

Brake testing environments

INFORMATION SHEET

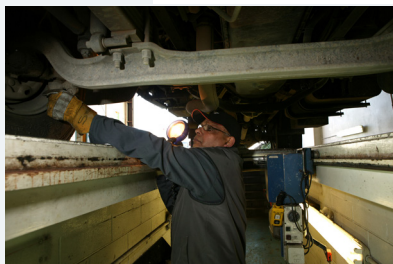
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This information sheet outlines the reasons why the results of a roller brake test may vary from testing station to the roadside.

CoF TEST

Work carried out in a controlled environment



Axles pulled down to give 60% load



Brake roller machine used in accordance with protocol



PASS Well serviced vehicle
 FAIL

ROADSIDE INSPECTION

Road environment - wet/hot/dusty



Nature of work - city/longhaul/off-road



Vehicle load - empty/partial load/fully laden



Brake roller machine used in accordance with protocol



PASS Well serviced vehicle
 FAIL



Brake testing at CoF and the roadside

Why results may differ

From time to time, heavy vehicle operators may find that the results of a roller brake test on a particular vehicle may vary from testing station to the roadside. This information sheet provides some information on why this may be the case.

There are several methods to test brake performance, but history and international experience shows the roller brake test is the most effective and efficient method to check brake performance. In particular, this test enables the identification of faults in the brakes of individual wheels without the time-consuming need to remove wheels, brake drums and examining brake components.

Roller brake machine design and performance is governed and calibrated according to international standards, regardless of whether the machine is designed for use in the field as a portable or mobile tester or for use in an approved vehicle testing facility.

International testing has shown that there is a very high correlation in the test results of vehicle brakes tested in both environments. However, results are not exactly the same every time. The two main pass/fail factors of a brake test, whether on the road or in the testing station, are brake force and imbalance. The rotational effects of brake components and wheels, along with tyre displacement, can mean results of brake tests can differ.

Overall, if a vehicle is well maintained and the brakes are sufficiently well adjusted, the vehicle should have no problem passing either test comfortably.

A key factor is how well a vehicle passed its test in a testing station. If a vehicle passes only marginally, then there is every chance it will fail at a subsequent roadside test, either due to imbalance or lack of adequate total brake force on one or more axles.

AT THE TESTING STATION

Passing at 50% brake force on any axle is totally inadequate for long-term brake performance reliability and provides no margin for error for expected normal wear or variation in subsequent brake testing. Based on Economic Commission for Europe (ECE) testing for ECE -13 approval, the manufacturer designs the brakes to achieve upwards of 0.8g so it should be possible to adjust and service the brakes to provide better than a marginal pass of 0.5g at the testing station.

ON THE ROAD

To allow for the different testing environment between a testing station and at the roadside, when testing at the roadside, the New Zealand Police Commercial Investigation Unit (CVIU) apply a slightly less stringent pass/ fail criteria and allow some weight transfer. To further ensure parity between the test at the roadside and at the testing station, the CVIU tend to select vehicles that have a reasonable load.

IN SUMMARY

Maintenance should focus on achieving the best pass values for brake force, not the minimum pass performance values. How well a vehicle performs at a roadside test is more about the maintenance practices employed by the owner or operator of the vehicle, not on the environment where the test takes place .



For more information: <http://www.truckbrakesafety.com/background.htm>