

NHVR Roller Brake testing changes from

June 11 2016

NHVR Roller Brake testing changes from June 11 2016 as interpreted by Hartex Engineering

Changes to the way heavy vehicles brakes are tested and results evaluated change from June 11 2016. The National Heavy Vehicle Regulator (NHVR) has released a new test standard and procedure for implementation by the various state based jurisdictions

The new NHVR Heavy Vehicle Inspection Manual version 2.1 can be downloaded in full from:

<https://www.nhvr.gov.au/files/201602-0269-national-heavy-vehicle-inspection-manual.pdf>

We highly recommend that you download and review the document in its entirety as there are significant changes to test standards that will impact fleet availability from June 11.

Our summary review below only pertains to those changes that affect the use of the ROLLER BRAKE TESTER.

Major points:

- Brake efficiency on service brake increases from a minimum of 30% to a minimum of 45%
- Imbalance between left and right remains at 30%
- There is now different permissible brake drag depending on if the axle is a drive axle or driven axle.

The following is a excerpt from the NHVR Regulation

2.13 Brake testing with a roller brake tester

This section should be read in conjunction with the equipment manufacturer's instructions.

Using a roller brake tester, check the retardation forces on each wheel. Release all brakes, place transmission in neutral (not 'park' for automatic transmission) and slowly apply the service brake until maximum force is attained, or wheel slip occurs.

Reasons for rejection

- a) There is more than 30% difference in the brake force between the wheels on the same axle
- b) The minimum service brake efficiency is less than the requirements specified in Table 2.3
- c) With all brakes released, the brake drag at any axle exceeds the performance requirement specified in
- d) Any parking brake assembly that when applied does not give a reading, or the vehicle does not lift out of the rollers.

Note: For park brakes that operate independently of the service brakes, care should be taken when performing roller brake testing. When testing using a brake roller is not possible, the parking brake should be tested in accordance with the manufacturer's testing procedures.

Table 2.3 Brake force

Type of vehicle	Minimum peak (kN/tonne of GVM)	Average (kN/tonne of GVM)
GVM exceeding 4.5 tonnes	4.5	3.0

Note: The minimum brake efficiency (kN/tonne) is determined by:

Step 1. Adding the brake force for each axle

Step 2. Dividing Step 1 by the vehicle mass.

Note: On some vehicles the brake force limit might not be reached as the vehicle will be lifted out of the rollers or lock the wheels. Similarly, it might not be reached if a load proportioning valve is fitted to the axle group. In both cases it is considered a pass if the brake balance is within the specified limit.

Table 2.4 Maximum brake drag

Axle type	kN (maximum)
Drive axle	1.0
Other axle	0.5

2.14 Check trailer brakes and breakaway protection

The examiner should seek the assistance of another person in order to make a thorough check of the breakaway protection.

Reasons for rejection

- a) A truck trailer interconnecting flexible hose and coupling is not properly mated or secured
- b) The trailer brakes are not capable of being applied and released from the normal driving position
- c) For a towing vehicle that is configured to tow a trailer with air or vacuum assisted brakes, there is no visible or audible warning device to alert the driver of the towing vehicle, while the driver is in a normal driving position, of a lack of air or vacuum
- d) In an air operated brake system when any trailer hose coupling or connection is disconnected to simulate a breakaway situation, the rate of loss in air pressure in the towing vehicle's service brake system is more than 15kPa per minute after stabilisation.

Note: If an invasive inspection of brake components is necessary, it should be carried out in accordance with the procedure in Australian Standard AS 3617 Parameters for the machining and reconditioning of brake drums and discs.

2.15 Road testing of service brakes

Use a suitable level area with a hard level surface that is free from gravel or loose material and is at least 350 metres in length for testing of heavy vehicles. Drive the vehicle to 35km/h then put the transmission into neutral; automatic transmission vehicles may remain in gear. With both hands on the steering wheel bring the vehicle to a halt as rapidly as possible in a safe manner with one sustained and smooth application of the service brakes.

Reasons for rejection

- a) The application of the brakes causes the vehicle to swerve from a straight line path
- b) For vehicles built after 1930, the service braking system fails to bring the vehicle to a stop within the distance specified in Table 2.5.

Table 2.5 Service brake stopping distance

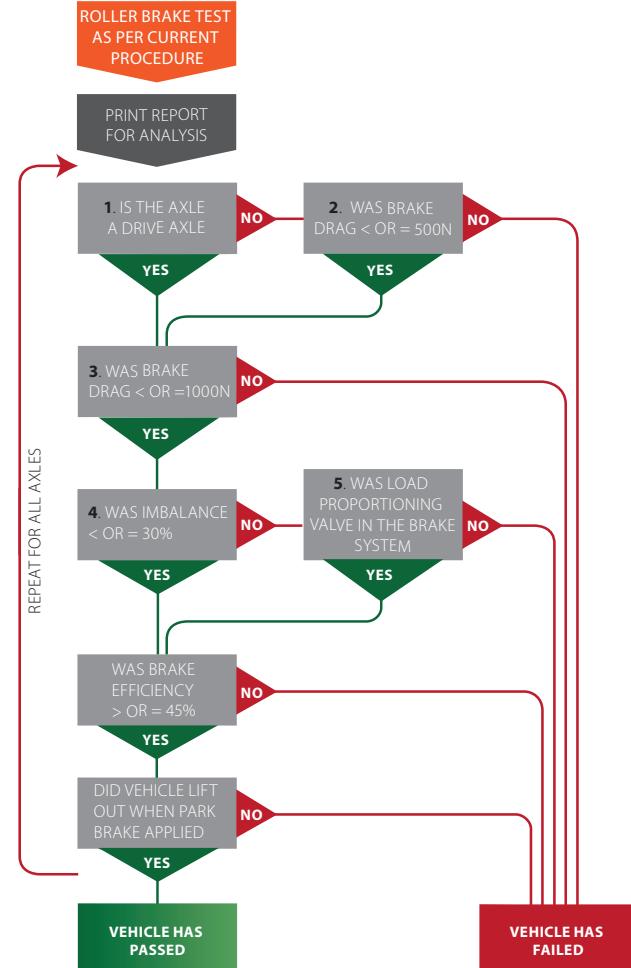
Type of vehicle	Distance
GVM exceeding 4.5 tonnes	16.5 metres

Note: The maximum stopping distance in this table is intended to cover a wide range of vehicles including some older vehicles with older braking systems. If a modern vehicle is found to only just comply with the prescribed values then the owner should be informed that the brakes are likely to be in need of maintenance.

For vehicles built before 1930, no service brake performance requirements apply, but the on-road brake test should be conducted to assist in determining whether a brake maintenance problem exists. Such problems should be followed up by visual inspection of the brake components.

A flow chart of the new procedure for roller brake testing is outlined below. For those using Hartex's Saxon machines, a software update that automates decision boxes 1 through to 5 is available for \$2500+GST*. For those clients using our Maha, VTEQ, Ryme, VIS machines this process will need to be done manually by the operator and care should be made when evaluating the brake force results with respect to permissible brake drag depending on if the axle is driven or a drive axle.

ROLLER BRAKE TEST PROCEDURE FROM JUNE 11 2016
AS INTERPRETED BY HARTEX ENGINEERING



*Sydney Metro only.

Machine must be minimum Software version - Saxon Data Centre