

for any motor vehicle which is not susceptible to satisfactory testing using the procedures in subparts B, C, P, and O of this part.

(3) When testing light-duty trucks the following exceptions to the test procedures in subpart B and/or subpart R of this part are applicable:

(i) For mileage accumulation, the manufacturer may use test fuel meeting the specifications for mileage and service accumulation fuels of § 86.113-94, or, for vehicles certified to the National LEV standards, the specifications of § 86.1771. Otherwise, the manufacturer may use fuels other than those specified in this section only with the advance approval of the Administrator.

(ii) [Reserved]. For guidance see § 86.1008-90.

(iii) The manufacturer may perform additional preconditioning on Selective Enforcement Audit test vehicles other than the preconditioning specified in § 86.132, or § 86.1773 for vehicles certified to the National LEV standards, only if the additional preconditioning had been performed on certification test vehicles of the same configuration.

(a)(3)(iv) through (a)(3)(vii) [Reserved]. For guidance see § 86.1008-90.

(a)(3)(viii) The manufacturer need not comply with § 86.142 or § 86.1775, since the records required therein are provided under other provisions of this subpart.

(a)(3)(ix) [Reserved]. For guidance see § 86.1008-90.

(a)(4) [Reserved]. For guidance see § 86.1008-96.

(5) [Reserved]. For guidance see § 86.1008-90.

(6) [Reserved]. For guidance see § 86.1008-96.

(b) through (i) [Reserved]. For guidance see § 86.1008-90.

[62 FR 31238, June 6, 1997]

§ 86.1008-2001 Test procedures.

(a)(1)(i) For heavy-duty engines, the prescribed test procedure is the Federal Test Procedure as described in subparts N, I, and P of this part. The Administrator, may on the basis of a written application by a manufacturer, approve optional test procedures other than those in subparts N, I, and P of this part for any heavy-duty vehicle which is not susceptible to satisfactory test-

ing using the procedures in subparts N, I, and P of this part.

(ii) For heavy-duty vehicles the prescribed test procedures are the Fuel Dispensing Spitback Test as described in § 86.1246-96 (for HDVs with a GVW of less than 14,000 pounds (6,400 kilograms)); this test for fuel spitback is conducted as a stand alone test, thus all references to the test sequence described in figure M96-1 of subpart M of this part can be ignored. Further, the Administrator may, on the basis of a written application by a manufacturer, approve optional test procedures other than those in subpart M of this part for any heavy-duty vehicle which is not susceptible to satisfactory testing using the procedures in subpart M of this part.

(iii) During the testing of heavy-duty diesel engines, the manufacturer shall decide for each engine, prior to the start of the initial cold cycle, whether the measurement of background particulate is required for the cold and hot cycles to be valid. The manufacturer may choose to have different requirements for the cold and hot cycles. If a manufacturer chooses to require the measurement of background particulate, failure to measure background particulate shall void the test cycle regardless of the test results. If a test cycle is void, the manufacturer shall retest using the same validity requirements of the initial test.

(2) For light-duty trucks, the prescribed test procedures are the Federal Test Procedure as described in subpart B and/or subpart R of this part, whichever is applicable, the idle CO test procedure as described in subpart P of this part, the cold temperature CO test procedure as described in subpart C of this part, and the Certification Short Test procedure as described in subpart O of this part. For purposes of Selective Enforcement Audit Testing, the manufacturer shall not be required to perform any of the test procedures in subpart B of this part relating to evaporative emission testing, other than refueling emissions testing, except as specified in paragraph (a)(3) of this section. The Administrator may select and prescribe the sequence of any CSTs. Further, the Administrator may, on the basis of a written application by a

manufacturer, approve optional test procedures other than those in subparts B, C, P, O, and R of this part for any motor vehicle which is not susceptible to satisfactory testing using the procedures in subparts B, C, P, O, and R of this part.

(3) When testing light-duty trucks, the following exceptions to the test procedures in subpart B and/or subpart R of this part are applicable to Selective Enforcement Audit testing:

(i) For mileage accumulation, the manufacturer may use test fuel meeting the specifications for mileage and service accumulation fuels of § 86.113, or, for vehicles certified to the National LEV standards, the specifications of § 86.1771. Otherwise, the manufacturer may use fuels other than those specified in this section only with the advance approval of the Administrator.

(ii) The manufacturer may measure the temperature of the test fuel at other than the approximate mid-volume of the fuel tank, as specified in § 86.131–96(a) with only a single temperature sensor, and may drain the test fuel from other than the lowest point of the tank, as specified in § 86.131–96(b) and § 86.152–98(a), provided an equivalent method is used. Equivalency documentation shall be maintained by the manufacturer and shall be made available upon request.

(iii) The manufacturer may perform additional preconditioning on SEA test vehicles other than the preconditioning specified in § 86.132, or § 86.1773 for vehicles certified to the National LEV standards, only if the additional preconditioning was performed on certification test vehicles of the same configuration.

(iv) If the Administrator elects to use the evaporative/refueling canister preconditioning procedure described in § 86.132–96(k), the manufacturer shall perform the heat build procedure 11 to 34 hours following vehicle preconditioning rather than according to the time period specified in § 86.133–90(a). All references to an evaporative emission enclosure and analyzing for HC during the heat build can be ignored.

(v) The manufacturer may substitute slave tires for the drive wheel tires on the vehicle as specified in paragraph

§ 86.135–90(e): *Provided*, that the slave tires are the same size.

(vi) If the Administrator elects to use the evaporative/refueling canister preconditioning procedure described in § 86.132–96(k), the cold start exhaust emission test described in § 86.137–96 shall follow the heat build procedure described in § 86.133–90 by not more than one hour.

(vii) In performing exhaust sample analysis under § 86.140–94.

(A) When testing diesel vehicles, or methanol-fueled Otto-cycle vehicles, the manufacturer shall allow a minimum of 20 minutes warm-up for the HC analyzer, and for diesel vehicles, a minimum of two hours warm-up for the CO, CO₂, and NO_x analyzers. (Power is normally left on infrared and chemiluminescent analyzers. When not in use, the chopper motors of the infrared analyzers are turned off and the phototube high voltage supply to the chemiluminescent analyzers is placed in the standby position.)

(B) The manufacturer shall exercise care to prevent moisture from condensing in the sample collection bags.

(viii) The manufacturer need not comply with § 86.142, § 86.155, or § 86.1775 since the records required therein are provided under other provisions of this subpart K.

(ix) If a manufacturer elects to perform the background determination procedure described in paragraph (a)(3)(xi) of this section in addition to performing the refueling emissions test procedure, the elapsed time between the initial and final FID readings shall be recorded, rounded to the nearest second rather than minute as described in § 86.154–98(e)(8). In addition, the vehicle soak described in § 86.153–98(e) shall be conducted with the windows and luggage compartment of the vehicle open.

(x) The Administrator may elect to perform a seal test, described in § 86.153–98(b), of both integrated and non-integrated systems instead of the full refueling test. When testing non-integrated systems, a manufacturer

may conduct the canister purge described in §86.153-98(b)(1) directly following the preconditioning drive described in §86.132-96(e) or directly following the exhaust emissions test described in §86.137-96.

(xi) In addition to the refueling test, a manufacturer may elect to perform the following background emissions determination immediately prior to the refueling measurement procedure described in §86.154-98, provided EPA is notified of this decision prior to the start of testing in an SEA.

(A) The SHED shall be purged for several minutes immediately prior to the background determination. Warning: If at any time the concentration of hydrocarbons, of methanol, or of methanol and hydrocarbons exceeds 15,000 ppm C, the enclosure should be immediately purged. This concentration provides a 4:1 safety factor against the lean flammability limit.

(B) The FID (or HFID) hydrocarbon analyzer shall be zeroed and spanned immediately prior to the background determination. If not already on, the enclosure mixing fan and the spilled fuel mixing blower shall be turned on at this time.

(C) Place the vehicle in the SHED. The ambient temperature level encountered by the test vehicle during the entire background emissions determination shall be 80 °F ±3 °F. The windows and luggage compartment of the vehicle must be open and the gas cap must be secured.

(D) Seal the SHED. Immediately analyze the ambient concentration of hydrocarbons in the SHED and record. This is the initial background hydrocarbon concentration.

(E) Soak the vehicle for ten minutes ±1 minute.

(F) The FID (or HFID) hydrocarbon analyzer shall be zeroed and spanned immediately prior to the end of the background determination.

(G) Analyze the ambient concentration of hydrocarbons in the SHED and record. This is the final background hydrocarbon concentration.

(H) The total hydrocarbon mass emitted during the background determination is calculated according to §86.156-98. To obtain a per-minute background emission rate, divide the

total hydrocarbon mass calculated in this paragraph by the duration of the soak, rounded to the nearest second, described in paragraph (a)(3)(xi)(G) of this section.

(I) The background emission rate is multiplied by the duration of the refueling measurement obtained in paragraph (a)(3)(ix) of this section. This number is then subtracted from the total grams of emissions calculated for the refueling test according to §86.156-98(a) to obtain the adjusted value for total refueling emissions. The final results for comparison with the refueling emission standard shall be computed by dividing the adjusted value for total refueling mass emissions by the total gallons of fuel dispensed in the refueling test as described in §86.156-98(b).

(xii) In addition to the requirements of subpart B of this part, the manufacturer shall prepare gasoline-fueled and methanol-fueled vehicles as follows prior to emission testing:

(A) The manufacturer shall inspect the fuel system to ensure the absence of any leaks of liquid or vapor to the atmosphere by applying a pressure of 14.5±0.5 inches of water (3.6±0.1 Kpa) to the fuel system allowing the pressure to stabilize and isolating the fuel system from the pressure source. Following isolation of the fuel system, pressure must not drop more than 2.0 inches of water (0.5 Kpa) in five minutes. If required, the manufacturer shall perform corrective action in accordance with paragraph (d) of this section and report this action in accordance with §86.1009-2001(d).

(B) When performing this pressure check, the manufacturer shall exercise care to neither purge nor load the evaporative or refueling emission control systems.

(C) The manufacturer may not modify the test vehicle's evaporative or refueling emission control systems by component addition, deletion, or substitution, except to comply with paragraph (a)(3)(ii) of this section if approved in advance by the Administrator.

(4) When testing light-duty trucks, the following exceptions to the test procedures in subpart C of this part are applicable to Selective Enforcement Audit testing:

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(i) The manufacturer may measure the temperature of the test fuel at other than the approximate mid-volume of the fuel tank, as specified in §86.131-90(a), and may drain the test fuel from other than the lowest point of the fuel tank as specified in §86.131-90(b), provided an equivalent method is used. Equivalency documentation shall be maintained by the manufacturer and shall be made available to the Administrator upon request.

(ii) In performing exhaust sample analysis under §86.140-94, the manufacturer shall exercise care to prevent moisture from condensing in the sample collection bags.

(iii) The manufacturer need not comply with §86.142-90 since the records required therein are provided under other provisions of this subpart K.

(iv) In addition to the requirements of subpart C of this part, the manufacturer shall prepare gasoline-fueled vehicles as follows prior to exhaust emission testing:

(A) The manufacturer shall inspect the fuel system to ensure the absence of any leaks of liquid or vapor to the atmosphere by applying a pressure of 14.5 ± 0.5 inches of water (3.6 ± 0.1 Kpa) to the fuel system allowing the pressure to stabilize and isolating the fuel system from the pressure source. Following isolation of the fuel system, pressure must not drop more than 2.0 inches of water (0.5 Kpa) in five minutes. If required, the manufacturer shall perform corrective action in accordance with paragraph (d) of this section and report this action in accordance with §86.1009-2001(d).

(B) When performing this pressure check, the manufacturer shall exercise care to neither purge nor load the evaporative or refueling emission control system.

(C) The manufacturer shall not modify the test vehicle's evaporative or refueling emission control system by component addition, deletion, or substitution, except if approved in advance by the Administrator, to comply with paragraph (a)(4)(ii) of this section.

(5) When testing light-duty trucks, the exceptions to the test procedures in subpart O of this part applicable to Selective Enforcement Audit testing are

listed in paragraphs (a)(5) (i) and (ii) of this section.

(i) The manufacturer need not comply with §86.1442, since the records required therein are provided under provisions of this subpart K.

(ii) In addition to the requirements of subpart O of this part, the manufacturer must prepare vehicles as in paragraphs (a)(5)(ii) (A) through (C) of this section prior to exhaust emission testing.

(A) The manufacturer must inspect the fuel system to insure the absence of any leaks of liquid or vapor to the atmosphere by applying a pressure of 14.5 ± 0.5 inches of water (3.6 ± 0.1 Kpa) to the fuel system, allowing the pressure to stabilize, and isolating the fuel system from the pressure source. Pressure must not drop more than 2.0 inches of water (0.5 Kpa) in five minutes. If required, the manufacturer performs corrective action in accordance with this section and must report this action in accordance with §86.1009-2001.

(B) When performing this pressure check, the manufacturer must exercise care to neither purge nor load the evaporative or refueling emission control system.

(C) The manufacturer may not modify the test vehicle's evaporative or refueling emission control system by component addition, deletion, or substitution.

(b)(1) The manufacturer shall not adjust, repair, prepare, or modify the vehicles selected for testing and shall not perform any emission tests on vehicles selected for testing pursuant to the test order unless this adjustment repair, preparation, modification, and/or tests are documented in the manufacturer's vehicle assembly and inspection procedures and are actually performed or unless these adjustments and/or tests are required or permitted under this subpart or are approved in advance by the Administrator.

(2) For 1984 and later model years the Administrator may adjust or cause to be adjusted any engine or vehicle parameter which the Administrator has determined to be subject to adjustment for certification, Selective Enforcement Audit testing, and Production

Compliance Audit testing in accordance with §86.090-22(c)(1), to any setting within the physically adjustable range of that parameter, as determined by the Administrator in accordance with §86.090-22(e)(3)(ii), prior to the performance of any tests. However, if the idle speed parameter is one which the Administrator has determined to be subject to adjustment, the Administrator shall not adjust it to a setting which causes a lower engine idle speed than will be possible within the physically adjustable range of the idle speed parameter if the manufacturer had accumulated 125 hours of service on the engine or 4,000 miles on the vehicle under paragraph (c) of this section, all other parameters being identically adjusted for the purpose of comparison. The manufacturer may be requested to supply information to establish such an alternative minimum idle speed. The Administrator, in making or specifying such adjustments, will consider the effect of the deviation from the manufacturer's recommended setting on emissions performance characteristics as well as the likelihood that similar settings will occur on in-use heavy-duty engines or light-duty trucks. In determining likelihood, the Administrator will consider factors such as, but not limited to, the effect of the adjustment on engine or vehicle performance characteristics and surveillance information from similar in-use vehicles.

(c) Prior to performing emission testing on an SEA test engine, the manufacturer may accumulate on each engine a number of hours of service equal to the greater of 125 hours or the number of hours the manufacturer accumulated during certification on the emission-data engine corresponding to the configuration specified in the test order. Prior to performing emission testing on an SEA test vehicle, the manufacturer may accumulate on each vehicle a number of miles equal to the greater of 4,000 miles, or the number of miles the manufacturer accumulated during certification on the emission-data vehicle corresponding to the configuration specified in the test order.

(1) Service or mileage accumulation must be performed in a manner using good engineering judgment to obtain

emission results representative of normal production vehicles. This service or mileage accumulation must be consistent with the new vehicle break-in instructions contained in the applicable vehicle owner's manual, if any.

(2) The manufacturer shall accumulate service at a minimum rate of 16 hours per engine or mileage at a minimum rate of 300 miles per vehicle during each 24-hour period, unless otherwise provided by the Administrator.

(i) The first 24-hour period for service or mileage accumulation shall begin as soon as authorization checks, inspections and preparations are completed on each engine or vehicle.

(ii) The minimum service or mileage accumulation rate does not apply on weekends or holidays.

(iii) If the manufacturer's service or mileage accumulation target is less than the minimum rate specified (16 hours or 300 miles per day), then the minimum daily accumulation rate shall be equal to the manufacturer's service or mileage accumulation target.

(3) Service or mileage accumulation shall be completed on a sufficient number of test engines or vehicles during consecutive 24-hour periods to assure that the number of engines or vehicles tested per day fulfills the requirements of paragraph (g) of this section.

(d) The manufacturer shall not perform any maintenance on test vehicles or engines after selection for testing, nor shall the Administrator allow deletion of any test vehicle or engine from the test sequence, unless requested by the manufacturer, and approved by the Administrator before any test vehicle or engine maintenance or deletion.

(e) The manufacturer shall expeditiously ship test engines or vehicles from the point of selection to the test facility. If the test facility is not located at or in close proximity to the point of selection, the manufacturer shall assure that the test engines or vehicles arrive at the test facility within 24 hours of selection: *Except*, that the Administrator may approve more time based upon a request by the manufacturer accompanied by a satisfactory justification.

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(f) If an engine or vehicle cannot complete the service or mileage accumulation or emission test because of a malfunction, the manufacturer may request that the Administrator authorize the repair of that engine or vehicle or its deletion from the test sequence.

(g) Whenever the manufacturer conducts testing pursuant to a test order issued under this subpart, the manufacturer shall notify the Administrator within one working day of receipt of the test order, which test facility will be used to comply with the test order and the number of available test cells at that facility. If no test cells are available at the desired facility, the manufacturer must provide alternate testing capability satisfactory to the Administrator.

(1) Heavy-duty engine manufacturers with projected sales for the United States market for that year of 30,000 or greater shall complete emission testing at their facility on a minimum of two engines per 24-hour period, including each voided test and each diesel engine smoke test.

(2) Heavy-duty engine manufacturers with projected sales for the United States market for that year of less than 30,000 shall complete emission testing at their facility on a minimum of one engine per 24-hour period, including each voided test and each diesel engine smoke test.

(3) Light-duty truck and heavy-duty vehicle manufacturers shall perform a combination of tests pursuant to paragraph (a) of this section so that a minimum of four tests are performed per 24 hour period, including voided tests, for each available test cell.

(4) The Administrator may approve a longer period based upon a request by a manufacturer accompanied by satisfactory justification.

(h) The manufacturer shall perform test engine or vehicle selection, shipping, preparation, service or mileage accumulation, and testing in such a manner as to assure that the audit is performed in an expeditious manner.

(i) The manufacturer may retest any test vehicle or engine after a fail decision has been reached in accordance with § 86.1010–2001(d) based on the first test on each vehicle or engine; except that the Administrator may approve

retests at other times during the audit based upon a request by the manufacturer accompanied by a satisfactory justification. The manufacturer may test each vehicle or engine a total of three times. The manufacturer shall test each vehicle or engine the same number of times. The manufacturer may accumulate additional service or mileage before conducting retests, subject to the provisions of paragraph (c) of this section.

[59 FR 16305, Apr. 6, 1994, as amended at 62 FR 31239, June 6, 1997; 62 FR 47123, Sept. 5, 1997]

§ 86.1008–2004 Test procedures.

Section 86.1008–2004 includes text that specifies requirements that differ from § 86.1008–2001. Where a paragraph in § 86.1008–2001 is identical and applicable to § 86.1008–2004, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1008–2001.”

(a)(1)(i) For heavy-duty engines, the prescribed test procedure is the Federal Test Procedure as described in subparts N, I, and P of this part, except that 2004 and later model year engines shall not be subject to the test procedures specified in § 86.1380, and 2007 and later model year engines shall not be subject to the test procedures specified in §§ 86.1360(b)(2), 86.1360(f), 86.1370, and 86.1372. The Administrator may, on the basis of a written application by a manufacturer, approve optional test procedures other than those in subparts N, I, and P of this part for any heavy-duty vehicle which is not susceptible to satisfactory testing using the procedures in subparts N, I, and P of this part.

(a)(1)(ii) through (i) [Reserved]. For guidance see § 86.1008–2001.

[65 FR 59957, Oct. 6, 2000]

§ 86.1009–84 Calculation and reporting of test results.

(a) Initial test results are calculated following the Federal Test Procedure specified in § 86.1008–94(a). Round the initial test results to the number of decimal places contained in the applicable emission standard, expressed to one additional significant figure.