

CHAPTER 27B

SAMPLING AND ANALYTICAL PROCEDURES

Authority

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

Source and Effective Date

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

Executive Order No. 66(1978) Expiration Date

Chapter 27B, Sampling and Analytical Procedures, is exempt from Executive Order No. 66(1978).

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).

CHAPTER TABLE OF CONTENTS

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

- 7:27B-1.1 Definitions
- 7:27B-1.2 Acceptable test methods
- 7:27B-1.3 Operating conditions during the test
- 7:27B-1.4 Sampling facilities to be provided by the person responsible for emissions
- 7:27B-1.5 Sampling train
- 7:27B-1.6 Performance test principle
- 7:27B-1.7 General Testing Requirements
- 7:27B-1.8 Required test data
- 7:27B-1.9 Preparation for sampling
- 7:27B-1.10 Sampling
- 7:27B-1.11 Sample Recovery
- 7:27B-1.12 Analysis
- 7:27B-1.13 Calculations
- 7:27B-1.14 Validation of test

SUBCHAPTER 2. PROCEDURES FOR THE VISUAL DETERMINATION OF THE OPACITY (PER CENT) AND THE SHADE OR APPEARANCE (RINGELMANN NUMBER) OF EMISSIONS FROM SOURCES

- 7:27B-2.1 Definitions
- 7:27B-2.2 Acceptable observation methods
- 7:27B-2.3 Observation principle
- 7:27B-2.4 General observation requirements
- 7:27B-2.5 Required observation data
- 7:27B-2.6 Certification

SUBCHAPTER 3. AIR TEST METHOD 3: SAMPLING AND ANALYTICAL PROCEDURES FOR THE DETERMINATION OF VOLATILE ORGANIC COMPOUNDS FROM SOURCE OPERATIONS

- 7:27B-3.1 Definitions
- 7:27B-3.2 Sampling and analytical protocol: acceptable test methods
- 7:27B-3.3 Operating conditions during the test
- 7:27B-3.4 Sampling facilities
- 7:27B-3.5 Source operations and applicable test methods
- 7:27B-3.6 Procedures for the determinations of vapor pressures of a single known VOC or mixtures of known and/or unknown VOC
- 7:27B-3.7 Procedures for the direct measurement of volatile organic compounds using a flame ionization detector (FID), a photoionization detector (PID) or a non-dispersive infrared analyzer (NDIR)
- 7:27B-3.8 Procedures for the direct measurement of volatile organic compounds using a gas chromatograph (GC) with a flame ionization detector (FID) or other suitable detector
- 7:27B-3.9 Procedures for the sampling and remote analysis of known volatile organic compounds using a gas chromatograph (GC) with a flame ionization detector (FID) or other suitable detector
- 7:27B-3.10 Procedures for the determination of volatile organic compounds in surface coating formulations
- 7:27B-3.11 Procedures for the determination of volatile organic compounds emitted from transfer operations using a flame ionization detector (FID) or non-dispersive infrared analyzer (NDIR)
- 7:27B-3.12 Procedures for the determination of volatile organic compounds in cutback and emulsified asphalts
- 7:27B-3.13 Procedures for the determination of leak tightness of gasoline delivery vessels
- 7:27B-3.14 Procedures for the direct detection of fugitive volatile organic compound leaks
- 7:27B-3.15 Procedures for the direct detection of fugitive volatile organic compound leaks from gasoline tank trucks and vapor collection systems using a combustible gas detector
- 7:27B-3.16 Procedures for determining the efficiency of gasoline vapor recovery systems at service stations
- 7:27B-3.17 Procedures for the determination of volatile organic compounds emitted from petroleum solvent dry cleaning operations
- 7:27B-3.18 Test methods and sources incorporated by reference

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

- 7:27B-4.1 Definitions
- 7:27B-4.2 General instructions for all tests
- 7:27B-4.3 Procedures for using a smokemeter to measure the smoke opacity of heavy-duty diesel vehicles and diesel buses
- 7:27B-4.4 Emission control apparatus examination procedure
- 7:27B-4.5 Procedures for establishing and alternative smoke opacity standard for diesel-powered motor vehicles
- 7:27B-4.6 Specifications for a smokemeter for determining compliance with N.J.A.C. 7:27-14
- 7:27B-4.7 through 7:27B-4.15 (Reserved)

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

- 7:27B-5.1 Definitions
- 7:27B-5.2 General instructions for all tests
- 7:27B-5.3 Procedures for the visible smoke test and the idle test for gasoline-fueled motor vehicles
- 7:27B-5.4 Procedures for the 2,500 RPM test

- 7:27B-5.5 Procedures for the ASM5015 test
 7:27B-5.6 Procedures for the IM240 test
 7:27B-5.7 Emission control apparatus examination procedure
 7:27B-5.8 Procedures for the evaporative pressure test
 7:27B-5.9 (Reserved)
 7:27B-5.10 Procedures for on-board diagnostics testing
 7:27B-5.11 Procedures for the fuel cap leak test
 7:27B-5.12 Specifications for motor vehicle emission testing equipment for use in the New Jersey Enhanced Inspection and Maintenance Program

APPENDIX 1. THE SAMPLING TRAIN

APPENDIX 2. LABORATORY REPORT—STACK SAMPLING

APPENDIX 3. DERIVATION OF % ISOKINETIC SAMPLING RATE FORMULA

APPENDIX 4. DERIVATION OF EMISSION RATE FORMULA

APPENDIX 5. PRELIMINARY STACK TEST DATA

APPENDIX 6. NOMENCLATURE

APPENDIX 7. (RESERVED)

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 pre-

scribed by the Department. The Department may itself employ such alternates when warranted by test conditions or other circumstances.

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.

7:27B-4.7 (Reserved)

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.

7:27B-4.8 (Reserved)

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.

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.

“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 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.

“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.

“Motor vehicle emission testing equipment” means equipment used to conduct a test of a gasoline-fueled motor vehicle set forth at N.J.A.C. 7:27B, and which satisfies all applicable specifications set forth at N.J.A.C. 7:27B-5.12, Specifications for motor vehicle emission 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, evaporative pressure testing apparatus, evaporative purge testing apparatus, dynamometers, computers and related software.

“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.

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, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10 and 5.11, 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;

- 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; or

- iii. Operate the vehicle on a chassis dynamometer under the ASM5015 load appropriate for the vehicle, for at least 10 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 in N.J.A.C. 7:27B-5.12.

(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 emission 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.

(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 Transportation Control
 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).

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 2,500 RPM test

(a) An inspector conducting a 2,500 RPM 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 as follows:

1. Insert the sample probe into the motor vehicle's tailpipe to a minimum depth of 10 inches. 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. For a motor vehicle of model year 1995 or earlier, use a tachometer or other device approved by the Department to measure engine speed. Attach the tachometer or other device to the motor vehicle in accordance with the tachometer or device manufacturer's instructions. For 1996 and newer model year vehicles, use the OBD data link connector to monitor RPM. In the event that an OBD data link connector is not available or that an RPM signal is not available over the data link, use instead a tachometer;

3. Ensure that the vehicle's transmission is in park or neutral;

4. Increase the vehicle engine speed from idle to between 2,200 and 2,800 RPM and maintain it at that level for the duration of the test, not to exceed 30 seconds. If the engine speed falls and remains below 2,200 RPM or exceeds and remains above 2,800 RPM for more than two consecutive seconds during the test period, invalidate the measured value for that sampling period and extend the test duration accordingly. If any excursion outside of the allowable RPM range lasts for more than ten seconds, invalidate the test, and initiate another 2,500 RPM test;

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

6. If the percent carbon monoxide or parts per million hydrocarbons recorded in (a)5 above exceeds the applicable standards specified in Table 2 at N.J.A.C. 7:27-15.6, repeat the 2,500 RPM test procedure in accordance with (a)4 and 5 above after the vehicle engine has been operated at idle mode for at least 30 seconds and demonstrates no signs of overheating as determined at N.J.A.C. 7:27B-5.2(a)4;

7. If the percent carbon monoxide or parts per million hydrocarbons recorded in (a)6 above exceeds the applicable standards specified in Table 2 at N.J.A.C. 7:27-15.6, the motor vehicle has failed the 2,500 RPM test; and

8. If the percent carbon monoxide or parts per million hydrocarbons recorded in (a)6 or 7 above does not exceed the applicable standards specified in Table 2 at N.J.A.C. 7:27-15.6, the motor vehicle has passed the 2,500 RPM 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).

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

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 Procedures for the ASM5015 test

(a) An inspector conducting an ASM5015 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)3 shall perform the test as follows:

1. Ensure that the dynamometer is warmed up, in stabilized operating condition, and is adjusted and calibrated in accordance with the procedures recommended by the dynamometer manufacturer;

2. Position the motor vehicle on the dynamometer and, if necessary, secure it according to protocol recommended by the dynamometer manufacturer;

3. Set the dynamometer at a load setting determined by the approved motor vehicle emission testing equipment after entry of appropriate motor vehicle parameters, such as body style and number of engine cylinders, in response to the equipment-generated prompts;

4. Insert the sample probe into the motor vehicle's tailpipe to a minimum depth of 10 inches. 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;

5. When conducting the ASM5015 test, operate a motor vehicle with an automatic transmission with the gear selector in drive, and operate a motor vehicle with a manual transmission in first, or, if more appropriate, second gear.

6. Accelerate the motor vehicle to a speed of 15 MPH as indicated on the dynamometer speed indicator. Maintain this speed, ± 1.0 MPH, for the duration of the test sequence. The test sequence shall begin when the dynamometer speed reaches 15 MPH and shall consist of a stabilization period and a pass/fail decision period as follows:

i. The stabilization period shall begin at a test time of zero seconds ($T = 0$) and shall proceed until an elapsed time of $T = 25$ seconds;

ii. The pass/fail decision period shall immediately follow the stabilization period, beginning at $T = 26$ seconds. The vehicle shall pass the ASM5015 test if, at any point between $T = 26$ seconds and $T = 90$ seconds, measurements made of the hydrocarbons, carbon monoxide and oxides of nitrogen in the exhaust emissions indicates that the concentration of each is less than or equal to the applicable standards established in Table 3 at N.J.A.C. 7:27-15.6;

iii. If, prior to $T = 90$ seconds, the vehicle has passed the ASM5015 test, immediately terminate the test in accordance with (a)7 below; and

iv. If, at $T = 90$ seconds, the vehicle has not passed the ASM5015 test, the vehicle shall be determined to have failed the ASM5015 test and the test shall be immediately terminated in accordance with (a)7 below; and

7. Conclude the ASM5015 test by placing the vehicle's transmission in park or neutral after safely bringing the vehicle's drive wheels to a complete stop using the vehicle's brakes.

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.

7:27B-5.6 Procedures for the IM240 test

(a) The IM240 testing procedure may be used on motor vehicles subject to the exhaust emission test in accordance with N.J.A.C. 7:27-15.5(g) or on motor vehicles subject to a

program evaluation test in accordance with N.J.A.C. 7:27-15.5(l).

(b) The procedures for the IM240 test are specified as follows:

1. On and after the date EPA promulgates the exhaust test procedures to be used for the IM240 test at 40 C.F.R. 85.2221, such procedures and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such procedures, the applicable procedures shall be those described in the EPA technical guidance document EPA420 R-98-010, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and may be obtained from the Public Access Center in the Department of Environmental Protection. If the emissions of carbon monoxide, hydrocarbons, or oxides of nitrogen recorded using these procedures exceed the applicable standards specified in Table 4 at N.J.A.C. 7:27-15.6, the motor vehicle shall be determined to fail the IM240 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).

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, amended EPA document references and from where it may be obtained.

Recodified from N.J.A.C. 7:27B-4.8 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-4.6.

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 (b)2, substituted a reference to EPA technical guidance document EPA420-R-98-010 for a reference to EPA technical guidance document EPA-AA-RSPD-I/M-96-1.

Administrative change.

See: 33 N.J.R. 3550(a).

Recodified from N.J.A.C. 7:27B-4.7.

7:27B-5.7 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.

Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.8.

7:27B-5.8 Procedures for the evaporative pressure test

(a) The testing procedure for the evaporative pressure test, to be used to determine a motor vehicle's compliance with the evaporative pressure test requirements at N.J.A.C. 7:27-15.5(f)4, is specified as follows:

1. On and after the date EPA promulgates the procedures to be used for the evaporative pressure test at 40 C.F.R. 85.2222, or elsewhere in Title 40, such procedures and standards and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such procedures and standards, the applicable procedures and standards shall be those described in the EPA technical guidance document EPA420 R-98-010, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and may be obtained from the Public Access Center in the Department of Environmental Protection.

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), substituted "is specified as follows:" for "shall be conducted in accordance with either (b) or (c) below."; added (a)1 and 2; and deleted (b) and (c).
Recodified from N.J.A.C. 7:27B-4.10 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-4.8.
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).
In (a)2, substituted a reference to EPA technical guidance document EPA420-R-98-010 for a reference to EPA technical guidance document EPA-AA-RSPD-I/M-96-1.
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.9.

7:27B-5.9 (Reserved)

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 (c)2, amended EPA document references and from where it may be obtained.
Recodified from N.J.A.C. 7:27B-4.11 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-4.9.
Repealed 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).
Section was "Procedures for the evaporative purge test".
Administrative change.
See: 33 N.J.R. 3550(a).
Recodified from N.J.A.C. 7:27B-4.10.

7:27B-5.10 Procedures for on-board diagnostics testing

The on-board diagnostics test procedure shall be performed in accordance with the procedures at 40 C.F.R. 85.2222, and all subsequent revisions thereto, 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).
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.

7:27B-5.11 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)6 shall perform the test as follows:

1. On and after the date EPA promulgates the procedures to be used for the fuel cap leak test at 40 C.F.R. 85.2222, or elsewhere in Title 40, such procedures and standards and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such procedures and standards, the applicable procedures and standards shall be those described in the EPA technical guidance document EPA-AA-RSPD-IM-98-1, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and 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.

7:27B-5.12 Specifications for motor vehicle emission 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 2,500 RPM test, as set forth at N.J.A.C. 7:27B-5.4, shall conform with the requirements for such equipment at 40 C.F.R. 51 Subpart S Appendix D—Steady State Short Test Equipment, and all subsequent revisions thereto, incorporated herein by reference.

(b) Equipment used for performing the ASM5015 test, specified at N.J.A.C. 7:27B-5.5, shall conform with the following:

1. On and after the date EPA promulgates the ASM5015 equipment specifications at 40 C.F.R. 85.3, such specifications and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such specifications, the applicable specifications shall be those described in the EPA technical guidance document EPA-AA-RSPD-IM-96-2, entitled Acceleration Simulation Mode Test Procedures, Emission Standards, Quality Control Requirements, and Equipment Specifications, July 1996, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and may be obtained from the Public Access Center in the Department of Environmental Protection.

(c) Equipment used for performing the IM240 test, as set forth at N.J.A.C. 7:27B-5.6, shall conform with the following:

1. On and after the date EPA promulgates the IM240 equipment specifications at 40 C.F.R. 85.2226, such specifications and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such specifications, the applicable specifications shall be those described in the EPA technical guidance document EPA420 R-98-010, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and may be obtained from the Public Access Center in the Department of Environmental Protection.

(d) Equipment used for performing the evaporative pressure test, as set forth at N.J.A.C. 7:27B-5.8 or the fuel cap leak test, as set forth at N.J.A.C. 7:27B-5.11, shall be in accordance with the following:

1. On and after the date EPA promulgates the evaporative system inspection equipment specifications at 40 C.F.R. 85.2227, such specifications and all subsequent revisions thereto shall be incorporated herein by reference;

2. Until EPA promulgates such specifications, the applicable specifications shall be those described in the EPA technical guidance document EPA420 R-98-010, entitled IM240 and Evap Technical Guidance, incorporated herein by reference. A copy of this EPA technical guidance document has been filed with the Office of Administrative Law and may be obtained from the Public Access Center in the Department of Environmental Protection.

(e) Equipment used for performing the on-board diagnostics test, as set forth at N.J.A.C. 7:27B-5.10, shall be in accordance with 40 C.F.R. 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.