH” means standard cubic feet per hour on a wet basis unless otherwise specified in the text.

“SCFM” means standard cubic feet per minute on a wet basis unless otherwise specified in the text.

“Solvent recovery dryer” means a class of dry cleaning dryers that employs a condenser to liquify and recover solvent vapors evaporated in a closed-loop, recirculating stream of heated air.

“Source operation” or “Source” means any process or any identifiable part thereof that emits or can reasonably be anticipated to emit any air contaminant either directly or indirectly into the outdoor atmosphere.

“Standard conditions” means 70 degrees Fahrenheit (°F) (21.1 degrees Celsius (°C)) and one atmosphere pressure (14.7 pounds per square inch absolute or 760 millimeters of mercury).

“Std” means standard.

“Surface coating formulation” means the material used to form a protective, functional, or decorative film including, but not limited to any architectural coating, paint, varnish, ink, or adhesive, applied to or impregnated into a substrate.

“Temperature sensor” means a thermometer, potentiometer with thermocouple, or other temperature sensing device calibrated with an approved standard.

“Test” or “performance test” means a series of test runs used for the purpose of determining emissions of air contaminants to the outdoor atmosphere.

“Test Run” or “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.

“Transfer operation” means the moving of any substance from any storage tank, manufacturing process vessel, or delivery vessel into any receiving vessel.

“Vapor” means the gaseous form of substances which, under standard conditions, are in the solid or liquid state and which can be changed to these states by either increasing the pressure or decreasing the temperature.

“Vapor pressure” means the pressure of the vapor phase of a substance, or the sum of the partial pressures of the vapor phases of individual substances in a mixture of substances, when in equilibrium with the non-vapor phase of the substance or substances.

“Velocity Meter” means an “S” type Pitot tube with a manometer or other appropriate gas flow measuring device.

“Volatile organic compound” or “VOC” means a volatile organic compound as that term is defined by the EPA at 40 CFR 51.100(s), as supplemented or amended, which is incorporated by reference herein.

“Zero gas” means air or gas which contains less than 1 ppm of equivalent carbon or methane.

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).

New definition for “ASTM” and “volatile organic compounds (VOC); amended others to comport with “VOS” to “VOC” changes.

Amended by R.1994 d.313, effective June 20, 1994 (operative July 26, 1994).

See: 25 N.J.R. 3339(a), 26 N.J.R. 2600(a).

Administrative Correction.

See: 27 N.J.R. 1406(a).

Administrative change.

See: 31 N.J.R. 639(b).

Amended by R.2008 d.366, effective December 1, 2008 (operative December 29, 2008).

See: 39 N.J.R. 4492(a), 40 N.J.R. 6769(a).

Rewrote definition “Volatile organic compound”.

7:27B-3.2 Sampling and analytical protocol: acceptable test methods

(a) When N.J.A.C. 7:27-8, 7:27-16, 7:27-17, or 7:27-23 requires a source emissions test, the applicant shall submit a written protocol to the Department at least 30 days prior to the date of the test, to the following address:

Chief, Bureau of Technical Services
Division of Environmental Quality
Department of Environmental Protection
PO Box 411
380 Scotch Road
Trenton, New Jersey 08625-0411

(b) The written protocol shall include a detailed description of the following:

1. Sampling location;
2. Sampling equipment;
3. Sampling and analytical procedures for the tests;
4. Data reporting forms; and
5. Quality assurance procedures.

(c) Any alternative test method, analytical method, instrumentation, source, test period, or data reporting forms shall be submitted in writing with the test protocol for approval at the discretion of the Department at least 30 days prior to the test, to the address set forth in (a) above.

(d) Any changes from the procedures and methods set forth in the protocol may be approved verbally prior to the test at the discretion of the Department; however, the applicant shall note the request and the Department’s response in the final test report submitted by the applicant to the Department.

(e) Any Departmental approval pursuant to (c) or (d) above shall be confirmed in writing by the Department.

(f) The Department may itself employ such alternative procedures when warranted by test conditions or other circumstances.

(g) The applicant shall give notice to the Department at least 48 hours prior to the test in order to afford the opportunity for a Departmental observer(s) to be present.

(h) Performance tests shall be conducted in accordance with test methods set forth hereinafter.

(i) For determining the quality and quantity of VOC from source operations, the prescribed test procedures shall be as follows:

1. For a single known VOC: Procedures for the Direct Measurement of VOC Using a Flame Ionization Detector or a Photoionization Detector or a Non-Dispersive Infrared Analyzer (N.J.A.C. 7:27B-3.7).

2. For a mixture of known VOC in known proportion: Procedures for the Direct Measurement of VOC Using a Flame Ionization Detector, a Photoionization Detector or a Non-Dispersive Infrared Analyzer (N.J.A.C. 7:27B-3.7).

3. For a mixture of known VOC in unknown proportions: Procedures for the Direct Measurement of VOC Using a Gas Chromatograph with a Flame Ionization Detector or other suitable detector (N.J.A.C. 7:27B-3.8).

4. For a mixture containing unknown VOC: A procedure has not been included in the test methods, but an analysis using a gas chromatograph with a mass spectrometer will be required and conducted in accordance with established procedures by a qualified operator. Prior to any such test, the Department must receive and approve a written protocol from the operator.

5. For a known or unknown VOC in a stack where condensation is present, isokinetic sampling will be required. A procedure has not been included in these test methods, but sampling using an approved modified particulate train will be required, which shall be submitted for Departmental review pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

(j) Whenever a direct analysis at the source is not possible, the samples shall be taken in accordance with the procedure described at N.J.A.C. 7:27B-3.9.

(k) Whenever a volume flow rate must be determined to establish mass emission rates of VOC or for any other reason, the methods prescribed in N.J.A.C. 7:27B-1, AIR TEST METHOD 1 (N.J.A.C. 7:27B-3.18 Reference 1), or other

flow determining method which shall be submitted for Departmental review pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

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).
"VOS" replaced by "VOC".

7:27B-3.3 Operating conditions during the test

Insofar as practical, the source operation will be tested while operating at normal routine conditions and, as necessary, at other conditions including, but not limited to, design, maximum and fluctuating rates.

7:27B-3.4 Sampling facilities

(a) The following sampling facilities shall be provided by the party responsible for the emissions:

1. Sampling ports installed at locations specified by the Department and of a size large enough to accommodate the sampling equipment;

2. Safe sampling platforms and safe access thereto conforming with laws and regulations concerning safe construction and safe practice (N.J.A.C. 7:27B-3.18, Reference 2);

3. Utilities as needed for sampling and testing equipment, which may include electrical power and water;

4. Any other facilities exclusive of instrumentation and sensing devices as may be necessary for the Department to accurately determine the emissions of VOC from the source operation;

5. Facilities, as necessary, for representative sampling of raw materials and for the determination of the amount of raw materials being used during the test run; and

6. The facilities installed may be either permanent or temporary, at the discretion of the party responsible for their provision.

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).
"VOS" replaced by "VOC".

7:27B-3.5 Source operations and applicable test methods

The following chart sets forth the applicable test methods, shown by section designation, for the various source operations that are regulated by N.J.A.C. 7:27-8, 7:27-16, 7:27-17, and 7:27-23:

Source Operation	Applicable Test Methods						
	Vapor Pressure	Efficiency of Control Apparatus	Leaks From Source	Emissions From Source	VOC Content	Leak Tightness of Delivery Vessel	Recovered Solvent Flow Rate
Storage of VOC	3.6	3.7 3.8 3.9	3.14				
Transfer Operations Open Top Tanks and Surface Cleaners	3.6 3.6	3.16 3.7 3.8 3.9	3.15	3.11 3.7 3.8 3.9		3.13	
Surface Coating Operations		3.7 3.8 3.9		3.7 3.8 3.9	3.10		
Source Operations Other than Storage Tanks, Open Top Tanks and Surface Outers	3.6	3.7 3.8 3.9	3.14	3.7 3.8 3.9			
Cutback and Emulsi- fied Asphalt					3.12		
Petroleum Solvent Dry Cleaners				3.7 3.8 3.9	3.17		3.17

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).
 Reference to N.J.A.C. 7:27-23 added; "VOS" replaced by "VOC".

7:27B-3.6 Procedures for the determinations of vapor pressures of a single known VOC or mixtures of known and/or unknown VOC

(a) The vapor pressure of a single known volatile organic substance shall be determined as follows:

5. Leak detection equipment standards shall be as follows:

- i. The leak detection equipment shall be certified as safe for operation in explosive atmospheres;
- ii. The monitoring instrument detector shall be capable of measuring the leak definition concentration specified in the appropriate section in N.J.A.C. 7:27-16. Detector types meeting this requirement include but are not limited to catalytic oxidation, flame oxidation, infrared absorption and photoionization; and
- iii. The instrument shall be readable to within five percent of the specific leak concentration and shall have a response time of 30 seconds or less.

(e) The procedure for this section shall be as follows:

1. Mount the positive displacement meter to the top of the atmospheric vent of the storage tank(s). If the vent has restriction, remove the restriction before mounting the meter;
2. Connect the manometer and thermocouple to the taps on the meter;
3. Connect tank truck fuel and vapor return hoses to the underground storage tanks in accordance with procedures outlined by the manufacturer;
4. Check the tank truck and all vapor return line connections with a leak detection instrument for a tight seal before and during the test;
5. Record the initial reading of the gas meter(s);
6. Start the transfer of gasoline to the storage tank(s) in accordance with facilities' established normal procedures;
7. Record temperature, pressure, and gas meter readings at two minute intervals;
8. Record at the start and the end of the test the barometric pressure and ambient temperature;
9. Disconnect the tank truck hoses from the storage tank in accordance with the procedures outlined by the facility when the transfer has been completed;
10. Continue to record temperature, pressure, and gas meter readings at the underground storage tank vent(s) at two-minute intervals for a period of ten minutes after the completion of the gasoline transfer;
11. Record the final reading of the gas meter;
12. Record the total volume of gasoline that was transferred; and
13. Disconnect the positive displacement meter from the atmospheric vent.

(f) Calculate the efficiency of the vapor recovery system using the following equation:

$$E = 1 - \frac{V_v (7.481) (T_v + 460) (P_b)}{V_T (T_v + 460) (29.92)} \times 100$$

Where:

E = Percent efficiency of the vapor recovery system at standard conditions.

V_v = Volume of displaced vapors vented from the atmospheric vent in actual cubic feet (ACF).

V_T = Volume of gasoline transferred to storage tanks in gallons.

T_v = Temperature of vapors vented from atmospheric vent in degrees Fahrenheit.

T_s = Standard temperature (70°F).

P_b = Average barometric pressure during test in inches of mercury.

7.481 = Conversion factor of gallons per cubic foot (Gal/ft³).

29.92 = Standard pressure in inches of mercury.

(g) The test report shall include the following information submitted on the required reporting forms listed in Appendix H. (Any alternative report form shall be submitted to the Department for review pursuant to N.J.A.C. 7:27B-3.2(c) and (e)):

1. A dimensioned sketch of the sampling location detailing number of storage tanks, type of fill pipe; and type of vapor recovery system;
2. The total amount of each type of gasoline transferred;
3. The size of the storage tank(s) into which the gasoline was transferred;
4. The total amount of gasoline present in the storage tank(s) prior to transfer;
5. Pressure/vacuum test date listed on the tank truck; and
6. Identification of the tank truck.

7:27B-3.17 Procedures for the determination of volatile organic compounds emitted from petroleum solvent dry cleaning operations

(a) The method in this section is applicable for the determination of the final recovered solvent flow rate at the completion of the recovery cycle, and the VOC content in all filtration waste. For the same circumstances as described above, any alternative method shall be submitted to the Department for review, pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

(b) This method is based upon:

1. The determination of the volume of the recovered solvent; and
2. The separation and weight determination of the solvent.

(c) The following is a summary of this method:

1. The recovered solvent is diverted to a graduated cylinder at the end of the recovery cycle. The volume of solvent recovered during a one minute period is measured and recorded.
2. The recovered solvent is separated from other filtration waste and weighed.

(d) The procedure for this section shall be as follows:

1. Recovered solvent shall be determined as follows:
 - i. The flow rate of the recovered solvent is measured at the outlet of the solvent-water separator;
 - ii. The flow rate of the recovered solvent is measured at the end of the solvent recovery phase;
 - iii. Divert the flow of the recovered solvent to a graduated cylinder;
 - iv. Record the volume of recovered solvent to the nearest milliliter, after a one minute interval;
 - v. Record the type of articles cleaned and the length of the recovery cycle; and
 - vi. Repeat steps i-v over three cleaning cycles.
2. The solvent content in filtration waste shall be determined as follows:
 - i. Collect three one-kilogram samples of still and filtration waste in air-tight containers which are impervious to petroleum solvents;
 - ii. Record the total mass of articles in kilograms cleaned since the last still boil-down or filter change;
 - iii. Record the total mass of still and filter water in kilograms produced since the last waste removal;
 - iv. Determine the solvent content of the still and filter water using the procedure specified in ASTM D322-80, "Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation" (N.J.A.C. 7:27B-3.18, Reference 15); and
 - v. Report the results as mass of VOC per mass of dry weight of articles dry cleaned in kilograms per kilogram.

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).
"VOS" replaced by "VOC".

7:27B-3.18 Test methods and sources incorporated by reference

(a) The following sources and test methods are incorporated by reference in this subchapter:

1. New Jersey Administrative Code Title 7, Chapter 27B-1, AIR TEST METHOD 1 is available from New Jersey Department of Environmental Protection, John Fitch Plaza, PO Box 027, Trenton, New Jersey 08625. (Free)

2. Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926 are available from the Occupational Safety and Health Administration, U.S. Department of Labor, 1515 Broadway, New York, New York 10036.

3. Code of Federal Regulations, Title 40, Part 80, Appendix E—"Method 1—Dry RVP Measurement Method" and "Method 2—Herzog Semi-Automatic Method" are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

4. ASTM Designation D2879-75, Standard Method for Test for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenscope, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

5. API (American Petroleum Institute) Bulletin 2517, Selecting the Proper Nomograph, 156 William Street, New York, New York 10038.

6. ASTM Designation D2551-80, Standard Method of Test for Vapor Pressure of Petroleum Products (micro-method), American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

7. ASTM Designation D1475-60, Standard Method of Test for Density of Paint, Varnish, Lacquer, and Related Products, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

8. ASTM Designation D2369-81, Standard Method of Test for Volatile Content of Coatings, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

9. ASTM Designation D4017-81, Standard Test Method for Water in Paints and Paint Materials by Karl Fischer Titration Method, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. (\$4.00)

10. ASTM Designation D402-76, Standard Test Method for Distillation of Cut-Back Asphaltic (Bituminous) Products, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (\$4.00).

11. ASTM Designation D-70-76, Standard Test Method for Specific Gravity of Semi-Solid Bituminous Materials, 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 Diluent 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.

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:

Bureau of Technical Services
 Division of Environmental Quality
 Department of Environmental Protection
 PO Box 411 (380 Scotch Road)
 Trenton, New Jersey 08625-0411

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.

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 dipstick 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:

New Jersey Department of Environmental
Protection
Diesel Risk Reduction/HDDVIP
PO Box 418
Trenton, NJ 08625-0418

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.

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;

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 Motor Vehicle Inspection and Maintenance at (609) 530-4035.

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".

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).

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:

New Jersey Department of Environmental Protection
 Bureau of Motor Vehicle Inspection and Maintenance
 PO Box 437
 Trenton, NJ 08625-0437

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".

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 con-

secutive 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 from the Public Access Center in the Department of Environmental Protection.

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.

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".