



WELLINGTON, NEW ZEALAND

PURSUANT to Section 152 of the Land Transport Act 1998

I, MARK GOSCHE, Minister of Transport,

HEREBY make the following ordinary rule:

Land Transport Rule: Light-vehicle Brakes 2002

SIGNED AT Wellington

This *25th* day of *February* 2002

Mark Gosche

Minister of Transport

Land Transport Rule
Light-vehicle Brakes 2002
Rule 32014

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Land Transport Rule
Light-vehicle Brakes 2002

Rule 32014

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Objective of the rule

Land Transport Rule: Light-vehicle Brakes 2002 is one of a series of rules that sets safety requirements and standards for systems and components in vehicles operating in New Zealand. This rule specifies the types of brakes that must be fitted in most types of light vehicle, and the requirements for those brakes.

The rule applies to light motor vehicles and Class AA vehicles as well as to those light motor vehicles not included in the designated vehicle classes, such as tractors and forklifts, and applies throughout the on-road life of a vehicle. Performance requirements are specified for the various types of brake. These requirements consolidate, with some amendments, the relevant provisions of the *Traffic Regulations 1976* and the *Transport (Vehicle Standards) Regulations 1990*.

Approved vehicle standards apply to specified classes of vehicle only, from the dates set out in the rule. A choice of standards provides flexibility within agreed safety parameters. The version of a standard that applies to brakes is that applicable to the vehicle's date of manufacture, or a more recent version of the standard. The approved vehicle standards are 'incorporated by reference' in accordance with *section 165* of the *Land Transport Act 1998* so that they are effectively part of the rule.

This rule applies throughout the on-road life of a motor vehicle by specifying requirements for certification as a prerequisite to registration in New Zealand; repair; modification; in-service fitness and other aspects of continuing compliance. The rule is an essential element of the safety framework governing motor vehicles in New Zealand. It links with, and provides a means of assessment for, *Land Transport Rule: Vehicle Standards Compliance 2002*, which sets procedures and requirements for vehicle inspection and certification.

The rule states who is responsible for ensuring compliance with its requirements: operators, repairers, modifiers, vehicle inspectors and inspecting organisations,

manufacturers and retailers. This links the rule to relevant provisions of the *Land Transport (Offences and Penalties) Regulations 1999* (see in particular *regulation 3* in conjunction with *Schedule 1*).

Extent of consultation

The consultation process for the rule began formally in June 1998 with the circulation of the red draft rule to groups and individuals who had registered their interest in the rule. Thirteen submissions were received, and these were taken into account in preparing the yellow draft.

The availability of the yellow draft, 300 copies of which were sent out in October 1998, was publicised in metropolitan newspapers and selected regional newspapers, the *New Zealand Gazette* and industry publications. The draft rule was available on the Land Transport Safety Authority's (LTSA) website and was sent to transport authorities and to libraries overseas. Copies were also sent to those who had registered an interest in the rule and to those who had commented on the earlier draft.

The 55 submissions received on the yellow draft of the rule came from a variety of individuals and organisations, including vehicle-testing stations, horse-trailer manufacturers and boating organisations. Informal discussions were also held with various industry representatives on topics such as motorcycle brakes and boat-trailer brakes. The issues identified in the submissions were addressed in preparing a green draft of the rule, which was sent to a limited number of groups, including those who had made submissions on the yellow draft. Twenty-four submissions were received.

A final round of consultation was undertaken during July and August 2001 by way of the *Vehicle Safety Proposals Consultation Paper*, which the LTSA released on 28 June 2001 for public comment. There were two proposals in the paper that related to light-vehicle brakes. Seventy-two submissions were received on the proposal to require brake parts to meet a higher standard of fitness when a vehicle is

certified for entry into service. Seventy-nine submissions were received on the proposal to tighten requirements for the supply and use of replacement brake parts. A redrafted rule was released for final consultation on 29 June 2001. Twenty-eight submissions were received in response to the rule.

Issues identified in submissions were taken into account in redrafting this rule before it was submitted to Cabinet, and to the Minister of Transport for signature.

Part 1 Rule requirements

Section 1 Application

1.1 Title

This rule is *Land Transport Rule: Light-vehicle Brakes 2002*.

1.2 Scope of the rule

1.2(1) This rule applies to brakes on:

- (a) light motor vehicles; and
- (b) vehicles of Class AA in *Table A* in *Part 2*.

1.2(2) This rule specifies braking requirements:

- (a) with which a vehicle must comply so as to be operated on a road; and
- (b) that are, for the purposes of *Land Transport Rule: Vehicle Standards Compliance 2002*, the applicable requirements for brakes.

1.2(3) In this rule, every reference to a vehicle inspector or inspecting organisation is a reference to a certifier for the purposes of the *Land Transport (Offences and Penalties) Regulations 1999* and the *Land Transport (Certification and Other Fees) Regulations 1999*.

1.3 Date when rule comes into force

This rule comes into force on 1 April 2002.

1.4 Application of rule provisions

- 1.4(1) If there is a conflict between a provision of this rule and the corresponding provision of a document incorporated by reference in the rule, the provision of the rule applies.
- 1.4(2) If there is a conflict between a provision of this rule and a provision of *Land Transport Rule: Vehicle Standards Compliance 2002*, the provision of *Land Transport Rule: Vehicle Standards Compliance 2002* applies.

Section 2 Vehicle standards and other safety requirements

2.1 Application of requirements

- 2.1(1) A brake on a vehicle must:
- (a) comply with 2.2;
 - (b) be of a type in 2.3 or 2.4 as specified in *Table 2.1* or *Table 2.2*;
 - (c) comply with the requirements in 2.3 or 2.4, as applicable;
 - (d) if specified in *Table 2.3*, comply with an approved vehicle standard in 2.5.
- 2.1(2) The following vehicles must comply, as specified in *Table 2.4* and 3.1, with the requirements of the *Low Volume Vehicle Code* that are applicable at the date of certification or recertification of the vehicles as low volume vehicles:
- (a) scratch-built vehicles;

- (b) vehicles of Class MA modified so as to affect their braking performance on or after 1 January 1992;
- (c) vehicles of Classes MB, MC and NA modified so as to affect their braking performance on or after 1 January 1993;
- (d) vehicles of Group L, Class MD1 and Class MD2 modified so as to affect their braking performance on or after 1 March 1999.

Table 2.1 Brakes required on vehicles that are not of Class TA or Class TB

Class ¹	Service brake	Parking brake
AA, AB	Required: See 2.3(2) and 2.3(3)	Not required
LA, LB	Required: At least one brake acting on each wheel is required, see 2.3(4)	Not required
LC	Required: See 2.3(6); and, if first registered ² before 1 February 1977, see 2.3(8)(a)	Not required
LD	Required: See 2.3(5); and, if first registered ² before 1 February 1977, see 2.3(8)(a)	Not required
LE	Required: See 2.3(6); and, if first registered ² before 1 February 1977, see 2.3(8)(b)	Required: See 2.3(12) to 2.3(15)
MA, MB, MC, MD1, MD2, NA	Required: See 2.3(6); and, if first registered ² before 1 February 1977, see 2.3(8)(c)	Required: See 2.3(12) to 2.3(15)
Light motor vehicles not in Table A ³	Required: See 2.3(6)	Required: See 2.3(12) to 2.3(14)
	Forklifts: Required: See 2.3(9)	Required: See 2.3(16)
	Tractors: Required: See 2.3(6), 2.3(10) and 2.3(11)	Required: See 2.3(12) to 2.3(14)

Notes:

1. For a vehicle manufactured before 31 December 1918, see 2.3(7).
2. 'First registered' means first registered in any country. (See definition in *Part 2*).
3. For a vehicle propelled by steam power or fitted with self-laying tracks, see 2.3(17).

Table 2.2 Brakes required on Class TA and Class TB vehicles¹

Type of brake	Trailers of Class TA or Class TB with a laden weight of 2000 kg or less	Trailers of Class TB with a laden weight of more than 2000 kg but less than 2500 kg	Trailers of Class TB with a laden weight of 2500 kg or more
Service brake	Not required: See 2.4(6) if fitted	Required: May be either direct or indirect, see 2.4(3)	Required: Must be direct, see 2.4(5)(a)
Parking brake	Not required	Not required	Required: See 2.4(5)(c)
Breakaway brake	Not required	Not required	Required: See 2.4(5)(b)
Two safety chains and appropriate coupling	Not required	Required: Unless fitted with a breakaway brake, see 2.4(4)	Not required

Note:

¹ For agricultural trailers, see 2.4(8) and 2.4(9)

Table 2.3 Brake requirements for vehicles that are not low volume vehicles

Class	Vehicle manufactured before 1 January 1992	Vehicle manufactured on or after 1 January 1992 and before 1 January 1996	Vehicle manufactured on or after 1 January 1996 and before 1 October 2002	Vehicle manufactured on or after 1 October 2002
AA, AB, TA, TB	General safety requirements	General safety requirements	General safety requirements	General safety requirements
LA, LB, LC, LD, LE, MD1, MD2	General safety requirements	General safety requirements	General safety requirements	General safety requirements and an approved vehicle standard
MA	General safety requirements	General safety requirements and an approved vehicle standard	General safety requirements and an approved vehicle standard	General safety requirements and an approved vehicle standard
MB, MC, NA	General safety requirements	General safety requirements	General safety requirements and an approved vehicle standard	General safety requirements and an approved vehicle standard
Light motor vehicles not in Table A	General safety requirements	General safety requirements	General safety requirements	General safety requirements

Table 2.4 Requirements for low volume vehicles¹

Class	Light motor vehicle last modified on or after 1 January 1992 and certified as a low volume vehicle
Low volume vehicle²	General safety requirements and <i>Low Volume Vehicle Code</i>

Notes:

¹ The concept of low volume vehicles and hence certification for such vehicles, was not initiated until after 1991. A motor vehicle last modified before 1 January 1992 does not have to comply with the *Low Volume Vehicle Code*, provided the vehicle has been continuously registered in New Zealand. It must, however, comply with the general safety requirements in 2.2.

² See 2.1(2).

2.2 General safety requirements

- 2.2(1) A service brake must be able to be applied in a controlled and progressive manner.
- 2.2(2) A brake must be easily adjustable to compensate for wear and must be maintained in good condition and efficient working order.
- 2.2(3) The friction surfaces of a brake must be within safe tolerance of their state when manufactured and must not be scored, damaged or weakened to the extent that the safety performance of the brake is adversely affected.
- 2.2(4) The ovality and diameter of a brake drum must be within the service limits set by the vehicle manufacturer or the brake manufacturer.
- 2.2(5) The runout and thickness of a brake disc must be within the service limits set by the vehicle manufacturer or the brake manufacturer, and if these are not known, the thickness must not be less than 90% of the original thickness.
- 2.2(6) An engine brake or a driveline retarder, if fitted in a vehicle, must be designed and constructed so that its use does not cause the drive axle wheels of the vehicle to lock.
- 2.2(7) A demonstration to determine whether a vehicle or a vehicle and its trailer complies with the requirements in 2.3 or 2.4, which relate to the capacity of a vehicle or a vehicle combination to stop within specified distances from specified speeds, must be carried out when the vehicle or the vehicle combination is operated:
- (a) on a hard, dry, level surface that is free of loose material; and

- (b) without assistance from the compression of the vehicle's engine or other retarders that are not part of the vehicle's service brake system.

2.2(8) When a vehicle's brake is applied:

- (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 braked wheel of the vehicle 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, the vehicle's wheels must not lock, other than when the speed of the vehicle falls below the anti-lock braking system activation parameters of the vehicle manufacturer.

2.2(9) Subject to 2.2(10), if a vehicle is fitted with a warning system that is part of, or associated with, the use of a brake component or system, that warning system must function correctly.

2.2(10) *Subclause 2.2(9)* does not apply to a brake pad wear-warning system if the brake pads fitted to the vehicle, although complying with an approved vehicle standard for brakes, cannot practically ensure correct functioning of the wear-warning system.

2.2(11) In assessing whether 2.2, 2.3 or 2.4 are complied with, a person in *section 4* may take into account:

- (a) evidence that the brake is within the vehicle or brake manufacturer's operating limits; and
- (b) if the vehicle is a low volume vehicle, evidence that the brake complies with the requirements of the

Low Volume Vehicle Code that are applicable to the date of certification or recertification of the vehicle as a low volume vehicle; and

- (c) a measurement calculated from a brake test made with a device approved under 4.6(1), and subject to any condition placed on the use of the device.

2.3 Types of brake

- 2.3(1) A vehicle that is not of Class TA or Class TB must have brakes as specified in *Table 2.1*.

Service brakes

- 2.3(2) A vehicle of Class AA or Class AB manufactured before 1 January 1988 must have at least one service brake acting on the rear wheel.
- 2.3(3) A vehicle of Class AA or Class AB manufactured on or after 1 January 1988 must have at least one service brake acting on each wheel.
- 2.3(4) A vehicle of Class LA or Class LB must have at least one service brake acting on each wheel.
- 2.3(5) Subject to 2.3(8)(a), a vehicle of Class LD must have a service brake acting on both wheels of the motorcycle.
- 2.3(6) A vehicle, except for one specified in 2.3(2) to 2.3(5), and 2.3(7) to 2.3(11), must have a service brake that:
 - (a) acts on each wheel; and
 - (b) is capable of stopping it within a distance of 7 m from a speed of 30 km/h.

2.3(7) A vehicle that was manufactured before 31 December 1918 and is not capable of exceeding a speed of 30 km/h under any condition of use, must have a service brake that:

- (a) is capable of stopping the vehicle within a distance of 20 m from a speed of 30 km/h; or
- (b) has a braking efficiency equivalent to that required in 2.3(7)(a).

2.3(8) Unless the vehicle is a towing vehicle and 2.4(7) applies, the service brake in the following vehicles must be capable of stopping the vehicle within a distance of 9 m from a speed of 30 km/h:

- (a) a vehicle of Class LC or Class LD first registered before 1 February 1977, designed with a service brake acting on the rear wheel only; and
- (b) a vehicle of Class LE first registered before 1 February 1977, designed with a service brake acting on less than three wheels; and
- (c) a vehicle of Class MA, MB, MC, MD1, MD2 or NA first registered before 1 February 1977, designed with a service brake acting on less than four wheels.

2.3(9) A forklift must have a service brake that is capable of stopping it within a distance of:

- (a) 10 m when fully laden, or 9 m when unladen, from a speed of 30 km/h; or
- (b) 6 m when fully laden, or 4 m when unladen, from a speed of 20 km/h, if the forklift has a maximum speed of less than 30 km/h; or

- (c) 6 m when fully laden, or 4 m when unladen, from the vehicle's maximum speed, if the forklift has a maximum speed of less than 20 km/h.

2.3(10) A tractor manufactured before 1 January 1990 must have a service brake provided by the manufacturer that is maintained at all times within safe tolerance of its state when manufactured.

2.3(11) A tractor manufactured on or after 1 January 1990 that has a maximum speed of less than 40 km/h must have a service brake that:

- (a) acts on the wheels that are intended to provide traction; and
- (b) is capable of stopping it within a distance of 7 m from a speed of 30 km/h; or
- (c) has a braking efficiency equivalent to that required in 2.3(11)(b), for a vehicle that is not capable of exceeding a speed of 30 km/h.

Parking brakes

2.3(12) *Subclauses 2.3(13) and 2.3(14) apply to:*

- (a) a vehicle of Class LE, MA, MB, MC, MD1, MD2 or NA including one that has been modified as in 2.1(2);
- (b) a motor vehicle not in *Table A*, except a forklift.

2.3(13) A vehicle in 2.3(12) must have a parking brake that:

- (a) acts on at least one complete axle; or
- (b) if the vehicle has dual wheels (also called twin wheels) on an axle, acts on that axle.

- 2.3(14) A parking brake on a vehicle in 2.3(12) must be capable of:
- (a) stopping the vehicle within a distance of 18 m from a speed of 30 km/h; or
 - (b) holding the vehicle at rest on a slope of 1 in 5.
- 2.3(15) If a vehicle in 2.3(12)(a) that was first registered in New Zealand on or after 1 November 1990 does not have a dual circuit service brake, it must have a parking brake that is capable of bringing the vehicle to a controlled stop if the service brake fails.
- 2.3(16) A forklift must have a parking brake that is capable of holding the forklift at rest when:
- (a) fully laden on a slope of 1 in 10; or
 - (b) unladen on a slope of 1 in 6.

Vehicles propelled by steam power or fitted with self-laying tracks

- 2.3(17) A vehicle propelled by steam power manufactured before 1 April 2002, or fitted with self-laying tracks, must be equipped with some means able to be activated by the driver that is adequate to:
- (a) control the vehicle's movement safely; and
 - (b) stop and hold the vehicle at rest under normal conditions of use.

2.4 Brakes on light trailers

- 2.4(1) A vehicle of Class TA or Class TB must have brakes as specified in *Table 2.2*.

- 2.4(2) Subject to 2.4(8), a vehicle of Class TB with a laden weight of more than 2000 kg must have a service brake that:
- (a) is of the type specified in 2.4(3) or 2.4(5); and
 - (b) acts on each wheel of at least one axle, and does not transfer the load to an unbraked axle during braking; and
 - (c) is, in conjunction with the towing vehicle's service brake, capable of stopping the combination of towing and towed vehicles within a distance of 7 m from a speed of 30 km/h.
- 2.4(3) A vehicle of Class TB with a laden weight of more than 2000 kg but less than 2500 kg must be fitted with either:
- (a) an indirect trailer service brake; or
 - (b) a direct trailer service brake.
- 2.4(4) A vehicle of Class TB with a laden weight of more than 2000 kg but less than 2500 kg must be fitted with either:
- (a) a coupling system that:
 - (i) has a manufacturer's load rating commensurate with the laden weight of the trailer; and
 - (ii) is equipped with two safety chains that conform to the technical requirements of *Australian Design Rule 62 Determination 2 of 1995, Mechanical Connections Between Vehicles*, and that cross each other when connected; or
 - (b) a breakaway brake.

- 2.4(5) A vehicle of Class TB with a laden weight of 2500 kg or more must be fitted with:
- (a) a direct trailer service brake; and
 - (b) a breakaway brake; and
 - (c) a parking brake, acting on at least one complete axle, that is capable of:
 - (i) stopping the vehicle within a distance of 18 m from a speed of 30 km/h; or
 - (ii) holding the vehicle at rest on a slope of 1 in 5.
- 2.4(6) A vehicle of Class TA or Class TB with a laden weight of 2000 kg or less is not required to be fitted with a brake, but if a service brake is fitted it must comply with 2.2 and must:
- (a) act on each wheel of at least one axle, and not transfer the load to an unbraked axle during braking; and
 - (b) in conjunction with the towing vehicle's service brake, be capable of stopping the combination of towing and towed vehicles within a distance of 7 m from a speed of 30 km/h.
- 2.4(7) If a vehicle of Class TA or Class TB is being towed, the brakes of the towing vehicle and of the trailer, if fitted, must, unless 2.3(10) applies, be capable of stopping the vehicle combination within a distance of 7 m from a speed of 30 km/h, without damage to, or permanent deformation of, either the coupling system or the structure of either vehicle.

Brakes on agricultural trailers

- 2.4(8) A vehicle of Class TB with a laden weight of more than 2000 kg that is used exclusively for agricultural or land management purposes may comply with 2.4(9) instead of 2.4(2), if it is not operated on a road except:
- (a) during delivery from a manufacturer to the manufacturer's representative; or
 - (b) while being delivered to or from an agricultural show for display or demonstration purposes; or
 - (c) while being taken to or from a farm, or from one part of a farm to another part of that farm.
- 2.4(9) A vehicle in 2.4(8) that does not comply with 2.4(2) must have a coupling system that has a manufacturer's load rating commensurate with the laden weight of the trailer, and that, including any drawpin:
- (a) is provided or approved by the manufacturer of an agricultural tractor, or approved by a vehicle inspector or inspecting organisation; and
 - (b) is equipped with two safety chains that conform to the technical requirements of *Australian Design Rule 62 Determination 2 of 1995, Mechanical Connections Between Vehicles*, and that cross each other when the trailer is connected.

2.5 Approved vehicle standards for brakes

- 2.5(1) A brake must comply, if specified in *Table 2.3*, with a version, as specified in 2.5(3), of an approved vehicle standard for brakes in 2.5(2).

2.5(2)

The approved vehicle standards for brakes are:

- (a) *Council Directive of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers (71/320/EEC);*
- (b) *Council Directive of 5 April 1993 on the braking of two or three-wheel motor vehicles (93/14/EEC);*
- (c) *UNECE Regulation No. 13, Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking (E/ECE324-E/ECE/TRANS/505/Rev.1/Add.12);*
- (d) *UNECE Regulation No. 13-H, Uniform provisions concerning the approval of passenger cars with regard to braking (E/ECE324-E/ECE/TRANS/505/Rev.2/Add.12H);*
- (e) *UNECE Regulation No. 78, Uniform provisions concerning the approval of vehicles of category L with regard to braking (E/ECE/324-E/ECE/TRANS/505/Rev.1/Add.77);*
- (f) *Federal Motor Vehicle Safety Standard No. 105, Hydraulic Brake Systems;*
- (g) *Federal Motor Vehicle Safety Standard No. 122, Motorcycle Brake Systems;*
- (h) *Federal Motor Vehicle Safety Standard No. 135, Passenger Car Brake Systems;*
- (i) *Australian Design Rule 31, Hydraulic Brake Systems for Passenger Cars;*
- (j) *Australian Design Rule 33, Brake Systems for Motorcycles and Mopeds;*

- (k) *Australian Design Rule 35, Commercial Vehicle Brake Systems*;
- (l) *Technical Standard for Passenger Motor Vehicle Braking Systems* (Japan);
- (m) *Technical Standard for Two Wheeled Vehicle Brake Systems* (Japan).

Version of vehicle standards for brakes

- 2.5(3) A brake must comply with the version of an approved vehicle standard that is:
- (a) applicable in the relevant standard-setting jurisdiction to the date of manufacture of the motor vehicle or as specified in the standard; or
 - (b) a more recent version of that standard if the safety performance of the vehicle is not adversely affected.

Approved vehicle standards for vacuum brake hoses

- 2.5(4) A vacuum brake hose must comply, as specified in 2.5(6), with a version of an approved vehicle standard in 2.5(5), or with the original equipment specifications of the vehicle manufacturer.
- 2.5(5) Approved vehicle standards for vacuum brake hoses are:
- (a) *Society of Automotive Engineers, SAE 40 R3L (light duty)*;
 - (b) *Society of Automotive Engineers, SAE 40 R3H (heavy duty)*;
 - (c) *Society of Automotive Engineers, SAE 40 M (heavy duty oil resistant)*;

- (d) *Society of Automotive Engineers, SAE J1403 (vacuum brake hose);*
- (e) *British Standard BSAU 109;*
- (f) *Federal Motor Vehicle Safety Standard No. 106, Brake Hoses;*
- (g) *Japan Industrial Standard D2607.*

Version of vehicle standards for vacuum brake hoses

2.5(6) A vacuum brake hose must comply with the version of an approved vehicle standard that is:

- (a) applicable in the relevant standard-setting jurisdiction to the date of manufacture of the vacuum brake hose or as specified in the standard; or
- (b) a more recent version of that standard if the safety performance of the motor vehicle is not adversely affected.

Approved vehicle standards include amendments to standards

2.5(7) An approved vehicle standard in 2.4(4), 2.4(9), 2.5(2), 2.5(5) and 3.3(3) includes all amendments to that standard, some of which may apply to classes of vehicle additional to those covered by the original standard.

Compliance with vehicle standards

2.5(8) A motor vehicle must comply with an approved vehicle standard in this rule unless:

- (a) that vehicle was manufactured before the phase-in date for the model, or model variant, of that vehicle

in the relevant standard-setting jurisdiction or as specified in the standard; or

- (b) the model, or model variant, of that vehicle is not required by the standard itself to comply fully with that standard.

2.5(9) A vehicle, its structure, systems, components or equipment comply for the purposes of this rule with an applicable approved vehicle standard if they:

- (a) complied with that standard when manufactured or modified; and
- (b) are currently within safe tolerance of the state of the vehicle, its structure, systems, components or equipment when manufactured or modified.

Section 3 Modification and repair

3.1 Modification

A modification to a brake or to a vehicle that affects its braking performance:

- (a) must not prevent the vehicle from complying with this rule; and
- (b) must, if the vehicle is a motor vehicle that is not of Class TA or Class TB, be certified as specified in *Land Transport Rule: Vehicle Standards Compliance 2002*.

3.2 Repair

A repair to a brake, or to a vehicle that affects its braking performance, must comply with this rule and with *Land Transport Rule: Vehicle Repair 1998*.

3.3 Replacement components for vehicle repair

3.3(1) *Subclauses 3.3(2) and 3.3(3) apply to any component that will affect the braking performance of a vehicle, and that is:*

- (a) manufactured, stocked or offered for sale in New Zealand; and
- (b) supplied for fitting to a vehicle to be operated on a New Zealand road.

3.3(2) A component used in a repair must not prevent a vehicle from complying with this rule.

3.3(3) A brake lining assembly used as a replacement component complies with this rule if it complies with *UN/ECE Regulation No. 90, Uniform Provisions concerning the approval of replacement brake lining assemblies for power-driven vehicles and their trailers (E/ECE/324-E/ECE/TRANS/505/Rev.1/Add.89)*.

Section 4 Responsibilities

4.1 Responsibilities of operators

A person who operates a vehicle must ensure that the vehicle complies with this rule.

4.2 Responsibilities of repairers

A person who repairs or adjusts a brake must ensure that the repair or adjustment:

- (a) does not prevent the vehicle from complying with this rule; and
- (b) complies with *Land Transport Rule: Vehicle Repair 1998*.

4.3 Responsibilities of modifiers

A person who modifies a vehicle so as to affect the braking performance of the vehicle, must:

- (a) ensure that the modification does not prevent the vehicle from complying with this rule; and
- (b) if the vehicle is a motor vehicle, notify the operator if the vehicle must be inspected and, if necessary, certified, because there is reason to believe it has been modified to become a low volume vehicle.

4.4 Responsibilities of vehicle inspectors and inspecting organisations

A vehicle inspector or inspecting organisation must not certify a motor vehicle under *Land Transport Rule: Vehicle Standards Compliance 2002* if they have reason to believe that the vehicle does not comply with this rule.

4.5 Responsibilities of manufacturers and retailers

A person may manufacture, stock, or offer for sale a brake or its components, intended for fitting to a vehicle to be

used on a New Zealand road, only if that brake or component:

- (a) complies with this rule; and
- (b) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this rule.

4.6 Functions and powers of the Director

4.6(1) The Director may, by notice in the *Gazette*, approve devices for the purpose of measuring brake performance and may place conditions on the use of those devices.

4.6(2) The Director may, by notice in the *Gazette*, specify a method, by which it can be determined that replacement brake friction material complies with this rule.

4.6(3) The Director may direct a person in 4.5 to recall a replacement component, if the Director has reason to believe that the component does not comply with this rule, and may direct that that person bear the costs associated with the recall.

[Note: A breach of a responsibility in this section is an offence, as provided in the *Land Transport (Offences and Penalties) Regulations 1999*, and is subject to a penalty as specified in those regulations.]

Part 2 Definitions

Agricultural	in relation to purposes or operations, means connected directly with the operation or management of a farm.
Approved vehicle standard	means a vehicle standard in 2.4(4), 2.4(9), 2.5(2), 2.5(5) and 3.3(3).
Axle	means a transverse shaft or housing on which a vehicle's wheels are mounted.
Brake	means a system to reduce the speed of a vehicle, to stop the vehicle or to keep the vehicle stationary.
Brake friction material	means a brake component having a friction surface that is designed to be preferentially sacrificed.
Breakaway brake	means a service brake or parking brake fitted to a trailer that ensures, under all conditions of use, that, if the trailer is unintentionally disconnected from its towing vehicle, the brake will automatically and immediately apply and will remain applied for at least 15 minutes.
Certify	has the same meaning as in <i>Land Transport Rule: Vehicle Standards Compliance 2002</i> .
Class	in relation to vehicles, means a category of vehicle of one of the Groups A, L, M, N and T, as specified in <i>Table A: Vehicle classes</i> .
Direct trailer service brake	means a service brake fitted to a trailer that allows the driver of a towing vehicle, from their driving position, to directly and progressively regulate the trailer brake effort.
Director	means the Director of Land Transport Safety appointed under <i>section 186</i> of the <i>Land Transport Act 1998</i> .

- EEC, EC** are abbreviations for directives of the European Economic Community and, later, the European Communities.
- Engine brake** is a modification to a diesel engine used to increase the retardation force provided by the engine on deceleration.
- Federal Motor Vehicle Safety Standard** is a vehicle standard of the United States of America.
- First registered** means first registered in any country.
- Forklift** means a motor vehicle (not fitted with self-laying tracks) designed principally for lifting, carrying and stacking goods by means of one or more tines, platens or clamps.
- Friction surface** means any surface of a brake component that is designed to convert kinetic energy to heat.
- Gross vehicle mass** means either:
- (a) the maximum permitted mass of a vehicle, which includes the mass of the accessories, the crew, the passengers and load, and is, unless (b) applies, the gross vehicle mass specified (subsequent to the latest modification, if any) by the manufacturer of the vehicle; or
 - (b) if a person approved for the purpose by the Director determines that the gross vehicle mass should differ from that specified by the manufacturer, taking into account evidence on the capability of the systems and components of the vehicle, or the effects of any modification, that mass determined by that person.
- Heavy motor vehicle** means a motor vehicle that is either:
- (a) of Class MD3, MD4, ME, NB, NC, TC or TD; or

- (b) a vehicle (not of a class specified in *Table A: Vehicle classes*) with a gross vehicle mass that exceeds 3500 kg.

Indirect trailer service brake

means a service brake fitted to a trailer where the action of the driver of a towing vehicle applying the brakes of that vehicle results in a reaction by the trailer that is used to progressively regulate the trailer brake effort.

Laden weight

means the weight of the vehicle and its load for the time being carried.

Light motor vehicle

means a motor vehicle of any class except one defined as a 'heavy motor vehicle'.

Low volume vehicle

means a motor vehicle of a class in *Table A: Vehicle classes*, other than Class MD3, MD4, ME, NB, NC, TC or TD, that is:

- (a) manufactured, assembled or scratch-built in quantities of 200 or less at any one location in any one year, by a manufacturer whose total production of motor vehicles does not exceed 200 units over the same period, and when the construction of the vehicle directly or indirectly affects compliance of the vehicle with any of the vehicle standards prescribed by New Zealand law; or
- (b) modified uniquely, or in quantities of 200 or less at any one location in any one year, in such a way as to affect the compliance of the vehicle, its structure, systems, components or equipment, with a legal requirement relating to safety performance applicable at the time of the modification.

Low Volume Vehicle Code

means the code of the Low Volume Vehicle Technical Association Incorporated.

Manufacturer's operating limits means:

- (a) in relation to a motor vehicle, the allowance provided by the vehicle manufacturer in terms of performance capability and dimensions, relative to deterioration, malfunction or damage beyond which the safe performance of the vehicle, as defined by the vehicle manufacturer, is compromised; and
- (b) in relation to a system, component or item of equipment, incorporated in or attached to a vehicle, the allowance provided by the system, component or equipment manufacturer in terms of performance capability and dimensions, relative to the deterioration, malfunction or damage, beyond which the safe performance of the system, component or item of equipment (and consequently the vehicle) is compromised.

Modify in relation to a vehicle, 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.

Motor vehicle means a vehicle drawn or propelled by mechanical power; and includes a trailer; but does not include:

- (a) a vehicle running on rails;
- (b) an invalid carriage;
- (c) a trailer (other than a trailer designed solely for the carriage of goods) that is designed and used exclusively as part of the armament of the New Zealand Defence Force;
- (d) a trailer running on one wheel and designed exclusively as a speed measuring device or for testing the wear of vehicle tyres;

- (e) a vehicle designed for amusement purposes and used exclusively within a place of recreation, amusement, or entertainment to which the public does not have access with motor vehicles;
- (f) a pedestrian-controlled machine.

Operate in relation to a vehicle, means to drive or use the vehicle on a road, or to cause or permit the vehicle to be on a road or to be driven on a road, whether or not the person is present with the vehicle.

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

Phase-in date means the date specified in an approved vehicle standard from which a model, or model variant, of a vehicle must comply with that standard or part of that standard.

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.

Safe tolerance means the tolerance within which the safe performance of the vehicle, its structure, systems, components or equipment is not compromised, having regard to any manufacturer's operating limits.

Scratch-built vehicle means a motor vehicle that is either:

- (a) assembled from previously unrelated components and construction materials that have not been predominantly sourced from donors of a single make or model and that, in its completed form, never previously existed as a mass-produced vehicle, although the external appearance may resemble or replicate an existing vehicle; or

- (b) a modified production vehicle that contains less than the following components from a mass-produced vehicle of a single make and model:
 - (i) 40% of the chassis rails and 50% of the crossmembers, or alternatively 40% of a spaceframe, or 40% of the floorpan of a unitary constructed body, whichever is appropriate; or
 - (ii) for light vehicles, 40% of the bodywork (based on the surface area of body panels but not including the floorpan, internal bracing, subpanels, bulkheads or firewall).

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

Technical standard

means a Japanese domestic vehicle standard issued by the Japanese Ministry of Land, Infrastructure and Transport and translated into, and published in, English by the Japan Automobile Standards Internationalization Center (JASIC) in the *Automobile Type Approval Handbook for Japanese Certification*.

Tractor means a motor vehicle designed principally for traction at speeds not exceeding 50 km/h except for a motor vehicle fitted with self-laying tracks or a traction engine.

UN/ECE is an abbreviation for a regulation of the United Nations Economic Commission for Europe.

Vehicle means a contrivance equipped with wheels, tracks or revolving runners upon which it moves or is moved; and includes a hovercraft, a skateboard, in-line skates, and roller skates; but does not include:

- (a) a perambulator or pushchair;
- (b) a shopping or sporting trundler not propelled by mechanical power;

- (c) a wheelbarrow or hand-trolley;
- (d) a child's toy, including a tricycle and a bicycle, provided, in either case, no road wheel (including any tyre) has a diameter exceeding 355 mm;
- (e) a pedestrian-controlled lawnmower;
- (f) a pedestrian-controlled agricultural machine not propelled by mechanical power;
- (g) an article of furniture;
- (h) an invalid wheelchair not propelled by mechanical power;
- (i) any other contrivance specified by any other rule not to be a vehicle for the purposes of this definition.

**Vehicle inspector
or inspecting
organisation**

has the same meaning as in *Land Transport Rule: Vehicle Standards Compliance 2002*.

**Vehicle
standard**

means a technical specification with which a motor vehicle, its structure, systems, components or equipment must comply, and which is adopted by:

- (a) the New Zealand Standards Council; or
- (b) any international, national or regional organisation with functions similar to the New Zealand Standards Council.

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.

Table A **Vehicle classes**

Class	Description
AA (Pedal cycle)	A vehicle designed to be propelled through a mechanism solely by human power.
AB (Power-assisted pedal cycle)	A pedal cycle to which is attached one or more auxiliary propulsion motors having a combined maximum power output not exceeding 200 watts.
LA (Moped with two wheels)	A motor vehicle (other than a power-assisted pedal cycle) that: (a) has two wheels; and (b) either: (i) has an engine cylinder capacity not exceeding 50 ml and a maximum speed not exceeding 50 km/h; or (ii) has a power source other than a piston engine and a maximum speed not exceeding 50 km/h.
LB (Moped with three wheels)	A motor vehicle (other than a power-assisted pedal cycle) that: (a) has three wheels; and (b) either: (i) has an engine cylinder capacity not exceeding 50 ml and a maximum speed not exceeding 50 km/h; or (ii) has a power source other than a piston engine and a maximum speed not exceeding 50 km/h.
LB 1	A Class LB motor vehicle that has one wheel at the front and two wheels at the rear.
LB 2	A Class LB motor vehicle that has two wheels at the front and one wheel at the rear.
LC (Motor cycle)	A motor vehicle that: (a) has two wheels; and (b) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.

Table A Vehicle classes (continued)

Class	Description
LD (Motor cycle and side-car)	A motor vehicle that: (a) has three wheels asymmetrically arranged in relation to the longitudinal median axis; and (b) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.
Side-car	A car, box, or other receptacle attached to the side of a motor cycle and supported by a wheel.
LE (Motor tri-cycle)	A motor vehicle that: (a) has three wheels symmetrically arranged in relation to the longitudinal median axis; and (b) has a gross vehicle mass not exceeding one tonne; and (c) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.
LE 1	A Class LE motor vehicle that has one wheel at the front and two wheels at the rear.
LE 2	A Class LE motor vehicle that has two wheels at the front and one wheel at the rear.
Passenger vehicle	A motor vehicle that: (a) is constructed primarily for the carriage of passengers; and (b) either: (i) has at least four wheels; or (ii) has three wheels and a gross vehicle mass exceeding one tonne.
MA (Passenger car)	A passenger vehicle (other than a Class MB or Class MC vehicle) that has not more than nine seating positions (including the driver's seating position).

Table A Vehicle classes (continued)

Class	Description
MB (Forward control passenger vehicle)	A passenger vehicle (other than a Class MC vehicle): (a) that has not more than nine seating positions (including the driver's seating position); and (b) in which the centre of the steering wheel is in the forward quarter of the vehicle's total length.
MC (Off-road passenger vehicle)	A passenger vehicle, designed with special features for off-road operation, that has not more than nine seating positions (including the driver's seating position), and that: (a) has four-wheel drive; and (b) has at least four of the following characteristics when the vehicle is unladen on a level surface and the front wheels are parallel to the vehicle's longitudinal centre-line and the tyres are inflated to the vehicle manufacturer's recommended pressure: (i) an approach angle of not less than 28 degrees; (ii) a breakover angle of not less than 14 degrees; (iii) a departure angle of not less than 20 degrees; (iv) a running clearance of not less than 200 mm; (v) a front-axle clearance, rear-axle clearance, or suspension clearance of not less than 175 mm.
Omnibus	A passenger vehicle that has more than nine seating positions (including the driver's seating position). An omnibus comprising two or more non-separable but articulated units shall be considered as a single vehicle.
MD (Light omnibus)	An omnibus that has a gross vehicle mass not exceeding 5 tonnes.
MD 1	An omnibus that has a gross vehicle mass not exceeding 3.5 tonnes and not more than 12 seats.
MD 2	An omnibus that has a gross vehicle mass not exceeding 3.5 tonnes and more than 12 seats.
MD 3	An omnibus that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 4.5 tonnes.
MD 4	An omnibus that has a gross vehicle mass exceeding 4.5 tonnes but not exceeding 5 tonnes.

Table A Vehicle classes (continued)

Class	Description
ME (Heavy omnibus)	An omnibus that has a gross vehicle mass exceeding 5 tonnes.
Goods vehicle	<p>A motor vehicle that:</p> <ul style="list-style-type: none"> (a) is constructed primarily for the carriage of goods; and (b) either: <ul style="list-style-type: none"> (i) has at least four wheels; or (ii) has three wheels and a gross vehicle mass exceeding one tonne. <p>For the purpose of this description:</p> <ul style="list-style-type: none"> (a) a vehicle that is constructed for both the carriage of goods and passengers shall be considered primarily for the carriage of goods if the number of seating positions multiplied by 68 kg is less than 50% of the difference between the gross vehicle mass and the unladen mass; (b) the equipment and installations carried on special purpose vehicles not designed for the carriage of passengers shall be considered to be goods; (c) a goods vehicle that has two or more non-separable but articulated units shall be considered to be a single vehicle.
NA (Light goods vehicle)	A goods vehicle that has a gross vehicle mass not exceeding 3.5 tonnes.
NB (Medium goods vehicle)	A goods vehicle that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 12 tonnes.
NC (Heavy goods vehicle)	A goods vehicle that has a gross vehicle mass exceeding 12 tonnes.

Table A Vehicle classes (continued)

Class	Description
Trailer	A vehicle without motive power that is constructed for the purpose of being drawn behind a motor vehicle.
TA (Very light trailer)	A single-axled trailer that has a gross vehicle mass not exceeding 0.75 tonnes.
TB (Light trailer)	A trailer (other than a Class TA trailer) that has a gross vehicle mass not exceeding 3.5 tonnes.
TC (Medium trailer)	A trailer that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 10 tonnes.
TD (Heavy trailer)	A trailer that has a gross vehicle mass exceeding 10 tonnes.