

**§ 86.417-78 Approval of application for certification.**

(a) After a review of the application for certification and any other information which the Administrator may require, the Administrator may approve the application and select a test fleet as appropriate.

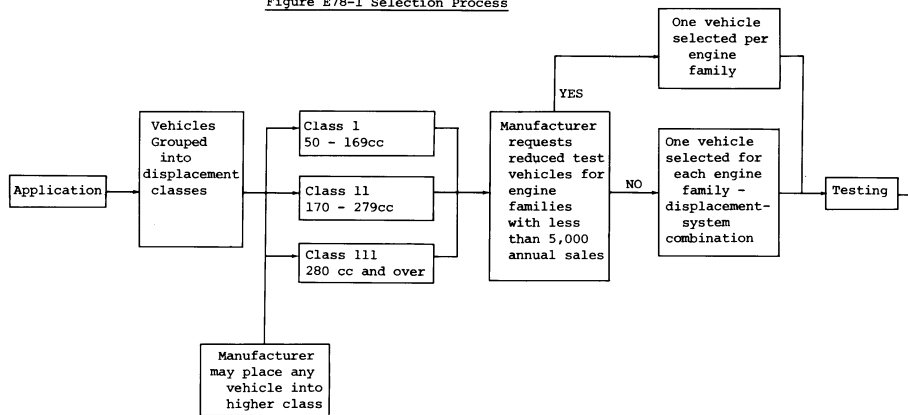
(b) The Administrator may disapprove in whole or in part an application for certification for reasons including incompleteness, inaccuracy, inappropriate proposed distance accumulation procedures, maintenance, test equipment, label content or location,

fuel or lubricant, and incorporation of defeat devices in vehicles described by the application. Where any part of an application is rejected the Administrator shall notify the manufacturer in writing and set forth the reasons for such rejection. The manufacturer may request a hearing under § 86.443.

**§ 86.418-78 Test fleet selection.**

(a) Test fleet selection and requirements on test vehicles are found in §§ 86.419 to 86.423. This selection process is also graphically depicted in Figure E78-1.

Figure E78-1 Selection Process



(b) [Reserved]

**§ 86.419-78 Engine displacement, motorcycle classes.**

(a)(1) Engine displacement shall be calculated using nominal engine values and rounded to the nearest whole cubic centimetre, in accordance with ASTM E 29-67.

(2) For rotary engines, displacement means the maximum volume of a combustion chamber between two rotor tip seals minus the minimum volume of that combustion chamber between those two rotor tip seals times three times the number of rotors.

$$cc = (\text{max. chamber volume} - \text{min. chamber volume}) \times 3 \times \text{no. of rotors}$$

(b) Motorcycles will be divided into classes based on engine displacement.

(1) Class I—50 to 169 cc (3.1 to 10.4 cu. in.).

(2) Class II—170 to 279 cc (10.4 to 17.1 cu. in.).

(3) Class III—280 cc and over (17.1 cu. in. and over).

(c) At the manufacturer's option, a vehicle described in an application for certification may be placed in a higher class (larger displacement). All procedures for the higher class must then be complied with, ion standards will be determined on the basis of engine displacement.

**§ 86.419-2006 Engine displacement, motorcycle classes.**

(a)(1) Engine displacement shall be calculated using nominal engine values and rounded to the nearest whole cubic centimeter, in accordance with ASTM

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E 29-93a (incorporated by reference in § 86.1).

(2) For rotary engines, displacement means the maximum volume of a combustion chamber between two rotor tip seals, minus the minimum volume of the combustion chamber between those two rotor tip seals, times three times the number of rotors, according to the following formula:

cc = (max. chamber volume - min. chamber volume) × 3 × no. of rotors

(b) Motorcycles will be divided into classes based on engine displacement.

(1) Class I—0 to 169 cc (0 to 10.4 cu. in.).

(i) Class I motorcycles with engine displacement less than 50 cc comprise the Class I-A subclass.

(ii) Class I motorcycles with engine displacement 50 cc or higher comprise the Class I-B subclass.

(2) Class II—170 to 279 cc (10.4 to 17.1 cu. in.).

(3) Class III—280 cc and over (17.1 cu. in. and over).

(c) At the manufacturer's option, a vehicle described in an application for certification may be placed in a higher class (larger displacement). All procedures for the higher class must then be complied with and compliance with emission standards will be determined on the basis of engine displacement.

[69 FR 2437, Jan. 15, 2004]

§ 86.420-78 Engine families.

(a) The vehicles covered in the application will be divided into groupings whose engines are expected to have similar emission characteristics throughout their useful life. Each group of engines with similar emission characteristics shall be defined as a separate engine family.

(b) Reciprocating families. To be classed in the same engine family, reciprocating engines must be identical in all of the following applicable respects:

- (1) The combustion cycle.
(2) The cooling mechanism.
(3) The cylinder configuration (inline, vee, opposed, bore spacings, etc.).
(4) The number of cylinders.
(5) The engine displacement class, § 86.419.

- (6) The method of air aspiration.
(7) The number of catalytic converters, location, volume, and composition.
(8) The thermal reactor characteristics.
(9) The number of carburetors.
(10) The prechamber characteristics.

(c) At the manufacturer's option, reciprocating engines identical in all the respects listed in paragraph (b) of this section may be further divided into different engine families if the Administrator determines that they may be expected to have different emission characteristics. This determination will be based upon a consideration of features such as:

- (1) The bore and stroke.
(2) The combustion chamber configuration.
(3) The intake and exhaust timing method of actuation (poppet valve, reed valve, rotary valve, etc.).
(4) The intake and exhaust valve or port sizes, as applicable.
(5) The fuel system.
(6) The exhaust system.

(d) Rotary families. To be classed in the same engine family, rotary combustion cycle engines must be identical in all of the following applicable respects:

- (1) The major axis of the epitrochoidal curve.
(2) The minor axis of the epitrochoidal curve.
(3) The generating radius of the epitrochoidal curve.
(4) The cooling mechanism.
(5) The number of rotors.
(6) The engine displacement class, § 86.419.

- (7) The method of air aspiration.
(8) The number of catalytic converters, location, volume and composition.
(9) The thermal reactor characteristics.
(10) The number of carburetors.
(11) The prechamber characteristics.

(e) At the manufacturer's option, rotary combustion cycle engines identical in all the respects listed in paragraph (d) of this section, may be further divided into different engine families if the Administrator determines that they may be expected to have different emission characteristics. This