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40 CFR Ch. I (7-1-07 Edition)

(3) A rebuilder of original equipment or aftermarket parts, or

(4) A party that licenses others to sell its parts.

(d) *Agency* means the Environmental Protection Agency.

(e) *Certified Aftermarket Part* means any aftermarket part which has been certified pursuant to this subpart.

(f) *Emission Warranty* means those warranties given by vehicle manufacturers pursuant to section 207 of the Act.

(g) *Emission-Critical Parameters* means those critical parameters and tolerances which, if equivalent from one part to another, will not cause the vehicle to exceed applicable emission standards with such parts installed.

(h) *Engine Family* means the basic classification unit of a vehicle's product line for a single model year used for the purpose of emission-data vehicle or engine selection and as determined in accordance with 40 CFR 86.078-24.

(i) *Vehicle or Engine Configuration* means the specific subclassification unit of an engine family or certified part application group as determined by engine displacement, fuel system, engine code, transmission and inertia weight class, as applicable.

(j) *Certification Vehicle Emission Margin* for a certified engine family means the difference between the EPA emission standards and the average FTP emission test results of that engine family's emission-data vehicles at the projected applicable useful life mileage point (i.e., useful life mileage for light-duty vehicles is 50,000 miles and for light-duty trucks is 120,000 miles for 1985 and later model years or 50,000 miles for 1984 and earlier model years).

(k) *Applications* means all vehicle or engine configurations for which one part is being certified as set forth in the aftermarket part manufacturer's notification of intent to certify pursuant to §85.2115(a)(1).

[45 FR 78458, Nov. 25, 1980, as amended at 54 FR 32588, Aug. 8, 1989]

§85.2114 Basis of certification.

(a) *Prior to certifying*, the aftermarket part manufacturer must determine:

(1) Whether the part to be certified is an emission related part as defined in

§85.2102. The MOD Director shall deny certification to any parts which he or she determines is not an emission related part.

(2) The vehicle or engine configurations for which this part is being certified. These are the vehicle and engine designs for which the aftermarket part manufacturer intends to sell the certified aftermarket part.

(3) Whether the part qualifies under one of the part categories, listed in §85.2122 of this subpart that are eligible to certify using emission critical parameters and, if so, whether the manufacturer elects to demonstrate certification using emission critical parameters. An aftermarket part may be certified under this category only if the part's emission-critical parameters, as set forth in §85.2122, are equivalent to those of the original equipment or previously certified part it is to replace. Compliance with the emission-critical parameters discussed in paragraph (b) of this section may be demonstrated by compliance with the relevant test procedures and criteria specified in appendix I to this subpart. The requirements of this paragraph apply to all on-road vehicles and engines. Alternatively, the manufacturer may elect to demonstrate certification compliance according to the emission test procedures described in paragraph (c) of this section.

(b) *For parts eligible to certify using emission-critical parameters, certification compliance can be demonstrated as follows.* (1) The durability procedure contained in appendix I to this subpart can be used. As an alternative, the aftermarket part manufacturer may use a different durability procedure if it can demonstrate to the MOD Director that the alternative procedure results in an improved technical evaluation of the part's influence on vehicle or engine emissions for its useful life mileage interval, or results in a significant cost savings to the aftermarket part manufacturer with no loss in technical validity compared to the recommended durability procedure. The aftermarket part manufacturer shall receive the written approval from the MOD Director prior to implementation of the alternative procedures.

(2) Compliance with certification requirements is based on conformance with all emission-critical parameters in § 85.2122. This shall be accomplished by performing such procedures, tests, or analyses described in appendix I, or other procedures subject to the MOD Director's approval, necessary to ascertain with a high degree of certainty the emission-critical parameter specifications and tolerances for the aftermarket part and the original equipment or previously certified part for which an equivalent aftermarket certified part is to be used.

(i) If information is available in Appendix I of this subpart to identify the applicable emission-critical parameters, the aftermarket part certifier must use such information.

(ii) If sampling and analysis of original equipment or previously certified parts is relied upon, the aftermarket part certifier must use sound statistical sampling techniques to ascertain the mean and range of the applicable emission parameters.

(iii) If an aftermarket part replaces more than one part on the same application, it may be certified only if the aftermarket part meets the applicable emission-critical parameters of § 85.2122 for each part or parts which the aftermarket part is to replace. If an aftermarket part is to replace more than one part or an entire system, compliance must be demonstrated for all emission-critical parameters involved, except those which relate solely to the interface between the parts being replaced by the aftermarket part.

(c) *For parts certifying on the basis of emission test results, durability demonstration testing shall be conducted as follows.* (1) Prior to certification emission testing, the actual aftermarket part used for certification testing must meet the durability demonstration requirements of this paragraph for at least the part's useful life mileage interval.

(i) If an original equipment part has no scheduled replacement interval, then the useful life mileage interval of the aftermarket part of that type or which replaces the function of that part may be certified with a service interval less than the useful life of the

motor vehicle or motor vehicle engine, or

(ii) If any provision of 40 CFR part 86 establishes a minimum replacement or service interval for an original equipment part during vehicle or engine certification, then the useful life mileage interval of the aftermarket part of that type or which replaces the function of that part is said minimum interval.

(2) The part manufacturer must decide whether it can demonstrate to the MOD Director that, during normal vehicle operation, the candidate part will not accelerate deterioration of any original equipment emission related parts. This demonstration must be based on technical rationale that shows that the candidate part has no significant physical or operational effect on any original emission components or system which would be different than that experienced by the vehicle operating with all original equipment emission system parts. The part's effect on each major emission system must be addressed separately in the demonstration.

(i) If the aftermarket part to be certified accelerates deterioration of any existing emission related parts then certification shall be carried out as specified under the paragraph (c)(3) of this section for parts that accelerate deterioration of existing emission related parts.

(ii) If the aftermarket part manufacturer can demonstrate that the part to be certified will not accelerate deterioration of any existing emission related components, then the manufacturer can certify according to paragraph (c)(4) in this section for parts demonstrated to not accelerate deterioration of existing emission related parts.

(3) *For aftermarket parts that accelerate deterioration of existing emission related parts during normal operation.* (i) The aftermarket test part can be installed on the durability test vehicle and aged for 50,000 miles using the vehicle durability driving schedules contained in part 86, appendix IV. As an alternative, the aftermarket part manufacturer may use a different durability procedure if it can demonstrate to the MOD Director that the alternative procedure

results in an improved technical evaluation of the part's influence on vehicle or engine emissions for the part's useful life mileage interval, or results in a significant cost savings to the aftermarket part manufacturer with no loss in technical validity compared to the recommended durability schedules in part 86, appendix IV. The aftermarket part manufacturer shall receive the written approval from the MOD Director prior to implementation of the alternative procedures.

NOTE: At the time of certification emission testing, the same part and vehicle combination used for mileage accumulation shall be used for emission testing.

(ii) Where the comparable original equipment part has a recommended replacement interval of less than 50,000 miles, the test part shall be replaced no sooner than its useful life mileage interval during the required 50,000 mile durability demonstration.

NOTE: At the time of certification emission testing, one of the aftermarket parts that accumulated at least its useful life mileage during the aging process under this paragraph shall be installed on the durability test vehicle that has accumulated 50,000 miles.

(4) *For aftermarket parts demonstrated not to accelerate deterioration on existing emission related parts during normal operation*, the part manufacturer must determine whether the part will cause a noticeable change in vehicle driveability.

(i) Parts that cause no noticeable change in vehicle driveability, performance, and/or fuel economy when the part fails, the durability driving schedules contained in part 86, appendix IV can be used. As an alternative, the aftermarket part manufacturer may use a different durability procedure if it can demonstrate to the MOD Director that the alternative procedure results in an improved technical evaluation of the part's influence on vehicle or engine emissions for its useful life mileage interval, or results in a significant cost savings to the aftermarket part manufacturer with no loss in technical validity compared to the durability schedules in part 86, appendix IV. The aftermarket part manufacturer shall receive the written approval from the MOD Director prior to

implementation of the alternative procedures.

(ii) Parts demonstrated to cause a noticeable change in vehicle driveability, performance, and/or fuel economy when the part fails, are exempt from aging if the part manufacturer can demonstrate to the MOD Director that the primary failure mode of the aftermarket component or system affects the driveability, performance, and/or fuel economy of the vehicle at a level readily detectable by the driver and likely to result in near term repair of failing components and correction of the emissions failure. (Use of on-board diagnostics and malfunction indicators as covered in paragraph (g) of this section is not necessarily an adequate demonstration that the certified part will be replaced. The part manufacturer must demonstrate that the diagnostic and malfunction indicator system will routinely result in repair or replacement of the part in use).

(5) *For parts which only affect evaporative emissions performance*, the aftermarket part manufacturer shall determine and demonstrate to the MOD Director the appropriate durability procedure to age its part. The demonstration shall include all documentation, analyses, and test results that support this determination, and the documentation that support the durability procedure results shall be submitted with the notification of intent to certify as per §85.2115 and is subject to MOD Director's review.

(6) *Durability demonstration vehicle selection*. The demonstration vehicle used must represent the "worst case" of all the configurations for which the aftermarket part is being certified. The worst case configuration shall be that configuration which will likely cause the most deterioration in the performance characteristics of the aftermarket part which influence emissions during the part's useful life mileage. The worst case configuration shall be selected from among those configurations for which the aftermarket part is to be certified. One of the following two methods shall be used to select the worst case durability demonstration vehicle(s):

(i) In the first method, the selection shall be based on a technical judgment

by the aftermarket part manufacturer of the impact of the particular design, or calibration of a particular parameter or combination of parameters, and/or an analysis of appropriate data, or

(ii) In the second alternative method, the selection shall be made from among those vehicle configurations with the heaviest equivalent test weight, and within that group, the largest displacement engine.

(d) *For parts certifying on the basis of emission test results, certification compliance shall be demonstrated as follows.* (1) The emission test to be used is the Federal Test Procedure as set forth in the applicable portions of 40 CFR part 86. Certification emission testing must be carried out using representative production aftermarket parts as provided in paragraph (e) of this section. The test results must demonstrate that the proper installation of the certified aftermarket part will not cause the vehicle to fail to meet any applicable Federal emission requirements under section 202 of the Act.

(2) The following portions of the Federal Test Procedure are not required to be performed when certifying a part using emission testing:

(i) The evaporative emissions portion, if the aftermarket manufacturer has an adequate technical basis for believing that the part has no effect on the vehicle's evaporative emissions;

(ii) The exhaust emissions portion, if the part manufacturer has an adequate technical basis for believing that the part has no effect on the vehicle's exhaust emissions; and

(iii) Other portions therein which the part manufacturer believes are not relevant; *Provided, That* the part manufacturer has requested and been granted a waiver in writing by the MOD Director for excluding such portion.

(3) Exhaust Emission Testing. Certification exhaust emission testing for aftermarket parts shall be carried out in the following manner:

(i) For light duty vehicle parts that accelerate deterioration of existing emission related parts, at least one emission test is required. The test(s) shall be performed according to the Federal Test Procedure on the same test vehicle and aftermarket part com-

ination that was previously aged as required. The results of all tests performed shall be averaged for each emission constituent. The average values shall meet all applicable Federal emission requirements under section 202 of the Act.

(A) For aftermarket parts where the comparable original equipment part has no recommended replacement interval, the same part and vehicle combination used for the durability demonstration shall be used for certification exhaust emission testing.

(B) For aftermarket parts where the comparable original equipment part has a recommended replacement interval of less than 50,000 miles, one of the aftermarket parts that accumulated at least the part's useful life mileage during the durability demonstration must be installed on the durability demonstration vehicle that has accumulated 50,000 miles for certification exhaust emission testing.

(ii) For light duty truck parts that accelerate deterioration of existing emission related parts.

(A) An emission test shall be performed on emission test vehicles at 4000 miles and at 50,000 miles, with the part installed. Exhaust emission deterioration factors for the test vehicle shall be calculated from these two test results. The aftermarket part manufacturer may elect to perform other emission tests at interim mileages. However, any interim tests must be spaced at equal mileage intervals. If more than one test is performed at any one mileage point, then all tests at this point shall be averaged prior to determining the deterioration factor. The deterioration factor shall be calculated using the least squares straight line method, in accordance with § 86.088-28(a). The deterioration factor for each emission constituent shall be used to linearly project the 50,000 mile test result out to 120,000 miles. The projected 120,000 mile test result shall meet light duty truck emission standards.

(B) As an option, the light-duty truck part manufacturer may durability age the test vehicle and aftermarket part to 120,000 miles, and then perform one Federal Test Procedure test. The actual test results in

this case must pass all Federal emission standards.

(iii) For parts demonstrated to not accelerate deterioration of existing emission related parts during normal operation:

(A) If parts cause no noticeable change in vehicle driveability, performance, and/or fuel economy when the part fails, the certification exhaust emission test vehicle need not be the same vehicle as that used for durability demonstration. Upon completion of aging, one Federal Test Procedure test shall be performed with the aged aftermarket part installed on a test vehicle that has just completed one Federal Test Procedure test in the original equipment configuration (i.e., before the aftermarket part or system is installed). If more than one test is performed either before or after the aftermarket part is installed, then an equivalent number of tests must be performed in both configurations. The results of all tests performed before the part is installed shall be averaged and the results of all tests performed after the part is installed shall be averaged for each emission constituent. The difference in Federal Test Procedure emission results between the tests with the aged aftermarket part installed and the test vehicle in the original equipment configuration shall be less than or equal to the certification vehicle emission margin of any and all of the certification test vehicles from the various configurations for which the aftermarket part is being certified.

(B) For parts demonstrated to cause a noticeable change in vehicle driveability, performance, and/or fuel economy when the part fails, no durability aging of the part is required before certification emission testing. One Federal Test Procedure test shall be performed on the test vehicle in its original equipment configuration (i.e., before the aftermarket part or system is installed) and one test with an aftermarket part representative of production (as provided in paragraph (e) of this section) installed on the test vehicle. If more than one test is performed either before or after the aftermarket part is installed, then an equivalent number of tests must be performed in both configurations. The results of all

tests performed with the aftermarket part installed shall be averaged and the results of all tests performed in the original equipment configuration shall be averaged for each emission constituent. The difference in Federal Test Procedure emission results between the tests with the aftermarket part installed and the test vehicle in the original equipment configuration shall be less than or equal to the certification vehicle emission margin of any and all of the certification test vehicles from the various configurations for which the aftermarket part is being certified.

(4) Evaporative emission testing. For parts determined by the part manufacturer (with appropriate technical rationale) to affect only evaporative emissions performance, at least one evaporative emissions portion of the Federal Test Procedure test shall be performed on the vehicle in its original equipment configuration and at least one with the aftermarket part installed. Both the original equipment and aftermarket part shall be aged according to paragraph (c)(5) of this section prior to testing. If more than one test is performed either before or after the aftermarket part is installed, then an equivalent number of tests must be performed in both configurations. The emission results of all tests performed before the part is installed shall be averaged and the emission results of all tests performed after the part is installed shall be averaged. The difference in Federal Test Procedure emission results between the tests with the aged aftermarket part installed and the test vehicle in the original equipment configuration shall be less than or equal to the certification vehicle emission margin of any and all of the certification test vehicles from the various configurations for which the aftermarket part is being certified.

(5) Emission test vehicle selection: The test vehicle used must represent the "worst case" with respect to emissions of all those configurations for which the aftermarket part is being certified. The worst case configuration shall be that configuration which, having the aftermarket part installed, is least likely to meet the applicable emission standards among all those

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configurations on which the aftermarket part is intended to be installed as a certified aftermarket part. One of the following two methods shall be used to select the worst case emission test vehicle(s):

(i) In the first method, the selection shall be based on a technical judgment by the aftermarket part manufacturer of the impact of the particular design or calibration of a particular parameter or combination of parameters and/or an analysis of appropriate data, or

(ii) In the second alternative method, two defined worst case test vehicles shall be selected from the vehicle configurations using the following criteria:

(A) The first test vehicle is that engine family for which the largest number of parts are projected to be sold. Within that family the manufacturer shall select the configurations with the heaviest equivalent test weight, and then within that group the configuration with the largest displacement engine.

(B) The second test vehicle shall be from a different vehicle manufacturer than the first test vehicle, or if the aftermarket part applies to only one vehicle manufacturer, from a different engine family. Engine families are determined by the vehicle manufacturer or when certifying under 40 CFR part 86. Within that group, the second test vehicle is selected from the vehicle configurations with the heaviest equivalent test weight, and then, within that group, the configuration with the largest displacement engine. If a part applies to only one engine family then only the vehicle specified in paragraph (d)(5)(ii)(A), of this section, is required to be tested.

(iii) The results of certification tests using the worst case vehicle selections made in this section shall only be applicable for configurations that are required to meet the same or less stringent (numerically higher) emission standards than those of the worst case configuration.

(iv) The worst case test vehicle(s) selected for certification emission testing is(are) not required to meet Federal emission standards in its original configuration. However, each test vehicle shall have representative emissions

performance that is close to the standards and have no obvious emission defects. Each test vehicle shall be tuned properly and set to the vehicle manufacturer's specifications before testing is performed. Any excessively worn or malfunctioning emission related part shall be repaired prior to testing.

(e) *Test part selection.* Certification shall be based upon tests utilizing representative production aftermarket parts selected in a random manner in accordance with accepted statistical procedures.

(f) *Replacing original equipment parts.* Installation of any certified aftermarket part shall not result in the removal or rendering inoperative of any original equipment emission related part other than the part(s) being replaced. Furthermore, installation of any certified aftermarket part shall not require the readjustment of any other emission related part to other than the vehicle manufacturer specifications, cause or contribute to an unreasonable risk to the public health, welfare or safety, or result in any additional range of parameter adjustability or accessibility to adjustment than that of the vehicle manufacturer's emission related parts.

(g) *Affects on vehicle on board diagnostic system.* Installation of any certified aftermarket part shall not alter or render inoperative any feature of the on-board diagnostic system incorporated by the vehicle manufacturer. The certified part may integrate with the existing diagnostic system if it does not alter or render inoperative any features of the system. However, use of on-board diagnostics or warning indicators to alert the driver to part failure is not sufficient by itself to qualify the part for exemption from aging under paragraph (c)(4)(ii) of this section. The part manufacturer must demonstrate that the diagnostic and malfunction indicator system will routinely result in repair or replacement of the aftermarket part in use.

[54 FR 32588, Aug. 8, 1989]

§ 85.2115 Notification of intent to certify.

(a) At least 45 days prior to the sale of any certified automotive aftermarket part, notification of the