weight information in footnote 4 to the table in § 86.129–94(a), none of the other footnotes to the tabular listing apply to emission tests utilizing an approved single roll dynamometer or equivalent dynamometer configuration. All light-duty vehicles and light light-duty trucks are to be tested at the inertia weight class corresponding to their equivalent test weight.

(i) For light-duty vehicles and light light-duty trucks, test weight basis is loaded vehicle weight, which is the vehicle weight plus 300 pounds.

(ii) For heavy light-duty trucks, the definition of test weight basis varies depending on the SFTP test element being tested.

(A) For the aggressive driving cycle (US06), the test weight basis is the vehicle curb weight plus 300 pounds.

(B) For the FTP and the air conditioning (SC03) element of the SFTP, the test weight is the average of the curb weight plus GVWR.

(C) Regardless of other requirements in this section relating to the testing of HLDTs, for Tier 2 HLDTs, the test weight basis for FTP and SFTP testing (both US06 and SC03), if applicable, is the vehicle curb weight plus 300 pounds. For MDPVs certified to standards in bin 11 in Tables S04–1 and 2 in § 86.1811–04, the test weight basis must be adjusted loaded vehicle weight (ALVW) as defined in this part.

(2) Dynamic inertia load adjustments may be made to the test inertia weight during specific US06 acceleration events when wide open throttle operation is equal to or greater than eight (8) seconds (see § 86.108–00). The dynamic inertia weight adjustment procedure must be approved in advance of conducting official US06 testing. The Administrator will perform confirmatory US06 testing using the same dynamometer inertia adjustment procedures as the manufacturer if:

(i) The manufacturer submits a request to the Administrator; and

(ii) The manufacturer provides the dynamometer hardware and/or software necessary for these adjustments to the Administrator.

[61 FR 54892, Oct. 22, 1996, as amended at 65 FR 6850, Feb. 10, 2000]

EDITORIAL NOTE: At 64 FR 23921, May 4, 1999, § 86.129–00 was amended by revising foot-note 4 to the table in paragraph (a) and by revising paragraph (d)(1)(iv). Since both paragraphs (a) and (d) of § 86.129–00 are reserved and contain no text, these amendments could not be made. For the convenience of the user, the revised text is set forth as follows:

§ 86.129–00 Road load power, test weight, and inertia weight class determination.

*   *   *   *   *

(a) * * *

*   *   *   *   *

[4] For model year 1994 and later heavy light-duty trucks not subject to the Tier 0 standards of § 86.094–9, test weight basis shall be adjusted loaded vehicle weight, as defined in § 86.094–2 or 86.1803–01 as applicable. For all other vehicles, test weight basis shall be loaded vehicle weight, as defined in § 86.082–2 or 86.1803–01 as applicable.

*   *   *   *   *

(d) * * *
(1) * * *
(iv) Small-volume manufacturers, as defined in § 86.094–14(b)(1) or § 86.1838–01 as applicable, may use an alternate method for generating fuel temperature profiles, subject to the approval of the Administrator.

*   *   *   *   *

§ 86.129–80 Road load power, test weight, and inertia weight class determination.

(a) Flywheels, electrical or other means of simulating test weight as shown in the following table shall be used. If the equivalent test weight specified is not available on the dynamometer being used, the next higher equivalent test weight (not to exceed 250 pounds) available shall be used.

Road load power at 50 mi/h—light-duty trucks [1][2][3]	Loaded vehicle weight (pounds)	Equivalent test weight (pounds)	Inertia weight class (pounds)
....	Up to 1,062	1,000	1,000
....	1,063 to 1,187 ..	1,125	1,000
....	1,188 to 1,312 ..	1,250	1,250
....	1,313 to 1,437 ..	1,375	1,250
....	1,438 to 1,562 ..	1,500	1,500
....	1,563 to 1,687 ..	1,625	1,500
....	1,688 to 1,812 ..	1,750	1,750
....	1,813 to 1,937 ..	1,875	1,750
....	1,938 to 2,062 ..	2,000	2,000
....	2,063 to 2,187 ..	2,125	2,000
....	2,188 to 2,312 ..	2,250	2,250
....	2,313 to 2,437 ..	2,375	2,250
....	2,438 to 2,562 ..	2,500	2,500

Road load power at 50 mi/h—light-duty trucks [1][2][3]	Loaded vehicle weight (pounds)	Equiva-lent test weight (pounds)	Inertia weight class (pounds)
....	2,563 to 2,687 ..	2,625	2,500
....	2,688 to 2,812 ..	2,750	2,750
....	2,813 to 2,937 ..	2,875	2,750
....	2,938 to 3,062 ..	3,000	3,000
....	3,063 to 3,187 ..	3,125	3,000
....	3,188 to 3,312 ..	3,250	3,000
....	3,313 to 3,437 ..	3,375	3,500
....	3,438 to 3,562 ..	3,500	3,500
....	3,563 to 3,687 ..	3,625	3,500
....	3,688 to 3,812 ..	3,750	3,500
....	3,813 to 3,937 ..	3,875	4,000
....	3,938 to 4,125 ..	4,000	4,000
....	4,126 to 4,375 ..	4,250	4,000
....	4,376 to 4,625 ..	4,500	4,500
....	4,626 to 4,875 ..	4,750	4,500
....	4,876 to 5,125 ..	5,000	5,000
....	5,126 to 5,375 ..	5,250	5,000
....	5,376 to 5,750 ..	5,500	5,500
....	5,751 to 6,250 ..	[4]6,000	6,000
....	6,251 to 6,750 ..	6,500	6,500
....	6,751 to 7,250 ..	7,000	7,000
....	7,251 to 7,750 ..	7,500	7,500
....	7,751 to 8,250 ..	8,000	8,000
....	8,251 to 8,750 ..	8,500	8,500
....	8,751 to 9,250 ..	9,000	9,000
....	9,251 to 9,750 ..	9,500	9,500
....	9,751 to 10,000	10,000	10,000

[1] For all light-duty trucks except vans, and for heavy duty vehicles optionally certified as light-duty trucks, the road load power (horsepower) at 50 mi/h shall be 0.58 times B (defined below) rounded to the nearest ½ hp.

[2] For vans, the road load power at 50 mi/h (horsepower) shall be 0.50 times B (defined below) rounded to the nearest ½ hp.

[3] B is the basic vehicle frontal area (square foot) plus the additional frontal area (square foot) of mirrors and optional equipment exceeding 0.1 ft² which are anticipated to be sold on more than 33 pct of the car line. Frontal area measurements shall be computed to the nearest 10th of a square foot using a method approved in advanced by the administrator.

[4] Light-duty vehicles over 5,750 lb loaded vehicle weight shall be tested at a 5,500 lb equivalent test weight.

(b) *Power absorption unit adjustment—light-duty trucks.* (1) The power absorption unit shall be adjusted to reproduce road load power at 50 mph true speed. The indicated road load power setting shall take into account the dynamometer friction. The relationship between road load (absorbed) power and indicated road load power for a particular dynamometer shall be determined by the procedure outlined in § 86.118 or other suitable means.

(2) The road load power listed in the table above shall be used or the vehicle manufacturer may determine the road load power by an alternate procedure requested by the manufacturer and approved in advance by the Administrator.

(3) Where it is expected that more than 33 percent of a car line within an engine-system combination will be equipped with air conditioning per § 86.080–24(g)(2), the road load power

listed above or as determined in paragraph (b)(2) of this section shall be increased by 10 percent, up to a maximum increase of 1.4 horsepower, for testing all test vehicles representing that car line within that engine-system combination if those vehicles are intended to be offered with air conditioning in production. The above increase for air conditioning shall be added prior to rounding off as instructed by notes 2 and 3 of the table.

(c) *Power absorption unit adjustment—light-duty vehicles.* (1) The power absorption unit shall be adjusted to reproduce road load power at 50 mph true speed. The dynamometer power absorption shall take into account the dynamometer friction, as discussed in § 86.118.

(2) The dynamometer road load setting is determined from the equivalent test weight, the reference frontal area, the body shape, the vehicle protuberances, and the tire type by the following equations.

(i) For light-duty vehicles to be tested on a twin roll dynamometer.

$$Hp = aA + P + tW$$

where:

Hp = the dynamometer power absorber setting at 50 mph (horsepower).

A = the vehicle reference frontal area (ft²). The vehicle reference frontal area is defined as the area of the orthogonal projection of the vehicle; including tires and suspension components, but excluding vehicle protuberances, onto a plane perpendicular to both the longitudinal plane of the vehicle and the surface upon which the vehicle is positioned. Measurements of this area shall be computed to the nearest tenth of a square foot using a method approved in advance by the Administrator.

P = the protuberance power correction factor from table 1 of this paragraph (horsepower).

W = vehicle equivalent test weight (lbs) from the table in paragraph (a).

a = 0.43 for fastback-shaped vehicles; = 0.50 for all other light duty vehicles.

t = 0.0 for vehicles equipped with radial ply tires; = 3×10^{-4} for all other vehicles.

A vehicle is considered to have a fastback shape if the rearward projection of that portion of the rear surface (A_b) which slopes at an angle of less than 20 degrees from the horizontal is at least 25 percent as large as the vehicle reference frontal area. In addition, this

surface must be smooth, continuous, and free from any local transitions greater than four degrees. An example of a fastback shape is presented in Figure 1.
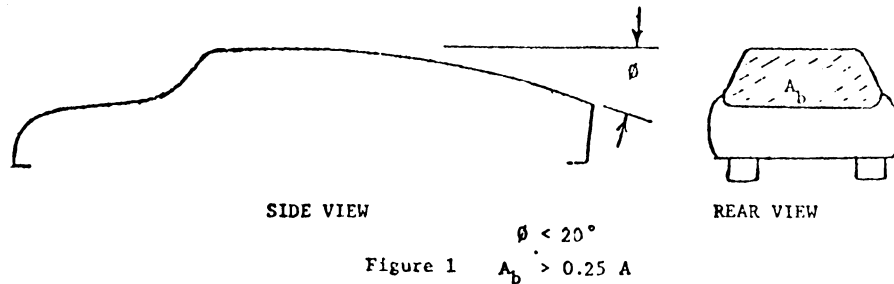

SIDE VIEW   REAR VIEW

Figure 1

$$\emptyset < 20°$$
$$A_b > 0.25\ A$$

TABLE I—PROTUBERANCE POWER, P. VERSUS TOTAL PROTUBERANCE FRONTAL AREA, A_p

A_p (square foot)	P (horse-power)
A_p<0.30	0.0
0.30 A_p<0.60	.40
0.60 A_p<0.90	.70
0.90 A_p<1.20	1.00
1.20 A_p<1.50	1.30
1.50 A_p<1.80	1.60
1.80 A_p<2.10	1.90
2.10 A_p<2.40	2.20
2.40 A_p<2.70	2.50
2.70 A_p<3.00	2.80
3.00 A_p	3.10

The protuberance frontal area, A_p, is defined in a manner analogous to the definition of the vehicle reference frontal area, i.e., the total area of the orthogonal projections of the vehicle mirrors, hood ornaments, roof racks, and other protuberance onto a plane(s) perpendicular to both the longitudinal plane of the vehicle and the surface upon which the vehicle is positioned. A protuberance is defined as any fixture attached to the vehicle protruding more than 1 inch from the vehicle surface and having a projected area greater than 0.01 ft² with the area calculated by a method approved in advance by the Administrator. Included in the total protuberance frontal area shall be all fixtures which occur as standard equipment. The area of any optional equipment shall also be included if it is expected that more than 33 percent of the car line sold will be equipped with this option.

(ii) The dynamometer power absorber setting for light-duty vehicles shall be rounded to the nearest 0.1 horsepower.

(iii) For light-duty vehicles to be tested on a single, large roll dynamometer.

$$Hp = aA + P + (5.0 \times 10^{-4} + 0.33t)\,W$$

All symbols in the above equation are defined in paragraph (c)(2)(i) of this section. The rounding criteria of paragraph (c)(2)(i) also apply to this paragraph.

(3) The road load power calculated above shall be used or the vehicle manufacturer may determine the road load power by an alternate procedure requested by the manufacturer and approved in advance by the Administrator.

(4) Where it is expected that more than 33 percent of a car line within an engine-system combination will be equipped with air conditioning, per §86.080–24(g)(2), the road load power as determined in paragraph (c) (2) or (3) of this section shall be increased by 10 percent up to a maximum increment of 1.4 horsepower, for testing all test vehicles of that car line within that engine-system combination if those vehicles are intended to be offered with air conditioning in production. This power increment shall be added to the indicated dynamometer power absorption setting prior to rounding off this value.

[42 FR 45653, Sept. 12, 1977, as amended at 43 FR 52921, Nov. 14, 1978]

§86.129–94 Road load power, test weight, inertia weight class determination, and fuel temperature profile.

Section 86.129–94 includes text that specifies requirements that differ from §86.129–80. Where a paragraph in §86.129–80 is identical and applicable to §86.129–94, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For

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