

## Environmental Protection Agency

## § 89.120

PM<sub>adj</sub>=adjusted measured PM level [g/Kw-hr].  
PM=measured weighted PM level [g/Kw-hr].  
BSFC=measured brake specific fuel consumption [G/Kw-hr].  
FSF=fuel sulfur weight fraction.

(3) Where a manufacturer certifies using test fuel with a sulfur content less than or equal to 0.050 weight percent, EPA shall not use emission data collected using test fuel with a sulfur content greater than 0.050 weight percent to determine compliance with the Tier 1 PM standards.

(4) Where a manufacturer certifies using test fuel with a sulfur content greater than 0.050 weight percent, EPA shall not use emission data collected using test fuel with a sulfur content greater than 0.050 weight percent to determine compliance with the Tier 1 PM standards, unless EPA adjusts the PM measurement using the equation specified in paragraph (d)(2) of this section.

[59 FR 31335, June 17, 1994. Redesignated and amended at 63 FR 56995, 57004, Oct. 23, 1998]

### § 89.120 Compliance with emission standards.

(a) If all test engines representing an engine family have emissions less than or equal to each emission standard, that family complies with the emission standards.

(b) If any test engine representing an engine family has emissions greater than each emission standard, that family will be deemed not in compliance with the emission standard(s).

(c) For each nonroad engine family, except Tier 1 engine families with rated power at or above 37 kW that do not employ aftertreatment, a deterioration factor must be determined and applied.

(1) The applicable exhaust emission standards (or family emission limits, as appropriate) for nonroad compression-ignition engines apply to the emissions of engines for their useful life.

(2) [Reserved]

(3)(i) This paragraph (c)(3) describes the procedure for determining compliance of an engine with emission standards (or family emission limits, as appropriate), based on deterioration factors supplied by the manufacturer. The NMHC + NO<sub>x</sub> deterioration factors shall be established based on the sum

of the pollutants, except as provided in paragraph (c)(3)(iv) of this section. When establishing deterioration factors for NMHC + NO<sub>x</sub>, a negative deterioration (emissions decrease from the official emissions test result) for one pollutant may not offset deterioration of the other pollutant.

(ii) Separate emission deterioration factors, determined by the manufacturer according to the requirements of § 89.118, shall be provided in the certification application for each engine-system combination. Separate deterioration factors shall be established for each regulated pollutant, except that a combined NMHC + NO<sub>x</sub> deterioration factor shall be established for compression-ignition nonroad engines not utilizing aftertreatment technology. For smoke testing, separate deterioration factors shall also be established for the acceleration mode (designated as "A"), the lugging mode (designated as "B"), and peak opacity (designated as "C").

(iii) *Compression-ignition nonroad engines not utilizing aftertreatment technology (e.g., particulate traps).* For CO, NMHC + NO<sub>x</sub>, and particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by addition of the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph (c)(3)(iii).

(iv) *Compression-ignition nonroad engines utilizing aftertreatment technology (e.g., particulate traps).* For CO, NMHC + NO<sub>x</sub>, and particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. Separate NMHC and NO<sub>x</sub> deterioration factors shall be applied to the results for these pollutants prior to combining the results. If the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph (c)(3)(iv).

(v) For acceleration smoke ("A"), lugging smoke ("B"), and peak opacity ("C"), the official exhaust emission results for each emission data engine at

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the selected test point shall be adjusted by the addition of the appropriate deterioration factor. However if the deterioration supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph (c)(3)(v).

(vi) The emission values to compare with the standards (or family emission limits, as appropriate) shall be the adjusted emission values of paragraphs (c)(3)(iii) through (v) of this section, rounded to the same number of significant figures as contained in the applicable standard in accordance with ASTM E29-93a, for each emission data engine. This procedure has been incorporated by reference at § 89.6.

(4) Every test engine of an engine family must comply with all applicable standards (or family emission limits, as appropriate), as determined in paragraph (c)(3)(vi) of this section, before any engine in that family will be certified.

(d) For engine families included in the averaging, banking, and trading program, the families' emission limits (FELs) are used in lieu of the applicable federal emission standard.

(e) For the purposes of setting an NMHC + NO<sub>x</sub> certification level or FEL, one of the following options shall be used for the determination of NMHC for an engine family. The manufacturer must declare which option is used in its application for certification of that engine family.

(1) The manufacturer may assume that up to two percent of the measured THC is methane (NMHC = 0.98 × THC).

(2) The manufacturer may measure NMHC emissions using a method approved by the Administrator prior to the start of testing. This option allows the determination of NMHC emissions by subtracting measured methane emissions from measured THC emissions.

[59 FR 31335, June 17, 1994. Redesignated and amended at 63 FR 56995, 57004, Oct. 23, 1998]

## § 89.121 Certificate of conformity effective dates.

The certificate of conformity is valid from the date of issuance by EPA until

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31 December of the model year or calendar year for which it is issued.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998]

## § 89.122 Certification.

(a) If, after a review of the manufacturer's application, request for certificate, information obtained from any inspection, and such other information as the Administrator may require, the Administrator determines that the application is complete and that the engine family meets the requirements of this part and the Clean Air Act, the Administrator shall issue a certificate of conformity.

(b) If, after a review of the information described in paragraph (a) of this section, the Administrator determines that the requirements of this part and the Clean Air Act have not been met, the Administrator will deny certification. The Administrator must give a written explanation when certification is denied. The manufacturer may request a hearing on a denial.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998]

## § 89.123 Amending the application and certificate of conformity.

(a) The manufacturer of nonroad compression-ignition engines must notify the Administrator when changes to information required to be described in the application for certification are to be made to a product line covered by a certificate of conformity. This notification must include a request to amend the application or the existing certificate of conformity. Except as provided in paragraph (e) of this section, the manufacturer shall not make said changes or produce said engines prior to receiving approval from EPA.

(b) A manufacturer's request to amend the application or the existing certificate of conformity shall include the following information:

(1) A full description of the change to be made in production or of the engine to be added;

(2) Engineering evaluations or data showing that engines as modified or added will comply with all applicable emission standards; and