Brakes

Brakes 8-1 Service brake and parking brake

Summary of legislation

Applicable legislation

- Land Transport Rule: Light-Vehicle Brakes 2002

Mandatory equipment

Service brake

1. Vehicles must have a service brake that acts on each wheel, except in the following cases:
   a) A vehicle first registered anywhere before 1 February 1977 may have a service brake that is designed to act on fewer than four wheels
   b) A vehicle of class LE first registered anywhere before 1 February 1977 may have a service brake that is designed to act on fewer than three wheels.
2. A vehicle of class MA, MB, MC, MD1, MD2 or NA first registered in New Zealand from 1 November 1990 that does not have a dual-circuit service brake must have a parking brake that is capable of bringing the vehicle to a controlled stop if the service brake fails.

Parking brake

3. A vehicle of class MA, MB, MC, MD1, MD2 or NA must have a parking brake that:
   a) acts on at least one complete axle, or
   b) if the vehicle has dual wheels on an axle, acts on that axle.
4. A vehicle of class MA, MB, MC, MD1, MD2 or NA first registered in New Zealand from 1 November 1990 without dual-circuit service brakes must have a parking brake that is capable of bringing the vehicle to a controlled stop if the service brake fails.

Permitted equipment

5. A vehicle of class MA, MB, MC, MD1, MD2 or NA may be fitted with a warning system that is part of, or associated with, the use of a brake component or system.

Condition

6. A brake must be in good condition.
7. The brake friction surfaces on a vehicle of class MA, MB, MC, MD1, MD2 or NA must be within safe tolerance of their state when manufactured, and must not be scored, weakened or damaged to the extent that the safety performance of the brake is adversely affected.

Performance

8. The service brake on a vehicle of class MA, MB, MC, MD1, MD2 or NA must be able to be applied in a controlled and progressive manner.
9. When the brake on a vehicle of class MA, MB, MC, MD1, MD2 or NA is applied:

Reasons for rejection

Mandatory equipment

Service brake (Note 1)

1. A vehicle does not have a service brake.
2. A vehicle first registered anywhere on or after 1 February 1977 does not have a service brake that is designed to act on each wheel.
3. A vehicle first registered anywhere before 1 February 1977 does not have a service brake that is designed to act on at least two wheels.
4. A vehicle of class LE first registered anywhere before 1 February 1977 does not have a service brake that is designed to act on at least one wheel.
5. A vehicle of class MA, MB, MC, MD1, MD2 or NA first registered in New Zealand after 1 November 1990 that does not have a dual-circuit service brake does not have a parking brake that is capable of bringing the vehicle to a controlled stop.

Parking brake (Note 1)

6. A vehicle does not have a parking brake.
7. A parking brake on a vehicle of class MA, MB, MC, MD1, MD2 or NA does not act on at least one complete axle.
8. A parking brake on a vehicle of class MA, MB, MC, MD1, MD2 or NA does not act on at least one axle that has dual wheels fitted.

Condition

Service brake

9. There is corrosion damage (**Note 1**) within 150 mm of a brake component mounting point.
10. The service brake pedal:
    a) is insecure, or
    b) is spongy (indicating air in the system), or
    c) creeps, or
    d) has a non-slip surface which has deteriorated to such an extent that the brake cannot be safely applied, or
    e) has excessive travel (pedal travel reduces after one or two applications).

Brakes 8-1 Service brake and parking brake (cont.)

a) the vehicle or its controls must not vibrate to the extent that control of the vehicle is adversely affected, and

b) the braking effort on each wheel must provide stable and efficient braking without adverse effect on the directional control of the vehicle, and

c) if the vehicle is equipped with an anti-lock braking system (ABS), the wheels must not lock, other than when the speed of the vehicle falls below the ABS activation parameters set by the vehicle manufacturer.

10. A brake warning system, if fitted on a vehicle of class MA, MB, MC, MD1, MD2 or NA, must function correctly (does not apply to a brake pad wear system).

Service brake

11. The service brake of a vehicle or vehicle combination that is operated on a hard, dry, level surface that is free of loose material and without assistance from the compression of the engine or other retarders must operate in the following manner:

a) A service brake that acts on each wheel must stop the vehicle within a distance of 7 m from a speed of 30 km/h (average brake efficiency of 50%).

b) A service brake that is designed to act on fewer than four wheels on a vehicle first registered anywhere before 1 February 1977 must stop the vehicle within a distance of 9 m from a speed of 30 km/h (average brake efficiency of 40%).

c) The service brake on a vehicle manufactured before 31 December 1918 not capable of exceeding 30 km/h must stop the vehicle within a distance of 20 m from a speed of 30 km/h (average brake efficiency of 18%).

Parking brake

12. A parking brake must:

a) stop the vehicle within 18 m from a speed of 30 km/h (average brake efficiency of 20%), or

b) hold the vehicle at rest on a slope of 1 in 5.

Modification

13. A modification to a brake or vehicle that affects the braking performance must be inspected and certified by an LVV Specialist Certifier, unless the vehicle:

a) is excluded from the requirement for LVV specialist certification (**Table 8-1-1**), and

b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Reasons for rejection

11. A **vacuum hose or pipe** (including connections) is:

a) insecure, or

b) leaking, or

c) damaged (cracked, chafed, twisted, stretched or corroded, eg showing signs of pitting or a noticeable decrease in the pipe's outside diameter).

12. The **brake vacuum servo** (brake booster) is:

a) not functioning fully or adequately, or

b) leaking, or

c) insecure.

13. The **brake vacuum pump**:

a) is not functioning fully or adequately, or

b) is insecure, or

c) drive belt is in poor condition.

14. The **brake master cylinder** is:

a) leaking brake fluid, or

b) insecure, or

c) excessively corroded.

15. A **brake valve** is:

a) not operating (eg has a seized load-sensing valve), or

b) leaking brake fluid, or

c) insecure, or

d) excessively corroded.

16. A **brake pipe** (including connections) is:

a) leaking brake fluid, or

b) insecure, or

c) deformed from its original shape, or

d) chafed, or

e) corrosion damaged, eg there are signs of pitting or a noticeable increase in the pipe's outside diameter.

Reasons for rejection

17. A **flexible hydraulic brake hose** (including connections):
    a) is leaking brake fluid, or
    b) is insecure, or
    c) bulges under pressure, or
    d) is twisted, stretched or chafed, or
    e) has external sheathing which is cracked to the extent that the reinforcing cords are exposed, or
    f) has metal connections which are excessively corroded, or
    g) has an end fitting which is not attached to the hose by means of swaging, machine crimping or a similar process (**Note 3**).
18. A **brake calliper**:
    a) shows visible signs of leaking, or
    b) is insecure.
19. A **brake backing plate** is:
    a) insecure, or
    b) severely corroded, or
    c) deformed from its original shape, or
    d) cracked, or
    e) contaminated by brake fluid, oil or grease.
20. A **wheel cylinder**:
    a) shows visible signs of leaking, or
    b) is insecure, or
    c) is seized.
21. An **ABS system component** is damaged, insecure or missing.
22. A **brake disc or drum** is:
    a) worn beyond manufacturer's specifications (where visible without removing vehicle components) (**Note 2**), or
    b) fractured or otherwise damaged (where visible without removing components) (**Note 2**), or
    c) contaminated by brake fluid, oil or grease.

Brakes 8-1 Service brake and parking brake (cont.)

Reasons for rejection

23. Brake friction material (where visible without removing vehicle components) (**Note 2**) is:
    a) worn below manufacturer's specifications, or
    b) separating from the brake pad backing plate or brake shoe, or
    c) contaminated by brake fluid, oil or grease.
24. A gap between the brake shoe and the brake drum exceeds manufacturer's specifications (where visible without removing vehicle components) (**Note 2**).
25. A service brake component shows signs of heating or welding after original manufacture.

Parking brake

26. The parking brake lever:
    a) has excessive travel, or
    b) is insecure, or
    c) mounting is damaged, corroded, distorted or fractured within 150 mm of the lever mounting, or
    d) mechanism or lever pivot bearing is worn or damaged so that the parking brake could be easily released by accident.
27. The parking brake cable:
    a) is knotted, frayed or excessively corroded, or
    b) has an auxiliary tensioner fitted, or
    c) has otherwise deteriorated so that it may affect the parking brake performance.
28. A parking brake actuating rod or guide:
    a) is excessively corroded, or
    b) is excessively worn, or
    c) has otherwise deteriorated so that it may affect the parking brake performance.
29. A parking brake component shows signs of heating or welding after original manufacture.

Reasons for rejection

Performance

Service brake

30. The service brake cannot be applied in a controlled and progressive manner.

31. When the service brake is applied and without assistance from the engine:

    a) the vehicle does not stop within 7 m from a speed of 30 km/h (average brake efficiency of 50%), or

    b) the vehicle does not stop within 9 m from a speed of 30 km/h (average brake efficiency of 40%) for a vehicle which has a service brake designed to act on fewer than four wheels, or

    c) the vehicle does not stop within 20 m from a speed of 30 km/h (average brake efficiency of 18%) for a vehicle which has been manufactured before 31 December 1918.

32. When the service brake is applied:

    a) the vehicle vibrates under braking to the extent that the control of the vehicle is adversely affected, or

    b) the brake fails to release immediately after the brake pedal has been released, or

    c) the directional control is affected (eg there is swerving to one side, or the brakes on one side apply more slowly than on the other side), or

    d) the brake balance, at any time during the brake application, varies by more than 20% between wheels on a common axle.

33. The ABS or brake system warning lamp or self-check system, if fitted, indicates a defect in the ABS or brake system (does not apply to brake pad wear warning systems).

Parking brake

34. When the parking brake is applied:

    a) the vehicle does not stop within 18 m from a speed of 30 km/h (average brake efficiency of 20%), or

    b) it does not hold the vehicle at rest on a slope of 1 in 5, or

Reasons for rejection

c) it does not hold all the wheels on a common axle stationary against attempts to drive the vehicle away.

35. The directional control of the vehicle is affected when the parking brake is being applied on a vehicle of class MA, MB, MC, MD1, MD2 or NA first registered in New Zealand on or after 1 November 1990 that does not have a dual-circuit service brake.

Modification (Note 1)

36. A modification affects a brake or braking performance, and:

a) is not excluded from the requirements for LVV specialist certification (**Table 8-1-1**), and

b) is missing proof of LVV specialist certification, ie:

i. the vehicle is not fitted with a valid low volume vehicle certification plate, or

ii. the operator is not able to produce a valid modification declaration or authority card.

Table 8-1-1. Modifications that do not require LVV certification

Fitting of or modification to:	LVV certification is not required provided that:
Aftermarket brake pedal pads or covers	• the fitment of the pads or covers does not: – necessitate any modification to the pedal arm, or – have any effect on the operation of other pedals.
Aftermarket or custom brake pedal extensions (for unusually short people)	• The extension: – does not exceed 100mm length when measured from the surface of the original brake pedal, and – is securely clamped to the original pedal by mechanical means, and – is sufficiently strong and rigid to withstand emergency brake loads, and – does not involve any modification to, or compromise the strength of, the original brake pedal, and – does not significantly change the sideways load or leverage against the pedal, and – does not significantly increase the weight of the pedal.
Additional brake pedals (for driving school vehicles)	• the operation of the primary brake pedal is not affected, and • no modifications to the primary brake pedal or any other part of the primary brake system has occurred.
Removal of secondary accelerator and brake system (where driving school vehicle is converted to single primary system)	• the vehicle was not originally manufactured as a dual-control vehicle (system was retrofitted after manufacture), and • the removal of the secondary system has reinstated the vehicle's primary systems back to the vehicle's exact original specification.
Aftermarket brake rotors	• the substitute rotors are: – the same size as the OE rotors, and – catalogued aftermarket items for that make and model of vehicle (and can include cross-drilled and/or slotted types), and – attached to unmodified OE parts.
Disability parking brake system	• the system is a non-OE mechanical or electrical system for applying and releasing the parking brake, and: – the parking brake performance is not compromised, and – in the case of electrical failure, the parking brake does not release.

Fitting of or modification to:	LVV certification is never required:
Aftermarket brake pads, linings and hoses	• in-service requirements for condition and performance must be met.
Any modifications for the purposes of law enforcement or the provision of emergency services	

Note 1 Definitions

Service brake means a brake for intermittent use that is normally used to slow down and stop a vehicle.

Parking brake means a brake readily applicable and capable of remaining applied for an indefinite period without further

attention.

Corrosion damage is where the metal has been eaten away, which is evident by pitting. The outward signs of such corrosion damage is typically displayed by the lifting or bubbling of paint. In extreme cases, the area affected by the corrosion damage will fall out and leave a hole.

Modify means to change a vehicle from its original state by altering, substituting, adding or removing a structure, system, component or equipment, but does not include repair.

Repair means to restore a damaged or worn vehicle, its structure, systems, components or equipment to within safe tolerance of its condition when manufactured, including replacement with undamaged or new structures, systems, components or equipment.

Note 2 If a brake is fitted with an inspection port plug, this must be removed for inspection of the brake components.

Note 3 Hose end fittings that can be undone using hand tools are unacceptable.

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake

Summary of legislation

Applicable legislation

- Land Transport Rule: Heavy-vehicle Brakes 2006

Mandatory requirements

Service brake

1. A heavy vehicle must have a service brake that acts on each wheel, except for a heavy vehicle first registered in New Zealand **before 1 November 1990** which may have a service brake that is designed to act on those wheels as determined by the vehicle manufacturer.
2. A vehicle of class NB or NC listed in **Table 8-1-2** must be fitted with an anti-lock braking system (ABS).

Parking brake

3. A heavy vehicle must have a parking brake.
4. A parking brake of a heavy vehicle first registered in New Zealand **on or after 1 November** 1990 must act on at least 40% of the wheels.
5. The parking brake of a heavy vehicle, whether in combination or not, must be able to be applied by the driver from the normal driving position using one control only.

Emergency brake

6. A heavy vehicle must have an emergency brake which may be combined with the parking or service brake.
7. The emergency brake of a heavy vehicle first registered in New Zealand **on or after 1 November 1990** that is combined with the service brake or the parking brake acts on the transmission must meet the requirements of **Table 8-1-3**.

Hoses and other flexible tubing

8. A hose or other flexible tubing forming part of the compressed air or vacuum lines of a vehicle must comply with one or more of the approved vehicle standards in **Table 8-1-4**.

Compressed air brake systems

9. An air-braked class NB or NC vehicle must be fitted with one (or more) pressure gauge(s), readily visible to the driver at all times from the driver's normal driving position, to indicate to the driver the pressure in the service brake reservoir(s).
10. An air-braked class NB or NC vehicle must be fitted with a device that provides a continuous signal that is clearly visible or audible from the driver's normal driving position if the pressure in one or more of the service brake reservoirs is below the minimum safe operating pressure specified by the vehicle manufacturer or brake manufacturer. An audible signal may be rendered inoperative only while the parking brake is fully applied or an automatic transmission is in the park position.

Reasons for rejection

Mandatory equipment

Service brake

1. A heavy vehicle does not have a service brake.
2. A heavy vehicle first registered in New Zealand **on or after 1 November 1990** does not have a service brake that is designed to act on each wheel.
3. A vehicle of class NB or NC listed in **Table 8-1-2** is not fitted with an anti-lock braking system (ABS).

Parking brake

4. A heavy vehicle does not have a parking brake.
5. A parking brake of a heavy vehicle first registered in New Zealand **on or after 1 November 1990** acts on less than 40% of the wheels.
6. The parking brake of a heavy vehicle or combination of vehicles cannot be applied by the driver from the normal driving position using one control only.

Emergency brake

7. A heavy vehicle does not have an emergency brake.
8. The emergency brake of a heavy vehicle first registered in New Zealand **on or after 1 November 1990** that is combined with the service brake or with a parking brake that acts on the transmission does not meet the requirements of **Table 8-1-3**.

Hoses and other flexible tubing

9. A hose or other flexible tubing forming part of a compressed air or vacuum line does not comply with at least one of the standards in **Table 8-1-4** (**Note 2**).

Compressed air brake systems

10. A heavy vehicle that is fitted with an air brake or a brake that is operated with the assistance of compressed air is not equipped with an air pressure gauge that indicates the pressure in a service brake reservoir (**Note 3**).
11. The service brake circuit of an air-braked class NB or NC vehicle are not fitted with a low-pressure warning device visible and /or audible from the driver's normal driving position.

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)

11. An air-braked vehicle of class NB or NC listed in Table 8-1-5 must have towing vehicle protection.
12. The air brake of a heavy vehicle first registered in New Zealand **on or after 1 March 2007** or modified on or after that date that can be operated in a combination vehicle must be capable of being connected to the air brake of the other vehicle by means of a two-line system.
13. A two-line system must consist of:
    a) a supply line that supplies compressed air from the towing to the towed vehicle, and
    b) a control line that supplies a control signal, in the form of modulated air pressure, to regulate the intensity of the brake application on the towed vehicle or vehicles.
14. A vehicle that is certified to the New Zealand Heavy-vehicle Brake Specification (HVBNZ) must:
    a) have a drain valve fitted to the lowest point of each brake reservoir, specifically, the reservoirs of the service brake and park brake, and including the so-called 'wet tank', and
    b) a drain valve fitted to an air-brake reservoir or to the reservoir of auxiliary equipment must be capable of being operated by a person standing beside the vehicle, without the need for a pit or hoist, and
    c) an automatic drain valve must have a means of manual operation.

Permitted equipment

15. An air-operated device may be connected to the air brake only if:
    a) the brake is protected so that the operation or failure of the device cannot lower the pressure in any service or parking brake reservoir(s) below the pressure specified by the vehicle manufacturer or brake manufacturer, or, if such information is not available, two-thirds of its maximum operational pressure specified by the vehicle manufacturer or brake manufacturer, and
    b) the supply to the device is drawn from a reservoir separate from the service brake or parking brake reservoir(s) supplying the brake, except that an air-operated device may be supplied with compressed air from the service brake or parking brake reservoir(s) if:
        i. the operation of the device requires only a small amount of compressed air and it is supplied with compressed air by a hose or pipe with an external diameter not exceeding 8 mm, or
        ii. the device is operated only when the vehicle is stationary, or
        iii. the vehicle manufacturer allows it.

Reasons for rejection

12. An air-braked vehicle of class NB or NC listed in **Table 8-1-5** does not have towing vehicle protection (**Note 4**).
13. The air brake of a heavy vehicle first registered in New Zealand **on or after 1 March 2007** that has a towing connection to tow an air braked trailer (or a tow connection fitted **on or after 1 March 2007**) is not capable of being connected to the air brake of the trailer by means of a two-line system.
14. A vehicle that is certified to the New Zealand Heavy-vehicle Brake Specification (HVBNZ) does not have:
    a) a drain valve fitted to the lowest point of each brake reservoir, specifically, the reservoirs of the service brake and park brake, and including the so-called 'wet tank', or
    b) a drain valve fitted to an air-brake reservoir or to the reservoir of auxiliary equipment is not capable of being operated by a person standing beside the vehicle, without the need for a pit or hoist, or
    c) an automatic drain valve does not have a means of manual operation.

    Note Operation of drain valves must not require the use of tools.

Permitted equipment

15. An air-operated device is supplied air from a service brake reservoir (ie not from a separate reservoir) unless:
    a) the operation of the device requires only a small amount of compressed air and it is supplied with compressed air by a hose or pipe with an external diameter not exceeding 8 mm, or
    b) the device is operated only when the vehicle is stationary, or
    c) the vehicle manufacturer allows it.
16. An air-operated device is connected to the air brake system without protection (**Note 5**).
17. A temporary stop brake:
    a) cannot be operated from the driver's normal driving position, or

16. A vehicle may be fitted with a device (temporary stop brake) that can be operated by the driver from the driver's normal driving position to keep the vehicle stationary temporarily, provided that the device does not prevent the safe operation of the service brake or the parking brake of the vehicle.
17. A temporary stop brake may:
    a) apply the service brake, either partially or fully, on some or all of the vehicle's wheels, or
    b) prevent the release of the service brake, when applied by the driver, on some or all of the vehicle's wheels.
18. A temporary stop brake that can only be deactivated by the driver must have a label permanently attached displaying the words NOT FOR PARKING.
19. A temporary stop brake that can be deactivated by the control system of the vehicle must have:
    a) a label permanently attached displaying the words NOT FOR PARKING, or
    b) an audible warning device that operates when the driver's door is open while the device is activated and the parking brake is not fully applied.
20. A vehicle may be fitted with a retarder or engine brake to control the speed of the vehicle.
21. A retarder or engine brake fitted **on or after 1 March 2007** must have a control that can be operated from the driver's normal driving position.
22. A powered vehicle that is operated as a combination vehicle may be fitted with a trailer-brake hand control that must be capable of applying the service brake of the trailer or trailers in a progressive manner; and must automatically return to its original position.
23. A powered vehicle with a hydraulic service brake may be fitted with an additional rear axle that has an air operated disc brake as a service brake.
24. A heavy vehicle may be fitted with a warning system that is part of, or associated with, the use of a brake component or system.

Prohibited equipment

25. A heavy vehicle must not have a device fitted by which the driver would be able to adjust the service brake force distribution between the axles or between the vehicles that are used in combination.
26. The service brake of a vehicle must not have more than one control (other than a separate trailer hand brake control, or a vehicle converted to dual steering in which case the service brake control assembly must be replicated on the other side of the vehicle.)

Condition

27. A brake must be easily adjustable to compensate for wear or have a means of automatic adjustment and be in good condition.

Reasons for rejection

b) interferes with the safe operation of the service brake or the parking brake of the vehicle, or

c) when it can be deactivated only by the driver, does not have a label permanently attached displaying the words NOT FOR PARKING, or

d) when it can be deactivated by the control system of the vehicle (eg when the engine is switched off), does not have at least one of the following:

- a label permanently attached displaying the words NOT FOR PARKING
- an audible warning device that operates when the driver's door is open while the device is activated and the parking brake is not fully applied.

18. A retarder or engine brake fitted **on or after 1 March 2007** does not have a control that can be operated from the driver's normal driving position.
19. A trailer - brake hand control does not:
    a) apply the service brakes of the trailer(s), or
    b) automatically return to its original position.

Prohibited equipment

20. A heavy vehicle has a device fitted that allows the driver to adjust the service brake force distribution between the axles or between the vehicles that are used in combination.
21. A service brake has more than one control (other than a separate trailer hand brake control or a vehicle converted to dual steering)

Condition

22. Refer to general vehicle pages.
23. A brake is not capable of being easily adjusted.
24. An adjustment indicator rod is:
    a) missing, or
    b) seized.
25. A brake component has excessive travel or stroke (eg as shown by an adjustment indicator rod or similar device).

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)

28. The brake friction material of a brake must be:
    a) secure, and
    b) in good condition, and
    c) free of defects that could noticeably and adversely affect the performance of the brake.
29. When a brake lining or a brake pad on an axle is replaced:
    a) all the brake linings or brake pads on that axle must be replaced, and
    b) all replacement brake linings and brake pads on that axle must be of the same make, type and grade.
30. A pressure gauge must indicate the pressure in pressure units, or on a coloured scale, or in an equivalent way.
31. A towing vehicle and an air-braked towed vehicle first registered in New Zealand **on or after 1 March 2007** or modified on or after that date must be fitted with a coupling device to connect the air brake to, and disconnect it from, that of the other vehicle, and that device must:
    a) be robust, durable, and suitable for automotive application, and
    b) prevent, either through the design of the coupling device or through its installation, the incorrect connection of the control and supply lines, and
    c) not adversely affect the performance of the brake of either the towing or towed vehicle(s), and
    d) have an effective break-away function.
32. The socket of a coupling device must be fitted as close as practicable to:
    a) the centre-line of the vehicle, and
    b) the towing connection by which the towed and towing vehicles are connected.

Performance

33. A brake test that verifies that a vehicle complies with performance requirements must be carried out, and the test results evaluated, in accordance with methods and conditions approved by the NZTA by notice in the *New Zealand gazette*.
34. The service brake on a heavy vehicle must be able to be applied in a controlled and progressive manner.
35. Every brake which simultaneously applies the braking pressure on two wheels with a common axis must be adjusted or fitted so that the braking effect is approximately the same on both wheels when the brake is applied by the driver, except if the braking effect is modulated by a device to prevent the wheels locking or to improve stability (eg ABS or EBS).
36. When the brake on a heavy vehicle is applied:
    a) the vehicle or its controls must not vibrate to the extent that control of the vehicle is adversely affected, and

Reasons for rejection

26. A brake actuator (including a slack adjuster and associated components):
    a) is insecure, or
    b) is leaking air, or
    c) is cracked, or
    d) does not operate, or
    e) is excessively worn or corroded, or
    f) is not seated correctly.
27. A treadle valve, brake valve, reservoir, compressor or fluid pump:
    a) is missing, or
    b) is insecure, or
    c) is cracked, or
    d) is leaking air, or
    e) does not operate or operates incorrectly, eg due to corrosion, damage,incorrect fitment or excessive travel, or
    f) contains excessive amounts of foreign fluids (eg water or oil).
28. A compressor or pump drive belt is:
    a) insecure, or
    b) damaged, or
    c) significantly deteriorated.
29. A brake lining or brake pad:
    a) has obviously been replaced **on or after 1 March 2007** without all the linings or pads on the axle being replaced at the same time, or
    b) is obviously of a different make, type or grade from another on the same axle.
30. A required service brake reservoir air pressure gauge is not readily visible to the driver (day and night) from the driver's normal driving position (**Note 6**).

b) the braking effort on each wheel must provide stable and efficient braking without adverse effect on the directional control of the vehicle, and

c) if the vehicle is equipped with an anti-lock braking system (ABS), the vehicle's rotationally-sensed wheels must not lock, when the speed of the vehicle is above the ABS-activation parameters set by the vehicle manufacturer.

37. A brake warning system, if fitted on a heavy vehicle must function correctly (does not apply to a brake pad wear system).

Service brake

38. The service brake of a vehicle that is operated on a hard, dry, level surface that is free of loose material, and without assistance from the compression of the engine or other retarders must operate in the following manner:

a) a service brake that is designed to act on four or more wheels must stop the vehicle within a distance of seven metres from a speed of 30 km/h (average brake efficiency of 50%).

b) a service brake that is designed to act on fewer than four wheels on a vehicle first registered in New Zealand **before 1 February 1977** must stop the vehicle within a distance of 9 m from a speed of 30 km/h (average brake efficiency of 40%).

c) A service brake on a heavy vehicle manufactured **before 31 December 1918** not capable of exceeding a speed of 30 km/h must stop the vehicle within a distance of 20 m from a speed of 30 km/h (average brake efficiency 18%) or equivalent brake efficiency at its maximum speed.

Parking brake

39. A parking brake of a vehicle or vehicle combination that is operated on a hard, dry, level surface that is free of loose material, and without assistance from the compression of the engine or other retarders must operate in the following manner:

- Stop the vehicle within 18 m from a speed of 30 km/h (average brake efficiency of 20%).

Compressed air brake systems

40. Reservoir capacity: With the air pressure in the braking system at its maximum operating pressure specified by the vehicle manufacturer or brake manufacturer and with the compressor stopped, the reserve of compressed air of the braking system must provide a minimum of:

a) For a combination of heavy vehicles equipped with a towing vehicle protection valve (tractor protection valve) on the towing vehicle and an emergency or break-away valve on the trailer(s):

three full service brake applications with full release of the brakes after each application before the low pressure warning device or emergency valve

Reasons for rejection

31. An air brake coupling device fitted to a heavy vehicle first registered in New Zealand **on or after 1 March 2007** or fitted to a vehicle on or after that date:

a) is not robust, durable, or suitable for automotive application, or

b) is unable to prevent the incorrect connection of the control and supply lines, or

c) adversely affects the performance of the brake of either the towing or towed vehicle(s), or

d) does not have an effective break-away function, or

e) the coupling is not fitted as close as practicable to:

i. the centre-line of the vehicle, or

ii. the rear of the towing vehicle, or

iii. the towing connection by which the towed and towing vehicles are connected.

32. A brake pipe (including connections) is:

a) leaking, or

b) insecure, or

c) deformed from its original shape, or

d) chafed, or

e) corrosion damaged, eg there are signs of pitting or a noticeable increase in the pipe's diameter, or

f) damaged so the cross-sectional area is reduced, or

g) fouled by moving parts.

33. A hose or plastic brake pipe (including connections):

a) is leaking, or

b) is insecure, or

c) bulges under pressure, or

d) is twisted or stretched, or

e) is cracked or chafed, eg the reinforcement cords are exposed, or

f) has metal components that are excessively corroded, or

g) fouled by moving parts.

operates, and two further full applications after the low pressure warning device operates, or

b) In the case of a single vehicle that complies with a European brake standard:

four full service brake applications with full release of the brakes after each application before the low-pressure warning operates, and two further full applications after the low pressure warning device operates, or

c) For all other vehicles:

five full service brake applications with full release of the brakes after each application before the low-pressure warning device operates, and two further full applications after the low pressure warning device operates.

Note A full service-brake application is considered to be made when all the brake actuators on the vehicle or combination are operated to apply their associated brakes in an effective manner.)

41. Compressor capacity: At the maximum governed speed, or where the engine is not governed at a speed determined by the vehicle inspector, the compressor shall be capable of raising the pressure in the braking system to the maximum operating pressure specified by the vehicle manufacturer or brake manufacturer in the following times:

a) in not more than 3 minutes, starting from the pressure at which the low-pressure warning ceases to operate or, when the emergency braking operates, and

b) in not more than 90 seconds, starting from the pressure to which the brake system falls from the maximum operating pressure specified by the vehicle manufacturer or brake manufacturer as a result of fully applying and releasing the service brakes three times as permitted in 'Summary of legislation 40' above, or five times in all other cases.

42. The compressor must supply only the brake reservoirs with compressed air until the pressure in those reservoirs reaches the pressure specified by the vehicle manufacturer or the brake manufacturer, or, if such information is not available, two-thirds of the maximum operational pressure specified by the vehicle manufacturer or the brake manufacturer.

43. An air brake must have priority of supply of compressed air from the brake reservoir.

44. For a class NB or NC vehicle that has more than one compressed air service or parking brake circuit, a failure in any service or parking brake circuit that lowers the pressure in any service or parking brake reservoir below the pressure at which the low pressure warning device starts to operate, must not reduce the pressure in any other service or parking brake reservoir below that pressure.

Reasons for rejection

34. A coiled nylon brake hose (suzie coil) does not have:

a) a straight hose section at the connector that is at least 50 mm long, or

b) a spring guard adjacent to the end fittings capable of supporting and protecting the brake hose.

Note While spring guards can vary in design and length they must remain in good condition, ie not have broken or looped coils.

Performance

Service brake (Note 7)

35. The service brake cannot be applied in a controlled and progressive manner.

36. When the service brake is applied and without assistance from the engine or other retarders:

a) the vehicle does not stop within seven metres from a speed of 30 km/h (average brake efficiency of 50%) for a vehicle which has a service brake designed to act on at least four wheels, or

b) the vehicle does not stop within nine metres from a speed of 30 km/h (average brake efficiency of 40%) for a vehicle first registered in New Zealand **before 1 February 1977** which has a service brake designed to act on fewer than four wheels, or

c) the vehicle does not stop within 20 m from a speed of 30 km/h (average braking efficiency of 18%) or equivalent efficiency at its maximum speed for a vehicle manufactured **before 31 December 1918** and not capable of exceeding a speed of 30 km/h.

37. Where the service brake is applied:

a) the vehicle vibrates under braking to the extent that the control of the vehicle is adversely affected, or

b) the brake fails to release immediately after the brake pedal has been released, or

c) the directional control is affected (eg swerving to one side, or the brakes on one side apply more slowly than the other side), or

d) the brake balance, at any time above the threshold value, varies by more than 30% between wheels on a common axle.

45. A vehicle that is certified to the New Zealand Heavy-vehicle Brake Specification (HVBNZ) and fitted with a spring-operated parking brake that is normally released by compressed air, the simultaneous application of the service brake and parking brake must not result in a compounded brake force on the axle or axles on which the parking brake acts. This may be referred to as an 'anti-compounding' requirement.

Modification and certification

46. The brakes fitted to a heavy vehicle must comply with the certification requirements in **Table 8-1-6**.

47. A modification that may affect the brake system must be inspected and certified by a heavy vehicle specialist certifier of category HVEK, HVMK or HVIK, unless the vehicle:

    a) is excepted from the requirement for heavy vehicle specialist certification (**Table 8-1-7**), and

    b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Reasons for rejection

38. The ABS or brake system warning lamp or self-check system, if fitted, indicates a defect in the ABS or brake system (does not apply to brake pad wear warning systems).

Parking brake (Note 7)

39. When the parking brake is applied:

    a) the vehicle does not stop within 18 m from a speed of 30 km/h (average brake efficiency of 20%), or

    b) it does not hold all the wheels on a common axle stationary against attempts to drive the vehicle away.

Compressed air brake systems

40. Reservoir capacity: With the air pressure in the braking system at its maximum operational pressure as specified by the vehicle or brake manufacturer and the compressor stopped, the reserve of compressed air does not provide:

    a) for a combination of heavy vehicles equipped with a towing vehicle protection valve (tractor protection valve) on the towing vehicle and an emergency or a breakaway valve on the trailer(s):

        i. three full service brake applications with full release of the brakes before the low-pressure warning device operates, or before the emergency valve operates, and

        ii. two full applications with full release of the brakes after the low-pressure warning device operates, or

    b) For a single class NB or NC vehicle that complies with a European brake standard:

        i. four full service brake applications, with full release of the brakes after each application, before the low-pressure warning device operates, and

        ii. two full applications, with full release of the brakes, after the low-pressure warning device operates, or

Brakes | **8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)**

Reasons for rejection

c) For all other vehicles:

i. five full service brake applications, with full release of the brakes after each application, before the low-pressure warning device operates, and

ii. two full applications, with full release of the brakes, after the low-pressure warning device operates.

Note A full service-brake application is considered to be made when the brake pedal is fully depressed and there is no further movement of the brake actuators.

41. Compressor capacity: At the maximum governed speed, or where the engine is not governed at a speed determined by the vehicle inspector, the compressor is not capable of raising the air pressure in the braking system to the maximum operating pressure specified by the vehicle or brake manufacturer, in the following times:

a) in not more than three minutes, starting from the pressure at which:

i. the low pressure warning device ceases to operate, or:

ii. the pressure at which the emergency brake operates, and

b) in not more than 90 seconds, starting from the pressure to which the brake system falls from the maximum specified operating pressure as a result of fully applying and releasing the service brakes:

i. five times for a single class NB or NC vehicle, or a heavy vehicle combination without a towing vehicle protection valve (tractor protection valve) and an emergency or breakaway valve on the trailer(s), or

ii. three times for heavy vehicle combinations with a towing vehicle protection valve (tractor protection valve) and an emergency or breakaway valve on the trailer(s).

42. A service brake reservoir air-pressure gauge does not operate correctly.

Reasons for rejection

43. A required low-pressure warning device does not give a continuous signal, visible or audible, that clearly indicates to the driver when the pressure in any of the service brake circuits is below the minimum safe operating pressure unless the parking brake is fully applied or an automatic transmission is in the 'park' position (**Note 8**).

44. A required towing vehicle protection valve does not operate.

45 A required drain valve cannot be operated manually.

Note Operation of drain valves must not require the use of tools.

46. A class NB or NC vehicle has more than one air service brake circuit and there is no protection between those circuits (**Note 9**).

47. On a vehicle that is certified to the New Zealand Heavy-vehicle Brake Specification (HVBNZ) the simultaneous application of the service brake and the spring parking brake results in the compounding of the two individual brake forces on that axle.

Modification and certification.

48. A vehicle in **Table 8-1-6**:

a) has not been certified as required by that table, or

b) has been modified so that recertification is required.

49. A modification that affects the brake system has not been inspected and certified by a heavy vehicle specialist certifier, unless the vehicle:

a) is excepted from the requirement for heavy vehicle specialist certification (**Table 8-1-7**), and

b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Table 8-1-2. Class NB and NC vehicles that must be fitted with an anti-lock braking system[1]

Class NB and NC vehicles
Imported vehicles • operated in a combination with a GM[2]>39 ≤44 t, and • first registered in New Zealand after 1 March 2007 and before 1 July 2008, EXCEPT FOR – vehicles that comply with European standards[3] UNLESS fitted OE with ABS, and – logging vehicles UNLESS fitted OE with ABS, and – vehicles that comply with HVBS(2) or HVBC(2)
Imported vehicles • fitted with a towing connection for towing a heavy trailer, and • first registered in New Zealand on or after 1 July 2008, EXCEPT FOR – vehicles that comply with European standards[3] UNLESS fitted OE with ABS, and – logging vehicles UNLESS fitted OE with ABS

[1] The OE fitting of an anti-lock braking system (ABS) indicates that it was probably required by the standard. The removal of an ABS is a modification and must be HVS certified.

[2] GM means gross mass (see definitions in the Introduction)

[3] A vehicle that complies with European standards is identified as HVBE on the Certificate of Loading. Refer to Table 3-1-1 of .

Table 8-1-3. Emergency brake requirements for class NB and NC vehicles

All vehicles first registered in New Zealand on or after 1 November 1990 except those in the right hand column	**Vehicles first registered in New Zealand 1 November 1990 to 31 December 1994 when the parking brake acts on the transmission and brakes not modified since manufacture**
Full dual-circuit service brake[1], and a) one of those circuits activates the brake on all the front wheels and the other circuit activates the brake on all the rear wheels, or b) each circuit activates the brake on at least one-third of the wheels[2].	EITHER A full dual-circuit service brake[1], and a) one of those circuits activates the brake on all the front wheels and the other circuit activates the brake on all the rear wheels, or b) each circuit activates the brake on at least one-third of the wheels[2] OR A dual-line service brake that is fitted with a tandem/dual master cylinder OR A single-line hydraulic service brake that is divided into two independent circuits through and excess flow-prevention valve, and the brake fluid reservoir is fitted with a low-level warning device.

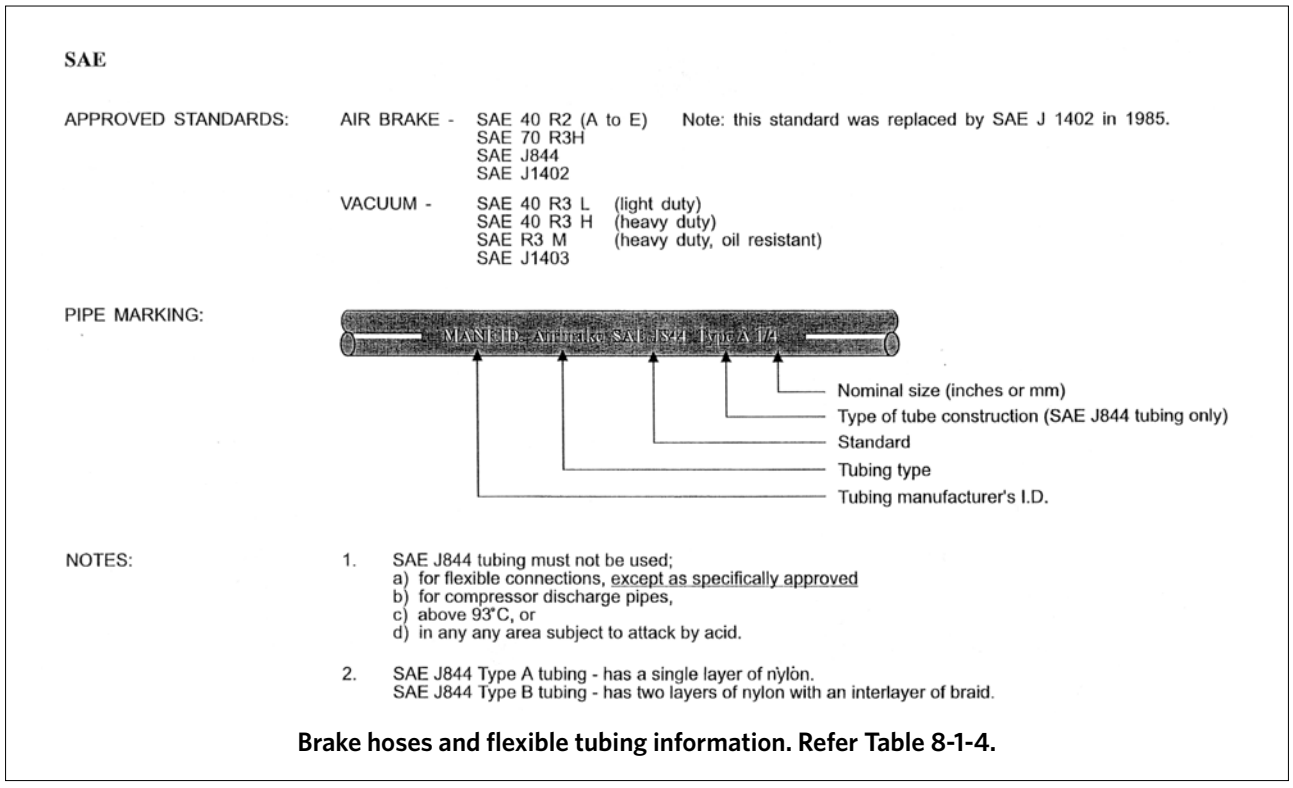
[1] For a hydraulic system, this means a dual or tandem master cylinder.

[2] Both circuits together must activate the brake on all the wheels.

Table 8-1-4. Approved vehicle standards for brake hoses and flexible tubing[1]

All vehicles
SAE J844: Nonmetallic Air Brake System Tubing
SAE J1394: Metric Nonmetallic Air Brake System Tubing
SAE J1402: Automotive Air Brake Hose and Hose Assemblies
SAE J1403: Vacuum Brake Hose (supersedes SAE 40 R3)
British Standard AU 110: 1965, Specification for rubber hoses and hose assemblies for automotive air pressure brakes systems (withdrawn, revised)
British Standard AU 109: 1965, Specification for vacuum brake hose (heavy duty) of oil-resistant rubber (withdrawn)
Japan Industrial Standard D2606-80: Rubber hose for automotive air brake system
DIN 74324-1: 1996, Air braking systems – Thermoplastic tubing – Requirements and tests
DIN 73378: 1996, Polyamide tubing for motor vehicles
Federal Motor Vehicle Safety Standard No. 106: Brake hoses
SAE 40 R2 (A-E)
SAE 70 R3H
SAE 40 R3 L
SAE 40 R3 H
SAE R3 M
Nylon tubing of approved makes: Anson Plastics, Nylex, TWL

1 Hoses and tubing may comply with a more recent version of these standards if the safety performance of the vehicle is not adversely affected.

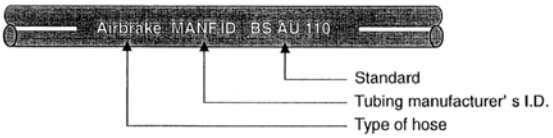


Brake hoses and flexible tubing information. Refer Table 8-1-4.

SMMT (Society of Motor Manufacturer' s and Traders) British Standards

APPROVED STANDARDS: AIR BRAKE - BS AU 110
VACUUM - BS VSAU 109

PIPE MARKING:



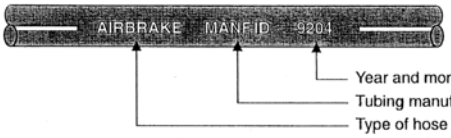
NOTES:

Marking colour	Hose type	
Red	1 & 2	For use between compressor and reservoir. Max temperature 135°C.
White	3 & 4	Synthetic rubber hose for use in other parts of brake system.
Blue	5 & 6	Natural rubber hose for use in other parts of brake system.

Japanese Industrial Standards

APPROVED STANDARD: AIR BRAKE - JIS D2606
VACUUM -

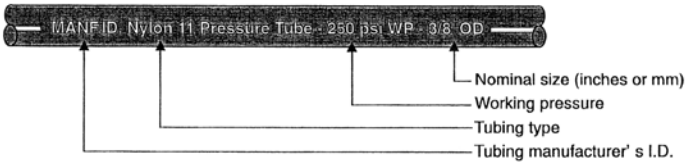
PIPE MARKING:



Nylon 11

APPROVED MAKES: AIR BRAKE - Anson Plastics
Nylex
TWL

PIPE MARKING:



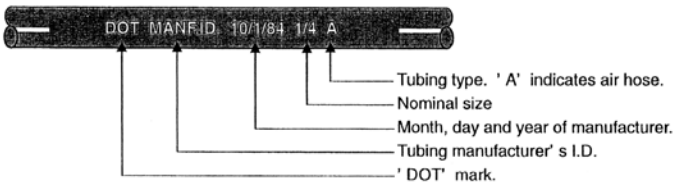
NOTES:

1. Nylon 11 tubing may only be used in fail-safe applications such that:
   a) its failure does not prevent the application of the brakes by the driver, or
   b) its failure will cause the brakes to apply.

DOT (Department of Transportation, USA)

APPROVED STANDARDS: AIR BRAKE - FVMSS 106

PIPE MARKING:



NOTES:

1. All lettering must be in capitals.
2. The nominal size may be shown in fractions of an inch or millimetres:
   - if the size is shown in millimetres then the abreviation ' mm' must follow.
   - if the nominal outside diameter is shown it must be followed by ' OD' .

Brake hoses and flexible tubing information. Refer Table 8-1-4.

Table 8-1-5. Air-braked class NB and NC vehicles that must have towing vehicle protection

Air-braked class NB and NC vehicles
Operated in a combination with a GM[1]>39 ≤44 t, and • first registered in New Zealand after 1 March 2007 and before 1 July 2008, or • modified after 1 March 2007 and before 1 July2008
Fitted with a towing connection for towing a heavy trailer, and • first registered in New Zealand on or after 1 July 2008, or • modified on or after 1 July 2008

1 GM means gross mass (see definitions in the Introduction).

Table 8-1-6. Heavy vehicle brakes: certification requirements for class NB and NC vehicles

Conditions applying	Requirements
Operated in a combination with a GM[2]>39 ≤44 t, and • first registered in New Zealand before 1 March 2007, and • not modified on or after 1 March 2007 (includes vehicles modified before 1 March 2007)	Existing applicable certification: • IHVBS(1) Interim Performance Specification for Heavy Vehicle Braking, or • IHVBS(2) Heavy vehicle braking specification of 6 December 1998, or • HVBC(1) Heavy Vehicle Brake Code, First Edition 1991, or • HVBC(2) Heavy vehicle brake code, second edition
Modified[3] in New Zealand 1 March 2007–30 June 2008, and • operated in a combination with a GM[2]>39 ≤44 t.	Applicable certification: • IHVBS(2) Heavy vehicle braking specification of 6 December 1998, or • HVBC(2) Heavy vehicle brake code, second edition, or • HVBNew Zealand New Zealand heavy vehicle brake specification1
Modified[3] in New Zealand 1 March 2007–30 June 2008	Heavy vehicle specialist certification
Modified[3] in New Zealand on or after 1 July 2008, and with a towing connection for towing a heavy trailer	Applicable certification: • HVBNew Zealand New Zealand heavy vehicle brake specification1
Modified[3] in New Zealand on or after 1 July 2008, and without towing connection for towing a heavy trailer.	Applicable certification: • HVBNew Zealand New Zealand heavy vehicle brake specification1, or • 6.1(2)(b) of Heavy Vehicle Brake Rule (stopping tests)1

1 Except that a vehicle that originally complied with one of the approved vehicle standards for brakes and that is modified by fitting an additional axle, removing an axle, replacing an axle with one that is not of the same make and model, or replacing the brake of an axle with one that is not of the same make and model may be modified so as to continue to meet the technical and performance requirements of the approved vehicle standard for brakes with which it originally complied. (A heavy vehicle specialist certifier is required to certify compliance).

2 **GM** means gross mass (see definitions in the Introduction).

3 **Modified** in this case means to change the vehicle or its braking system from its original state by altering, substituting, adding or removing any structure, system, component or equipment that may affect the brakes and includes, but is not limited to:

- altering a vehicle's wheelbase outside the range specified by the vehicle manufacturer, or if no range is specified, altering the wheelbase by more than 500 mm from original manufacturer
- fitting a tow connection to tow a heavy vehicle.

Table 8-1-7. Modifications that do not require HVS certification

Fitting of or modification to:	HVS certification is not required provided that:
Aftermarket brake pedal pads or covers	• the fitment of the pads or covers does not: – necessitate any modification to the pedal arm, or – have any effect on the operation of other pedals.
Aftermarket or custom brake pedal extensions (for unusually short people)	the extension: – does not compromise the strength of the original pedal, and – is sufficiently strong to withstand emergency braking loads.
Additional brake pedals (for driving school vehicles)	• the operation of the primary brake pedal is not affected, and • no modifications to the primary brake pedal or any other part of the primary brake system has occurred.
Replacement of an air brake coupling device	• the coupling replaces: – glad hands with a duomatic or triomatic, or – a duomatic with a triomatic.
Fitting an air brake coupling device	• the coupling and associated air lines utilise the tractor protection valve fitted by the vehicle manufacturer
Fitting of a valve to allow the spring parking brake of any towed trailer(s) to operate when the parking brake of the powered vehicle is applied.	• the fitting of the valve is carried out in accordance with the vehicle manufacturer's recommendations
Fitting of air auxiliary devices	• the air auxiliaries: - have been fitted as standard equipment by the vehicle manufacturer or their approved New Zealand agent, or - they are connected to an auxiliary take-off point provided by the vehicle manufacturer, or - the supply line has an outside diameter no greater than 8 mm.
Air fittings (e.g. a connector, T-piece or an air reservoir drain valve)	• the air fitting: - does not affect the performance of the braking system, and - is suitable for the intended purpose, and - is unmodified (ie not welded, drilled or tapped), and - is installed correctly to unmodified components.
Vehicle's wheelbase	• the altered wheelbase is not outside the range specified by the vehicle manufacturer, or if no range is specified, is not altered by more than 500 mm from original manufacturer.
Any modifications for the purposes of law enforcement or the provision of emergency services	

Note 1 Definitions

Air brake means a brake, the operation of which requires the use of compressed air.

Anti-lock braking system (ABS) means a device that senses that one or more of the wheels is starting to lock-up during braking and regulates the braking forces automatically and effectively to prevent it.

Auxiliary brake means a device, other than a service brake or parking brake, fitted to a vehicle to enable the driver to control its speed, whether or not it is suitable to stop the vehicle.

Dedicated combination means a combination of vehicles certified for use in combination where both vehicles are affixed with a plate clearly and indelibly marked with the VIN or chassis number of the other vehicle.

Emergency brake in relation to any vehicle, or combination of vehicles, means the system that makes it possible to undertake a controlled stop of the vehicle or combination in the event of the failure of the service brake. (Emergency brakes must act as directly as practicable without any interposition of any differential gearing.)

Foundation brake means the basic brake assembly fitted to each axle or road wheel which produces the braking force necessary to bring a vehicle to a stop; and includes the complete drum or disc brake.

Hydraulic brake means a brake that utilises hydraulic pressure to activate the foundation brake, whether its operation is assisted by compressed air, vacuum or any other means.

Modify means to change the vehicle from its original state by altering, substituting, adding or removing any structure, system, component or equipment; but does not include repair.

Parking brake means a brake that is designed for keeping the vehicle stationary, and that is readily applicable and capable of remaining applied for an indefinite period without further attention. (Hydraulic locking devices are not acceptable as parking brakes. The parking brake must be applied by solely mechanical means.)

Repair means to restore a damaged or worn vehicle, its structure, systems, components or equipment; and includes the replacement of damaged or worn structures, systems, components or equipment with equivalent undamaged or new structures, systems, components or equipment.

Reservoir for the purpose of the Heavy-vehicle Brakes Rule, means a device designed and constructed to store fluid, compressed air, compressed gas, or vacuum; and does not include pipes, valves, hoses, or booster cylinders operated by vacuum or compressed air.

Service brake means a brake for intermittent use that is designed for the purpose of slowing down and stopping the vehicle.

Trailer brake hand control means a hand-operated control capable of applying the service brake of the trailer or trailers.

Wheel means a rotating load-carrying member between the tyre and the hub, which usually consists of two major parts, the rim and the wheel disc, which may be manufactured as one part, or permanently attached to each other, or detachable from each other; and includes the tyre fitted to the rim.

Note 2 For in-service inspections standards compliance must be verified when there is reason to believe a hose or flexible tubing does not comply or when it forms part of a brake modification or repair.

Note 3 A vehicle may be fitted with more than one gauge, but only one gauge that indicates the pressure in one service brake reservoir is necessary. A gauge fitted to a supply reservoir (wet tank) cannot be used to indicate the pressure in a service brake reservoir.

Note 4 Towing vehicle protection means a means by which the air brake system of a towing vehicle is protected from loss of air pressure in the event of failure of the trailer's brake system, or when the trailer becomes disconnected from the towing vehicle.

Note 5 Protection, in this case, means a system to prevent the operation or failure of the device lowering the pressure in any service brake reservoir below the pressure specified by the vehicle manufacturer or brake manufacturer or, if this information is not available, two-thirds of the maximum operational pressure specified by the vehicle manufacturer or brake manufacturer. (Air auxiliaries have to be inspected at Entry certification however they do not have to be tested for in-service inspection provided:

- they have been fitted as standard equipment by the vehicle manufacturer or their approved New Zealand agent, or
- they are connected to an auxiliary take-off point provided by the vehicle manufacturer).

Note 6 A pressure gauge must indicate the pressure in pressure units, or on a coloured scale, or in an equivalent way. The gauge display must be visible, though it may be multi-functional, ie have the ability to display various items including the air pressure.

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)

Note 7 For the purpose of testing the brakes, the vehicle shall be presented with a load of at least 60 per cent of the road legal limit, or be subject to equivalent load simulation (refer to *CoF and entry certification brake test protocol and procedure* for specific requirements at http://www.nzta.govt.nz/resources/heavy-vehicle-break-testing/index.html).

Note 8 Where the minimum safe operating pressure is not specified by the vehicle or brake manufacturer, the minimum safe operating pressure is taken as 50% of the correctly adjusted cut-out pressure for the compressor or governor.

Note 9 Protection, in this case, means a system to prevent a brake failure that lowers the pressure in one service brake circuit below the minimum safe operating pressure from lowering the pressure in any other service brake circuit below the minimum safe operating pressure or pressure specified by the vehicle manufacturer or brake manufacturer.

Note 10 A supply reservoir (wet tank) is a brake reservoir from which the service brake reservoirs receive compressed air.

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake

Summary of legislation

Applicable legislation

- Land Transport Rule: Heavy-vehicle Brakes 2006

Mandatory equipment

Service brake

1. Refer to heavy vehicle pages.

Parking brake

2. Refer to heavy vehicle pages.

Emergency brakes

3. Refer to heavy vehicle pages.
4. The emergency brake of a heavy PSV first registered in New Zealand **on or after 10 February 1978** that is combined with the service brake or the parking brake acts solely through the transmission must meet the requirements of **Table 8-1-8**.

Hoses and other flexible tubing

5. Refer to heavy vehicle pages.

Compressed air brake systems

6. Refer to heavy vehicle pages.
7. An air-braked heavy PSV first registered in New Zealand **before 10 February 1978** must be fitted with either:
   a) one (or more) pressure gauge(s), readily visible to the driver at all times from the driver's normal driving position, to indicate to the driver the pressure in the service brake reservoir(s), or
   b) a device that provides a continuous signal that is clearly visible from the driver's normal driving position if the pressure in one or more of the brake reservoirs is below the minimum safe operating pressure specified by the vehicle manufacturer or brake manufacturer.
8. An air-braked heavy PSV first registered in New Zealand **on or after 10 February 1978** must be fitted with one (or more) pressure gauge(s), readily visible to the driver at all times from the driver's normal driving position, to indicate to the driver the pressure in the service brake reservoir(s).
9. An air-braked heavy PSV first registered in New Zealand **on or after 10 February 1978** must be fitted with a device that provides a continuous signal that is clearly visible or audible from the driver's normal driving position if the pressure in one or more of the service brake reservoirs is below the minimum safe operating pressure specified by the vehicle manufacturer or brake manufacturer. An audible signal may be rendered inoperative only while the parking brake is fully applied or an automatic transmission is in the park position.

Reasons for rejection

Mandatory equipment

Service brake

1. Refer to heavy vehicle pages.

Parking brake

2. Refer to heavy vehicle pages.

Emergency brakes

3. Refer to heavy vehicle pages.
4. The emergency brake of a heavy PSV first registered in New Zealand **on or after 10 February 1978** that is combined with the service brake or with a parking brake that acts on the transmission does not meet the requirements of **Table 8-1-8**.

Hoses and other flexible tubing

5. Refer to heavy vehicle pages.

Compressed air brake systems

6. Refer to heavy vehicle pages.
7. An air-braked heavy PSV first registered in New Zealand **before 10 February 1978** is not fitted with either:
   a) a visual low pressure warning device fitted to the service brake reservoirs that is clearly visible from the driver's normal driving position, or
   b) an air pressure gauge that indicates the pressure in a service brake reservoir (**Note 1**).
8. An air-braked heavy PSV first registered in New Zealand **on or after 10 February 1978** is not fitted with an air pressure gauge that indicates the pressure in a service brake reservoir (**Note 1**).
9. The service brake reservoirs of an air-braked heavy PSV first registered in New Zealand **on or after 10 February 1978** are not fitted with a low pressure warning device that is clearly visible and/or audible from the driver's normal driving position.

Vacuum brake systems

10. A heavy PSV with more than 9 seating positions that uses a vacuum to boost the force supplied by the driver

Brakes

8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)

Vacuum brake systems

10. A heavy PSV with more than nine seating positions first registered in New Zealand **on or after 10 February 1978** that uses a vacuum to boost the force supplied by the driver to apply the brakes and is fitted with a vacuum reservoir, must be equipped with:

    a) a device that provides a continuous signal that is clearly audible to the driver, and

    b) a vacuum gauge.

Hydraulic brake systems

11. A heavy PSV first registered in New Zealand **on or after 1 September 1954** with brakes that are operated by pump-generated hydraulic pressure must be fitted with an audible warning device, and either:

    a) a warning lamp, or

    b) a suitable pressure gauge that is able to record both the maximum and minimum pressures being used.

Permitted equipment

12. Refer to heavy vehicle pages.

Prohibited equipment

13. Refer to heavy vehicle pages.

Condition

14. Refer to heavy vehicle pages.

Performance

15. Refer to heavy vehicle pages.

Service brake

16. Refer to heavy vehicle pages.

Parking brake

17. Refer to heavy vehicle pages.

Compressed air brake systems

18. Refer to heavy vehicle pages.

19. Reservoir capacity of a heavy PSV first registered in New Zealand **on or after 10 February 1978** – with the air pressure in the braking system at its maximum operating pressure specified by the vehicle or brake manufacturer and the compressor stopped, the reserve of compressed air of the braking system must provide a minimum of:

    a) in the case of a vehicle that complies with a European brake standard:

    four full service brake applications with full release of the brakes after each application before the low-pressure warning operates, and 2 further full applications after the low pressure warning device operates, or

Reasons for rejection

to apply the brakes and is fitted with a vacuum reservoir, is not fitted with:

a) an audible warning device, or

b) a vacuum gauge

Hydraulic brake systems

11. A heavy PSV first registered in New Zealand **on or after 1 September 1954** with brakes that are operated by pump-generated hydraulic pressure is not fitted with:

    a) An audible warning device, or

    b) A visible warning lamp or a suitable pressure gauge that is able to indicate both the maximum and minimum pressures being used.

Permitted equipment

12. Refer to heavy vehicle pages.

Prohibited equipment

13. Refer to heavy vehicle pages.

Condition

14. Refer to heavy vehicle pages.

Performance

Service brake

15. Refer to heavy vehicle pages.

Parking brake

16. Refer to heavy vehicle pages.

Compressed air brake systems

17. Refer to heavy vehicle pages.

18. Reservoir capacity of a heavy PSV – with the air pressure in the braking system at its maximum operating pressure specified by the vehicle or brake manufacturer and the compressor stopped, the reserve of stored compressed air does not provide:

    a) For a vehicle that complies with a European brake standard:

        i. four full service brake applications, with full

b) in the case of a vehicle that does not comply with a European brake standard:

five full service brake applications with full release of the brakes after each application before the low pressure warning device operates, and two further full applications after the low pressure warning device operates,

Note A full service-brake application is made when all the brake actuators on the vehicle are operated to apply their associated brakes in an effective manner.

20. Compressor capacity of a heavy PSV first registered in New Zealand **on or after 10 February 1978** – at the maximum governed speed, or where the engine is not governed at a speed determined by the vehicle inspector, the compressor shall be capable of raising the pressure in the braking system to the maximum operating pressure specified by the vehicle or brake manufacturer within the following time:

- In not more than 90 seconds, starting from the pressure to which the brake system falls from the maximum operating pressure specified by the vehicle manufacturer or brake manufacturer as a result of fully applying and releasing the service brakes five times.

21. For a heavy PSV first registered in New Zealand **on or after 10 February 1978** that has more than one compressed air service or parking brake circuit, a failure in any service or parking brake circuit that lowers the pressure in any service or parking brake reservoir below the pressure at which the low pressure warning device starts to operate, must not reduce the pressure in any other service or parking brake reservoir below that pressure.

Vacuum brake system

22. A heavy PSV with more than nine seating positions first registered in New Zealand **on or after 10 February 1978** that uses vacuum to boost the force supplied by the driver to apply the brakes and is fitted with a vacuum reservoir , must meet the following requirements:

a) the audible warning device must give continuous warning at any time the vacuum in the vehicle's reservoir has less than 25 kilopascals or its equivalent (eg 200 mm mercury), and

b) the vacuum gauge must indicate to the driver, in kilopascals or equivalent units, the vacuum available in the reservoir.

Hydraulic brake system

23. The audible warning system and the visible warning system / suitable pressure gauge fitted to a heavy PSV first registered in New Zealand **on or after 1 September 1954** with brakes that are operated by pump-generated hydraulic pressure must ensure that the driver at all times becomes aware immediately that the minimum hydraulic pressure is less than the pressure necessary for the safe operation of the vehicle.

Reasons for rejection

release of the brakes after each application, before the low-pressure warning device operates, and

ii. two full applications, with full release of the brakes, after the low-pressure warning device operates.

b) For a vehicle that does not comply with a European brake standard:

i. five full service brake applications with full release of the brakes after each application before the low pressure warning operates, and

ii. two full applications with full release of the brakes after the low pressure warning operates, or

Note A full service-brake application is considered to be made when the brake pedal is fully depressed and there is no further movement of the brake actuators.

19. Compressor capacity of a heavy PSV – with the vehicle's engine at maximum governed speed or if not governed, then at a speed determined by the vehicle inspector, the compressor is not capable of raising the air pressure in the braking system to the maximum operating pressure specified by the vehicle or brake manufacturer within:

- 90 seconds, starting from the pressure to which the brake system falls from the maximum specified operating pressure as a result of fully applying and releasing the service brakes five times.

20. A required low pressure warning device does not give a continuous signal, visible or audible, that clearly indicates to the driver when the pressure in any of the service brake reservoirs is below the minimum safe operating pressure unless the parking brake is fully applied or an automatic transmission is in the 'park' position (**Note 2**).

21. A service brake reservoir air-pressure gauge does not operate correctly.

Brakes 8-1 Service brake and parking brake and heavy vehicle emergency brake (cont.)

Modification and certification

24. Refer to heavy vehicle pages.

Reasons for rejection

22. A heavy PSV first registered in New Zealand **on or after 10 February 1978** has more than one air service brake circuit and there is no protection between those circuits (**Note 3**).

Vacuum brake system

23. On a heavy PSV with more than nine seating positions that uses vacuum to boost the force supplied by the driver to apply the brakes and is fitted with a vacuum reservoir:

a) The audible warning device does not give continuous signal at any time the vacuum in the vehicle's reservoir has less than 25 kilopascals or its equivalent (200 mm mercury), or

b) The vacuum gauge does not indicate to the driver at all times the vacuum in kilopascals, or its equivalent, available in the reservoir.

Hydraulic brake system

24. The audible warning device and the visible warning lamp/suitable pressure gauge fitted to a heavy PSV first registered in New Zealand **on or after 1 September 1954** with brakes tht are operated by pump-generated hydraulic pressure:

    a) is not clearly visible to the driver (day and night) from the normal driving position, or

    b) does not operate correctly.

Modification and certification

25. Refer to heavy vehicle pages.

Table 8-1-8. Emergency brake Requirements for heavy PSVs

Vehicle with hydraulic service brake first registered 10 February 1978 to 31 October 1990	**All vehicles first registered in New Zealand on or after 1 November 1990 except those in the right hand column**	**Vehicles first registered in New Zealand 1 November 1990 to 31 December 1994, when the parking brake acts on the transmission, and brakes not modified since manufacture**
Full dual-circuit service brake[1], and a. one of those circuits activates the brake on all the front wheels and the other circuit activates the brake on all the rear wheels, or b. each circuit activates the brake on at least one-third of the wheels.[2]	Full dual-circuit service brake[1], and a. one of those circuits activates the brake on all the front wheels and the other circuit activates the brake on all the rear wheels, or b. each circuit activates the brake on at least one-third of the wheels.[2]	EITHER A full dual-circuit service brake[1], and a. one of those circuits activates the brake on all the front wheels and the other circuit activates the brake on all the rear wheels, or b. each circuit activates the brake on at least one-third of the wheels[2] OR A dual-line service brake that is fitted with a tandem/ dual master cylinder OR A single-line hydraulic service brake that is divided into two independent circuits through and excess flow-prevention valve, and the brake fluid reservoir is fitted with a low-level warning device.

[1] For a hydraulic system, this means a dual or tandem master cylinder.

[2] Both circuits acting together must activate the brake on all the wheels.

Note 1 A vehicle may be fitted with more than one gauge, but only one gauge that indicates the pressure in one service brake reservoir is necessary. A gauge fitted to a supply reservoir (wet tank) cannot be used to indicate the pressure in a service brake reservoir.

Note 2 Where the minimum safe operating pressure is not specified by the vehicle or brake manufacturer, the minimum safe operating pressure is taken as 50% of the correctly adjusted cut-out pressure for the compressor-governor.

Note 3 Protection, in this case, means a system to prevent a brake failure that lowers the pressure in one service brake circuit below the minimum safe operating pressure from lowering the pressure in any other service brake circuits below the minimum safe operating pressure.

Note 4 A supply reservoir (wet tank) is a brake reservoir from which the service brake reservoirs receive compressed air.

Heavy PSV

Brakes 8-2 Heavy vehicle brake code

Summary of legislation

Applicable legislation

- Land Transport Rule: Heavy-vehicle Brakes 2006, including:
- Heavy Vehicle Brake Code, first edition (1991)
- Heavy Vehicle Brake Code, second edition (June 1997)

Mandatory requirement

1. A vehicle that has been certified to the Heavy Vehicle Brake Code (first edition) **prior to 31 August 1997** must have a label affixed to the vehicle, adjacent to the vehicle manufacturer's identification plate stating that the vehicle complies with "NZHVBC, dated 1991"
2. A vehicle that has been certified to the Heavy Vehicle Brake Code (second edition) **on or after 31 August 1997** and **before 1 July 2008** must have a label of permanent material affixed to the vehicle, as close as practicable to the vehicle manufacturer's identification plate. The label must include the words "NZHVBC Edition No. 2".

Mandatory equipment

Service brake

3. Refer to heavy vehicles section 8-1.

Parking brake

4. A vehicle must have a parking brake.
5. A vehicle that was first registered in New Zealand **on or after 1 November 1990** must have a park brake that acts on at least half of the wheels.

   Note Spring brakes are the preferred type of park brake.

6. A parking brake must be able to be applied by the driver from the normal driving position.

Emergency brake

7. A vehicle must have an emergency brake which may be combined with the parking brake or the service brake.
8. A vehicle that was first registered in New Zealand **on or after 1 November 1990** must have an emergency brake that acts on at least half of the wheels.
9. The emergency brake must be operable from the driving seat while keeping at least one hand on the steering control.

Hoses or other flexible tubing

10. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

11. Refer to heavy vehicles, section 8-1.
12. The service brake air system of vehicles first registered in New Zealand **on or after 1 November 1990** must have at least two completely independent brake

Reasons for rejection

Mandatory requirement

1. A vehicle that has been certified to the Heavy Vehicle Brake Code does not have a label stating that the vehicle complies with either NZHVBC first or second edition.
2. An NZHVBC label:
   a) is missing, or
   b) is illegible, or
   c) does not match the vehicle, or
   d) has obvious signs of tampering, or
   e) is not affixed as close as practicable to the vehicle manufacturer's identification plate.

Mandatory equipment

Service brake

3. Refer to heavy vehicles, section 8-1.

Parking brake

4. A heavy vehicle does not have a parking brake.
5. A vehicle that was first registered in New Zealand **on or after 1 November 1990** does not have a park brake that acts on at least half of the wheels.

Emergency brake

6. A vehicle does not have an emergency brake combined with either:
   a) the parking brake, or
   b) the service brake.
7. A vehicle that was first registered in New Zealand **on or after 1 November 1990** does not have an emergency brake that acts on at least half of the wheels.
8. The emergency brake is not operable from the driving seat while keeping at least one hand on the steering control.

Hoses or other flexible tubing

9. Refer to heavy vehicles, section 8-1.

Brakes 8-2 Heavy vehicle brake code (cont.)

actuating circuits, each with its own air reservoir.

13. Gauges must be fitted to indicate to the driver the pressure in each independent service brake air reservoir and be visible to the driver from the normal driving position
14. Every vehicle equipped with compressed air operated service brakes and where the prescribed emergency braking performance cannot be achieved without the use of the compressed air, the air reservoirs must be equipped with a low pressure alarm device. The low pressure alarm may be rendered inoperative while the parking brake is applied and the selector is in the park position in vehicles fitted with an automatic transmission.
15. The service brake system of the towing vehicle must incorporate a tractor protection valve to preserve the integrity of the brake system should the trailer's brake system fail.
16. A pressure test connection must be fitted to the air inlet of the least favourably placed brake chamber (or pneumatic device in the case of part pneumatic brake systems) on each independent circuit of the braking system.
17. Air connections between all towing vehicles and trailers must be of the two line system using a one piece coupling, eg a duomatic coupling, or when an auxiliary air supply (separate from the braking system) is required for a trailer, a triomatic coupling .
18. The coupling housing (eg duomatic or triomatic) must be situated close to the centre line, preferably to the right hand side (ie driver's side) of centre.
19. The control (service) and supply (emergency) air lines must be installed so that when facing the cover of the female section of the coupling housing:
    a) the control (service) line must be on the left side of the housing, and coloured blue or black within 150 mm of the coupling or junction, and
    b) the supply (emergency) line must be on the right side of the housing, and coloured red or yellow within 150 mm of the coupling or junction.
20. Each reservoir in an air brake system must be fitted with a condensate drain valve at the lowest point.
21. Where an automatic condensate valve is fitted, it must have a provision for manual operation.

Permitted equipment

22. Refer to heavy vehicles, section 8-1.
23. A vehicle may be fitted with additional manually operated push/pull valves that are used to apply the park brakes on the towing vehicle or trailer separately provided these valves are adequately guarded to prevent accidental operation during an emergency.
24. A vehicle may be fitted with an additional manually operated push/pull valve that is used to apply the combination's park brakes provided it is coloured yellow.

Reasons for rejection

Compressed air brake systems

10. Refer to heavy vehicles, section 8-1.
11. The vehicle is not fitted with air pressure gauges which indicate the pressure in each independent service brake air reservoir.
12. A vehicle equipped with compressed air operated service brakes is not equipped with an audible low pressure warning device.
13. A vehicle does not have a tractor protection valve.
14. Air connections between all towing vehicles and trailers are not of the two line system using a one piece coupling, eg:
    a) a duomatic coupling, or
    b) a triomatic coupling where an auxiliary air supply (separate from the braking system) is required for a trailer.
15. The coupling housing (eg duomatic or triomatic) is not situated close to the centre line (preferably to the right hand side of the centre, ie driver's side).
16. The air lines are not installed so that when facing the cover of the female section of the coupling housing:
    a) the control (service) line is not on the left side of the housing, and coloured blue or black within 150 mm of the coupling or junction, and
    b) the supply (emergency) line is not on the right side of the housing, and coloured red or yellow within 150 mm of the coupling or junction.
17. A service brake or parking brake reservoir, including any wet tank in an air brake system:
    a) is not fitted with a condensate drain valve at the lowest point, or
    b) is fitted with an automatic condensate valve that does not have provision for manual operation.

    Note Operation of drain valves must not require the use of tools.

Permitted equipment

18. Refer to heavy vehicles, section 8-1.
19. A manually operated push/pull valve that is used to

Prohibited equipment

24. Refer to heavy vehicles, section 8-1.

Condition

25. Refer to heavy vehicles, section 8-1.

26. Brake linings or brake pads must be replaced as axle sets.

Performance

27. Refer to heavy vehicles, section 8-1.

Service brake

28. Refer to heavy vehicles, section 8-1.

Parking brake

29. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

30. Refer to heavy vehicles, section 8-1.

31. A low pressure alarm device must sound loudly when the brake air reservoir pressures fall below the minimum safe operating pressure recommended by the manufacturer.

32. The low pressure alarm may be rendered inoperative while:

    a) the park brake is applied, and

    b) the selector is in the park position in vehicles fitted with an automatic transmission.

33. The brake systems must not compound their individual brake forces.

Modification and certification

34. Refer to heavy vehicles, section 8-1.

Reasons for rejection

apply the park brakes on the towing vehicle or trailer separately is not adequately guarded to prevent accidental operation during an emergency.

20. A manually operated push/pull valve that is used to apply the combination's park brakes is not coloured yellow.

Prohibited equipment

21. Refer to heavy vehicles, section 8-1.

Condition

22. Refer to heavy vehicles, section 8-1.

23. A brake lining or brake pad:

    a) has been replaced without all the linings or pads on the axle being replaced at the same time, or

    b) does not comply with the NZHVBC (**Note 1**)

24. A service brake reservoir air pressure gauge is not readily visible to the driver (day and night) from the driver's normal driving position.

Performance

Service brake

25. Refer to heavy vehicles, section 8-1.

Parking brake

26. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

27. Refer to heavy vehicles, section 8-1.

28. An air pressure gauge does not operate correctly.

29. A low pressure warning device does not give a continuous audible signal that clearly indicates to the driver when the pressure in any of the service brake circuits is below the minimum safe operating pressure recommended by the manufacturer unless the park brake is fully applied and the automatic transmission is in the 'park' position.

30. A tractor protection valve does not operate.

31. A drain valve is not able to be operated manually.

    Note Operation of drain valves must not require the use of tools.

Reasons for rejection

32. The individual brake forces of the service brake and spring parking brake are able to be compounded.

Modification and certification (Note 1)

33. Refer to heavy vehicles, section 8-1.

Note 1 If there is reason to believe that a component does not meet the requirements of the NZHVBC then the vehicle inspector must require the brake maintenance records to be produced.

Brakes 8-3 Interim heavy vehicle braking specification

Summary of legislation

Applicable legislation

- Land Transport Rule: Heavy-vehicle Brakes 2006
- Heavy Motor Vehicle Regulations 1974, Reg. 16A
- Interim Heavy Vehicle Braking Specification (6 December 1988)

Mandatory equipment

Service brake

1. Refer to heavy vehicles, section 8-1.
2. The service brake must operate on each axle.

Parking brake

3. Refer to heavy vehicles, section 8-1.
4. The park brake must act on at least half of the axles on each vehicle.

Emergency brake

5. The vehicle must have an emergency brake system, which is substantially independent of the service braking system.
6. The emergency brake must:
   a) act on at least half of the axles on each vehicle, and
   b) be operable from one control within easy reach of the driver in his normal seating position.

Hoses and other flexible tubing

7. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

8. Refer to heavy vehicles, section 8-1.
9. Air connections between the towing and towed vehicles must be of the two-line type (excluding auxiliaries).
10. Air connections between the towing and towed vehicles that are physically capable of being incorrectly connected shall be colour-coded as follows:
    a) the control (service) line must be coloured yellow, green or blue, and
    b) the supply (emergency) line must be coloured red.
11. The couplings used for the air connections between the towing and towed vehicles must:
    a) be mounted on the longitudinal centre-line of the vehicle, or as close to it on the right-hand side, and
    b) have the control (service) line to the left of the vehicle, ie the curb side, and
    c) have the supply (emergency) line to the right of the vehicle, ie the driver's side.

Reasons for rejection

Mandatory requirement

Service brake

1. Refer to heavy vehicles, section 8-1.
2. The service brake does not act on each axle.

Parking brake

3. Refer to heavy vehicles, section 8-1.
4. The parking brake does not act on at least half of the vehicle's axles.

Emergency brake

5. The vehicle does not have an emergency brake.
6. The emergency brake:
   a) does not act on at least half of the vehicle's axles, or
   b) is not operable from one control within easy reach of the driver in his normal seating position.

Hoses and other flexible tubing

7. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

8. Refer to heavy vehicles, section 8-1.
9. Air connections between the towing and towed vehicles are not of the two-line type (excluding auxiliaries).
10. Air connections between the towing and towed vehicles that are physically capable of being incorrectly connected are not colour-coded, ie:
    a) the control (service) line is not coloured yellow, green or blue, or
    b) the supply (emergency) line is not coloured red.
11. The couplings used for the air connections between the towing and towed vehicles:
    a) are not mounted on the longitudinal centre-line of the vehicle, or as close to it on the right-hand side, or
    b) do not have the control (service) line to the left of the vehicle, ie the curb side, or

Brakes 8-3 Interim heavy vehicle braking specification (cont.)

Permitted equipment

12. Refer to heavy vehicles, section 8-1.

Prohibited equipment

13. Refer to heavy vehicles, section 8-1.

Condition

14. Refer to heavy vehicles, section 8-1.

Performance

Service brake

15. Refer to heavy vehicles, section 8-1.

Parking brake

16. Refer to heavy vehicles, section 8-1.

Emergency brake

17. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

18. Refer to heavy vehicles, section 8-1.

Modification and certification

19. Refer to heavy vehicles, section 8-1.

Reasons for rejection

c) do not have the supply (emergency) line to the right of the vehicle, ie the driver's side.

Permitted equipment

12. Refer to heavy vehicles, section 8-1.

Prohibited equipment

13. Refer to heavy vehicles, section 8-1.

Condition

14. Refer to heavy vehicles, section 8-1.

Performance

Service brake

15. Refer to heavy vehicles, section 8-1.

Parking brake

16. Refer to heavy vehicles, section 8-1.

Compressed air brake systems

17. Refer to heavy vehicles, section 8-1.

Modification and certification (Note 1)

18. Refer to heavy vehicles, section 8-1.

Note 1 If there is reason to believe that the vehicle has been modified since it was certified to the Interim Heavy Vehicle Braking Specification then the vehicle inspector must refer to the details shown on the vehicle's data sheet (form 4067A) issued at the time of certification.