

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J992

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Submitted for recognition as an American National Standard

Brake System Performance Requirements—Truck, Bus, and Combination of Vehicles

1. **Scope**—This SAE Recommended Practice presents performance requirements for the brake systems of motor vehicles intended for roadway use and falling into the following classifications:

Light trucks and buses: 6001-10 000 lb (2700-4500 kg) gvw

Truck and bus: Over 10 000 lb (4500 kg) gvw

Combination of vehicles [towing vehicle over 10 000 lb (4500 kg) gvw]

Acceptable performance requirements are based on data obtained from applicable sections of SAE J786a (March, 1978).

- 1.1 **Introduction**—The performance requirements in this SAE Recommended Practice represent the accumulation of the best information available from investigation of the brake system performance of new motor vehicles designed for roadway use.

- 1.2 **Purpose**—The purpose of this recommended practice is to establish the minimum brake system performance requirements with regard to:

- 1.2.1 STOPPING ABILITY—of cold brakes, as affected by vehicle speed.
- 1.2.2 STOPPING ABILITY—of hot brakes, as affected by vehicle speed and duty cycle.
- 1.2.3 PEDAL FORCE (AIR PRESSURE) REQUIREMENTS—Maximum allowable.
- 1.2.4 BRAKE STABILITY
- 1.2.5 STOPPING ABILITY AND RECOVERY OF WET BRAKES
- 1.2.6 STOPPING ABILITY OF EMERGENCY BRAKE SYSTEM
- 1.2.7 BRAKE EFFECTIVENESS DISTRIBUTION FOR VEHICLES IN COMBINATION

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2. References

2.1 Applicable Publication—The following publication forms a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001

SAE J786a—Brake System Road Test Code—Truck, Bus, and Combination of Vehicles

3. Instrumentation—See SAE J786a (March, 1978), Section 3.

4. Test Preparation—See SAE J786a (March, 1978), Section 4, except that drum, rotor, and lining measurements to establish wear are optional.

5. Test Procedure—See SAE J786a (March, 1978), Section 5.

6. Acceptable Performance Requirements

6.1 Preburnish Check—See SAE J786a (March, 1978), paragraph 5.3.

At some time during this test, the vehicle must attain a 14 ft/s^2 (4.3 m/s^2) deceleration at less than 200 lb (890 N) pedal force.

6.2 Effectiveness Tests—See SAE J786a (March, 1978), paragraphs 5.6 and 5.12.

The maximum stopping distances and minimum decelerations listed in Table 1 shall be attained at a maximum pedal force of 200 lb (890 N), or at an air pressure less than the maximum value specified by the vehicle manufacturer, or less in each of the tests conducted under paragraphs 5.6 and 5.12, except for the optional hot curves. In all stops, the vehicle must be maintained in a 12 ft (3.7 m) roadway lane.

TABLE 1—EFFECTIVENESS TEST

Vehicle Classification	Max Stopping Distance from 20 mph (32 km/h), ft (m)	Min Deceleration, ft/s^2 (m/s^2) From 50 mph (80 km/h) ⁽¹⁾	Min Deceleration, ft/s^2 (m/s^2) From 60 mph (97 km/h) ⁽¹⁾
Light trucks and buses [6001–10 000 lb (2700–4500 kg) gvwt]	25 (7.6)	—	15 (4.6)
Truck and bus [over 10 000 lb (4500 kg) gvwt]	35 (10.7)	12 (3.7)	—
Combination of vehicles	45 (13.7)	12 (3.7)	—

1. Or maximum attainable under 50 mph (80 km/h).

6.3 Emergency System Effectiveness Test—See SAE J786a (March, 1978), paragraph 5.7.

The maximum stopping distances and minimum decelerations listed in Table 2 shall be attained at a maximum pedal force of 200 lb (890 N), or at an air pressure less than the maximum value specified by the vehicle manufacturer, maintaining the vehicle in a 12 ft (3.7 m) roadway lane.