

In-Service Brake Performance Test Procedure — Vehicles Over 4500 kg (10 000 lb) —SAE J1250 FEB80

SAE Recommended Practice
Approved February 1980

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**IN-SERVICE BRAKE PERFORMANCE TEST
PROCEDURE—VEHICLES OVER 4500 kg
(10 000 lb)—SAE J1250 FEB80**

SAE Recommended Practice

Report of the Brake Committee, approved February 1980.

1. Scope—This SAE Recommended Practice establishes a uniform practical series of sub-procedures for level road testing of the brake performance of vehicles with gross vehicle weight ratings over 4500 kg (10 000 lb).

2. Purpose—The purpose of this practice is to establish a uniform method for use by operators and law enforcement agencies, to evaluate the condition of the brake systems of vehicles with GVWRs and GCWRs over 4500 kg (10 000 lb) under any condition of loading. This practice sets forth several sub-procedures that can be selected as test conditions, equipment, and purposes of testing indicate.

3. General—This practice is written as a quick assessment procedure to uncover the most common or gross performance inadequacies in the braking system; however, not all performance and maintenance problems may be uncovered. Good vehicle maintenance and preventative maintenance programs are of utmost importance for vehicle safety. Because of the maximum speed limitations of the typical inspection site and the safety of the tester, speed and temperature fade problems, and worn components may not be uncovered.

4. Equipment and Location

4.1 Instrumentation and Equipment—The tests shall be run using a bumper or frame clamping fifth wheel capable of displaying vehicle speed and distance to stop triggered by initial brake control movement or force sensor.

4.2 Test Area—The test location shall be substantially straight, level (not to exceed 1% grade), dry, smooth, hard surface roadway of portland cement, concrete, or equivalent, that is free from loose material and approximately 60 m (200 ft) in length with an access adequate to permit a truck to enter at 32 km/h (20 mph). The test surface shall be marked with a 3.7 m (12 ft) wide lane by marking the test surface or using pylons.

It is recommended that the desired stopping distance be identified by surface markings or pylons as a guide for the driver.

5. System Leak Check—The following checks are to be made after the engine has been run a sufficient time to build up normal air pressure, boost pressure, or boost vacuum (1 min minimum).

5.1 Air and Air Assist Hydraulic Systems

5.1.1 With engine off and brakes unapplied, note for sounds or other evidence of air leakage.

5.1.2 With engine off, make a full pressure application and hold for 1 min. Record the drop in reservoir pressure(s) after initial application, and note any sound or other evidence of leakage.

5.2 Straight Hydraulic and Power Assisted (Vacuum or Hydraulic) Systems—Turn engine off and depress the brake pedal with a light pressure for 10 s and then press hard for 10 s. Note any change in pedal height while being held and sound or evidence of leakage.

6. Stopping Ability Test

6.1 Pretest Check Out—The tester shall examine briefly the vehicle, the load and its retention for conditions that might prove unsafe during the test such as load shift, poor steering, and brake pedal response. If the vehicle and/or load is judged unsafe, the test shall be delayed until the condition is corrected.

6.2 Procedure—The driver shall enter the test area as near as possible to 32 km/h (20 mph) and maintain the speed until the prescribed location, at which time he shall make a service brake application, attempting to

bring the vehicle to a complete stop within a 3.7 m (12 ft) wide lane, using normal driving procedure. The initial speed and the distance vehicle travels from initial brake pedal movement to stop shall be noted and recorded. Record any brake pull or instability, and whether or not stop was made within 3.7 m (12 ft) wide lane.

7. Parking Brake System Check

7.1 Procedure—From 8 km/h (5 mph) apply the parking brake system control. Record distance to stop.

8. Report Form—General Data and Report Form, Fig. 1.

TEST DATA SHEET
IN-SERVICE BRAKE PERFORMANCE TEST
(FOR VEHICLES OVER 4500 kg (10 000 lb))

Date _____
Time _____

Vehicle Description _____
Odometer Reading _____

Owner/Operator _____
Test Location _____
Equipment Used _____

SYSTEM LEAK CHECK - AIR OR AIR BOOST HYDRAULIC

With engine off and brake unapplied — note for evidence of air leakage. No leaks noted
Leaks noted

With engine off make full application for 1 min.

A. Initial Pressure _____
B. Final Pressure _____
C. Pressure Drop (A-B) _____

SYSTEM LEAK CHECK - HYDRAULIC AND POWER ASSIST HYDRAULIC

With engine off, press pedal — note movement.
Pedal Firm Pedal Moved Towards Floor

TEST SAFETY CHECK

Briefly check vehicle and load for conditions unsafe for testing.
Vehicle and Load OK _____, Unsafe _____, If unsafe, describe _____

STOP TEST

Make 32 km/h (20 mph) complete stop.

Actual Initial Speed _____, Stop Distance _____
Stayed Within 3.7 m (12 ft) Lane Yes No
Vehicle pull problem Yes No
If yes, describe _____

PARKING BRAKE SYSTEM CHECK

Make 8 km/h (5 mph) stop by actuating the parking brake control.

Actual Initial Speed _____, Stop Distance _____
Tester _____

FIG. 1