

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

All provisions of this chapter became effective December 30, 1974 as R.1974 d.360. See: 7 N.J.R. 48(a). Subchapters 2 and 3 and revisions to the original rules became effective March 20, 1975 as R.1975 d.76. 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. 184(a). New Subchapter 3 became effective September 8, 1986 (operative October 10, 1986) as R.1986 d.377. See: 17 N.J.R. 2194(a), 18 N.J.R. 1800(a).

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

Authority

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

7:27B-1.1 Definitions

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

“Bureau” means the Bureau of Air Pollution Control.

“Department” means the Department of Environmental Protection.

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

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

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

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

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

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

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

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

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

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

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

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

7:27B-1.2 Acceptable test methods

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

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

5. The sample probe shall be inserted 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, a tailpipe extension shall be used. For motor vehicles equipped with multiple exhaust pipes, exhaust gas measurements shall be taken from all exhaust pipes simultaneously; and

6. A motor vehicle with an automatic transmission shall be operated during the ASM5015 test with the gear selector in drive, and a motor vehicle with a manual transmission shall be operated in first (or, if more appropriate, second) gear.

(d) At the beginning of the ASM5015 test, the motor vehicle shall be accelerated to a speed of 15 MPH as indicated on the dynamometer speed indicator. This speed shall be maintained, ± 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, a pass/fail decision period, and a second chance purge test:

1. The stabilization period shall begin at a test time of zero seconds ($T = 0$) and shall proceed until an elapsed time of $T = 30$ seconds;

2. The pass/fail decision period shall immediately follow the stabilization period, beginning at $T = 31$ seconds. The vehicle shall pass the ASM5015 test if, at any point between $T = 46$ seconds and $T = 106$ 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;

3. If, prior to $T = 106$ seconds, the vehicle has passed the ASM5015 test and the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, the test shall be immediately terminated in accordance with (e) below;

4. If, prior to $T = 106$ seconds, the vehicle has passed the ASM5015 test, but has not passed the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, the test sequence shall continue until $T = 106$ seconds or until the vehicle passes the evaporative purge test, whichever is less;

5. If, at $T = 106$ seconds, the vehicle has not passed the ASM5015 test, but has passed the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, the vehicle shall be determined to have failed the ASM5015 test and the test shall be immediately terminated in accordance with (e) below;

6. If, at $T = 106$ seconds, the vehicle has not passed the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, regardless of the ASM5015 test results, a second chance purge test shall be immediately performed in accordance with (d)7 below;

7. Between $T = 106$ seconds and $T = 116$ seconds, the dynamometer load setting shall be adjusted in accordance with 40 CFR 85.2221(c)(5) and the vehicle accelerated from 15 MPH to a speed of 35 MPH ± 2.0 MPH. If, at any time between $T = 116$ seconds and $T = 146$ seconds, the vehicle has passed the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, the test shall be terminated in accordance with (e) below;

8. If, at $T = 146$ seconds, the vehicle has still not passed the evaporative purge test in accordance with N.J.A.C. 7:27B-4.11, the vehicle shall be determined to have failed (that is, not passed) the evaporative purge test and the test shall be immediately terminated in accordance with (e) below.

(e) The ASM5015 test shall be concluded 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).

7:27B-4.8 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 CFR 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 report EPA-AA-EPDS-IM-93-1, entitled High-Tech I/M Test Procedures, Emission Standards, Quality Control Requirements, and Equipment Specifications, April 1994, incorporated herein by reference. A copy of this EPA report has been filed with the Office of Administrative Law and may be obtained from the Bureau of Transportation Control 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).

7:27B-4.9 Emission control apparatus examination procedure

(a) The procedure for examination of the emission control apparatus of a 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 of a properly installed catalytic converter shall result in a determination of failure to pass the emission control apparatus compliance examination.

(c) A 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.

New Rule, R.1985 d.331, effective July 1, 1985 (operative December 2, 1985).

See: 17 N.J.R. 781(a), 17 N.J.R. 1649(a).

Old rule "Light-duty gasoline fueled motor vehicle emission control apparatus compliance examination procedure" was repealed and this new section adopted except for (a)2 which is still pending.

Public Notice: The Department has decided not to adopt the proposed Plumbtesmo test procedure.

See: 18 N.J.R. 1714(b).

Emergency recodification from 7:27B-4.6 and amendment, R.1995 d.409, effective June 29, 1995 (expires August 28, 1995).

See: 27 N.J.R. 2752(a).

Adopted concurrent proposal, R.1995 d.527, effective August 28, 1995 (operative October 27, 1995).

See: 27 N.J.R. 2752(a), 27 N.J.R. 3806(a).

7:27B-4.10 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, shall be conducted in accordance with either (b) or (c) below.

(b) (Reserved)

(c) The EPA evaporative pressure test shall be performed in accordance with the procedures at 40 CFR section 51.357(a)(10), 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).

7:27B-4.11 Procedures for the evaporative purge test

(a) The testing procedure for the evaporative purge test, to be used to determine a motor vehicle's compliance with the evaporative purge test requirements at N.J.A.C. 7:27-15.5(f)5, shall be conducted in accordance with either (b) or (c) below.

(b) (Reserved)

(c) The EPA evaporative purge test shall be performed in accordance with the following:

1. On and after the date EPA promulgates procedures to be used for the evaporative purge test with the IM240 test at 40 CFR 85.2221, such procedures and all subsequent revisions thereto shall be incorporated herein by reference; and

2. Until EPA promulgates such procedures, the procedures to be used shall be, for a motor vehicle being tested with an IM240 test in accordance with N.J.A.C. 7:27B-4.8 or an ASM5015 test in accordance with N.J.A.C. 7:27B-4.7, those procedures described in the EPA report EPA-AA-EPSP-IM-93-1, entitled High-Tech I/M Test Procedures, Emission Standards, Quality Control Requirements, and Equipment Specifications, April 1994, incorporated herein by reference. A copy of this EPA report has been filed with the Office of Administrative Law and may be obtained from the Bureau of Transportation Control 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).

7:27B-4.12 Procedures for On-Board Diagnostics Testing (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).