

Correct as at 5th June 2026. It may be superseded at any time.

Extract taken from: In-service certification (WoF and CoF) > Motorcycles > Tyres, wheels and hubs

## 10 Tyres, wheels and hubs

### 10-1 Tyres and wheels

#### Reasons for rejection

##### Mandatory equipment

##### Tyres

1. Tyres on the same axle are not of the same:

- a) size designation, or
- b) carcass type (ie mixed steel ply, fabric radial ply, bias/cross ply), or
- c) tread pattern type (mixed asymmetric, directional, normal highway, traction).

2. An asymmetric tyre is fitted to a vehicle with the 'inside' tyre wall facing outwards.

3. A unidirectional tyre is fitted contrary to its correct direction of rotation.

4. A tyre has a speed category that is less than the speed limit for the vehicle or less than the vehicle's maximum speed if this is less than the speed limit (Note 3).

5. The vehicle has one or more of the following types of tyre fitted:

- a) a space-saver tyre, or
- b) a non-pneumatic tyre, or
- c) a tyre with studs, cleats, lugs or other gripping devices, or
- d) a tyre that is not compatible with the vehicle to which it is fitted, eg a tyre is marked with any of the following:
  - i. 'NOT FOR HIGHWAY USE'
  - ii. 'NHS' (Not for Highway Service)
  - iii. 'FOR TRAILER USE ONLY'
  - iv. 'ADV' (Agricultural Drawn Vehicle)
  - v. 'RACING PURPOSES ONLY'.

e) a tyre that is not suitable for a motorcycle, eg a car tyre fitted to a class LC motorcycle (Note 4) .

**6. A tyre has had any of the following information removed or concealed so that the tyre can no longer be identified (Figure 10-1-3):**

- manufacturer
- brand
- model
- load rating
- speed rating
- standards markings (where applicable)
- direction of rotation (where applicable).

## Wheels

7. A wheel is not compatible with the tyre fitted to it for rim profile, flange height, or valve fitment.
8. A wheel is:
- a) not compatible with the vehicle to which it is fitted. or
  - b) not correctly attached to the vehicle.

## Condition

### Tyres (excluding spare tyres and space-saver tyres)

9. There are signs that a tyre is fouling on another part of the vehicle.
10. A tyre shows damage that it is likely to compromise its ability to operate in a safe manner or lead to premature tyre failure, such as:
- a) a lump or bulge that is likely to be caused by separation or partial failure of the tyre structure, or
  - b) a cut in a sidewall or tread more than 25mm long that reaches the cords, or
  - c) exposed or cut cords, or
  - d) the tread of a retreaded tyre shows signs of separation, or
  - e) nails or other sharp objects embedded in the tyre, or
  - f) significant perishing, eg due to age, moisture or exposure.
11. A tyre has a string type repair visible from the outside.
12. A tyre fitted to a vehicle capable of exceeding 30km/h does not have a tread pattern depth ([Technical bulletin 7](#)) of at least 1.5mm (excluding any tie-bar or tread depth indicator strip) around the whole circumference of the tyre:
- a) within all the principal grooves that normally contain moulded tread depth indicators, or
  - b) if the tyre does not normally have moulded tread depth indicators (such as some retreaded or vintage tyres), across at least three-quarters of the tread width.
13. A tyre not identified as designed for re-grooving has had its tread depth increased by regrooving.
14. A tyre is noticeably under- or over-inflated.

### Spare tyres

15. A spare tyre, if carried, is not:
- a) securley attached by a device that is in good condition and correctly applied, or

b) stowed in a closed compartment separate from the occupant space (eg if the manufacturer's attachment device is missing or faulty) .

## **Wheels**

16. There are signs that a wheel is fouling on another part of the vehicle.

17. A wheel is:

- a) cracked, or
- b) significantly damaged, distorted or has deteriorated, or
- c) not securely attached to the hub.

18. An alloy wheel has poor visible repairs.

19. A wheel or axle nut:

- a) is missing, or
- b) is loose, or
- c) is deteriorated, or
- d) is of the incorrect type, or
- e) has insufficient thread engagement to the wheel stud , or
- f) is an aftermarket wheel nut made from aluminium .

## **Modifications**

20. A modification affects the wheels or tyres, and:

- a) is not excluded from the requirements for LVV specialist certification (Table 10-1-1), and
- b) is missing proof of LVV specialist or accepted overseas certification, ie:
  - i. the vehicle is not fitted with a valid LVV certification plate, or
  - ii. the operator is not able to produce a valid modification declaration or authority card, or
  - iii. the vehicle has not been certified to an accepted overseas system as described in [Technical bulletin 13](#).

## **Note 1**

Tread pattern and tread depth requirements do not apply to vehicles that are not capable of exceeding 30 km/h.

## **Note 2 Definitions**

**Asymmetric tyre:** tyre which, through tread pattern, is required to be fitted to a vehicle so that one particular side-wall faces outwards.

**Construction** *in relation to a tyre:*

- a) for a pneumatic tyre, the type of tyre carcass (including ply orientation and ply rating or load index), or
- b) for any other tyre, characteristics relating to size, shape and material.

**Cross-ply:** a pneumatic tyre structure in which the ply cords in the tyre carcass extend to the beads and are laid at alternate angles, which are substantially less than 90 degrees, to the centreline of the tread. This tyre structure is also referred to as 'bias ply' or 'diagonal ply'.

**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.

**Pneumatic tyre** means a tyre that, when in use, is inflated by air or gas introduced from time to time under pressure so as to enclose under normal inflation, a cushion of air or gas forming altogether at least half of the total area of an average cross-section of a tyre so inflated.

**Principal grooves** means the wide grooves in the tyre tread which have the tread wear indicators located inside them. Any other grooves are secondary grooves which may wear out during the service life of the tyre.

**Radial-ply** means a pneumatic tyre structure in which the ply cords, which extend from bead to bead, are laid at approximately 90 degrees to the centreline of the tread, the carcass being stabilised by an essentially inextensible circumferential belt.

**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.

**Rim** means that part of the wheel on which the tyre is mounted and supported.

**Space saver tyre (temporary-use spare tyre)** means a combination tyre and wheel designed and constructed solely for temporary use under restricted driving conditions, and not intended for use under normal driving conditions.

**Speed category** means a code allocated to a tyre by a tyre manufacturer that indicates the maximum vehicle speed for which the use of the tyre is rated.

**Tread** means that part of a pneumatic tyre which comes into contact with the ground.

**Tread-depth indicator (or tread-wear indicator)** means the projections within the principal grooves designed to give a visual indication of the degree of wear of the tread. To help locate these on a tyre, inspectors should look for a 'Content not available' or 'TWI' mark on the outer edge of the tyre side wall (most tyres have these marks).

**Tube** means an inflatable elastic liner, in the form of a hollow ring fitted with an inflation valve assembly, designed for insertion into certain tyre assemblies to provide a cushion of air or gas, that, when inflated, supports the wheel (also known as an 'inner tube').

**Tyre carcass** means that structural part of a pneumatic tyre other than the tread and outermost rubber of the side-walls that, when inflated, contains the gas that supports the load.

**Tyre load rating** means the maximum load a tyre can carry at the corresponding cold inflation pressure prescribed by the tyre manufacturer and the speed indicated by its speed category symbol.

**Unidirectional tyre** means a tyre with a tread pattern designed to operate in one direction only.

**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, and which may be manufactured as one part, or permanently attached to each other, or detachable from each other.

**Wheel centre-disc** means that part of the wheel that is the supporting member between the hub and the rim.

**Wheel spacer** means an additional component used for the purpose of positioning the wheel centre-disc relative to the hub or, in multiple wheel sets, for the purpose of positioning the wheel centre-disc relative to another wheel.

### Note 3

The speed category is usually marked on the tyre. Where the tyre is not marked, the speed rating information must be obtained from the tyre manufacturer or a reference guide of tyre ratings before the tyre can be passed.

### Note 4

1. In the case of a motorcycle with a dedicated sidecar the rear tyre of the motorcycle and the tyre of the sidecar may have a car tyre fitted providing that:

- The tyre is an appropriate size for the wheel rim
- The tyre is not an asymmetrical tread pattern
- The tyre is an appropriate fitment and design for the wheel rim
- The tyre has an appropriate load and speed rating for the vehicle
- When the sidecar is removed the rear tyre of the motorcycle must be fitted with an appropriate motorcycle tyre.

2. A low volume vehicle of class LC which was certified **before 1/11/2015** may be fitted with a car tyre if listed on its LVV certification plate.

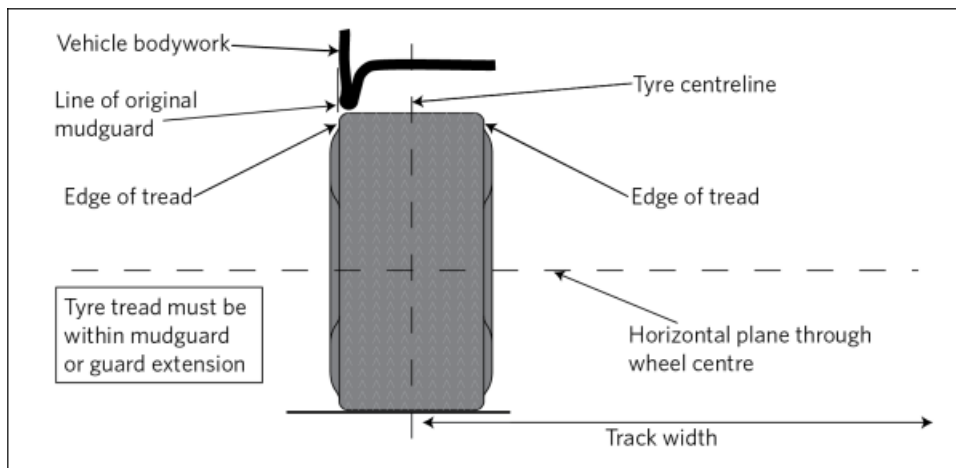
**Table 10-1-1. Modifications that do not require LVV certification**

Fitting of or modification to:	LVV certification is not required provided that:	
Aftermarket wheel fitments	<ul style="list-style-type: none"> <li>• the wheels:                             <ul style="list-style-type: none"> <li>– are a non-OE item of known and reputable brand, and</li> <li>– would be considered an appropriate fitment for the vehicle type by the wheel manufacturer, and</li> <li>– are not modified, and</li> <li>– do not have spacers or adaptors fitted.</li> </ul> </li> <li>• the tyre tread:                             <ul style="list-style-type: none"> <li>– does not protrude beyond the unmodified original body panels (including unmodified factory-fitted mudguard extensions), or</li> <li>– protrudes beyond the unmodified original body panels, but is covered by aftermarket or modified mudguard extensions or modified body panels, and the track width has increased by no more than 25mm from OE.</li> </ul> </li> </ul>	
Tyre size changes	<ul style="list-style-type: none"> <li>• the tyres:                             <ul style="list-style-type: none"> <li>– have an outer circumference that is no more than 5% greater than OE, and</li> <li>– are an appropriate selection for rim width, and</li> <li>– have tread that does not extend beyond the original or modified body panels or guard extension (see Figure 10-1-1).</li> </ul> </li> </ul>	
Fitting of or modification to:	LVV certification is never required:	
Any modification for the purposes of law enforcement or the provision of emergency services	<ul style="list-style-type: none"> <li>• in-service requirements for condition and performance must be met.</li> </ul>	

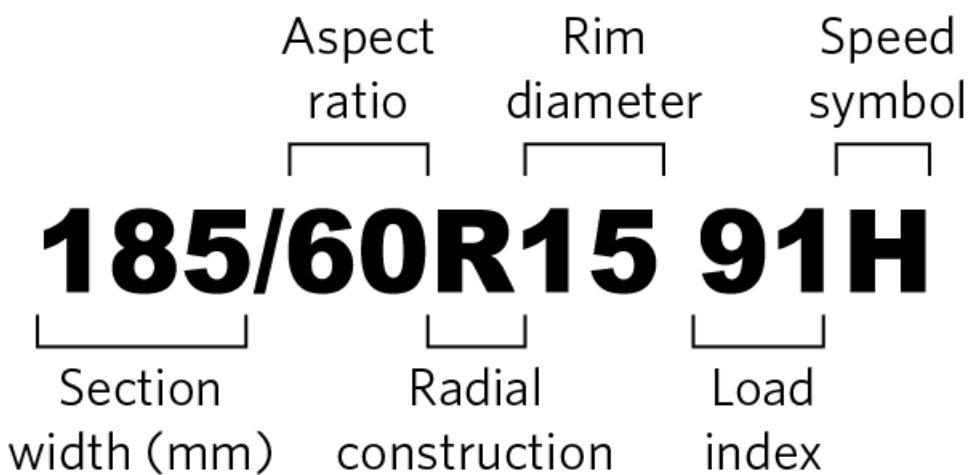
**Table 10-1-2. Tyre speed symbol categories**

Speed symbol – speed category (km/h)							
A1 – 5	A5 – 25	B – 50	F – 80	L – 120	Q – 160	U – 200	Y – 300
A2 – 10	A6 – 30	C – 60	G – 90	M – 130	R – 170	H – 210	ZR – over 240
A3 – 15	A7 – 35	D – 65	J – 100	N – 140	S – 180	V – 240	
A4 – 20	A8 – 40	E – 70	K – 110	P – 150	T – 190	W – 270	

**Figure 10-1-1. Tyre and body panel position**

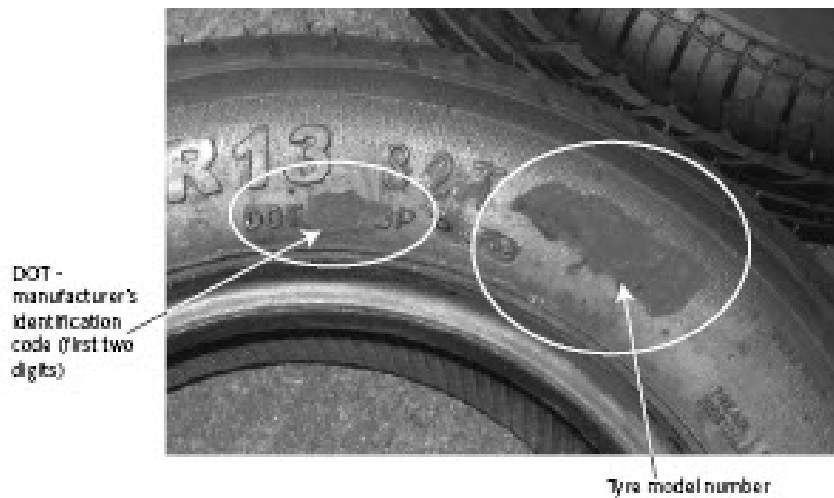


**Figure 10-1-2. Tyre markings**



**Figure 10-1-3. Example of tyres with information removed/concealed/obscured**

**Example of tyre with manufacturer/brand/model information removed**



The circled areas show where information has been removed so that the tyre can no longer be identified.

**Example of tyre with information obscured**



The white tape overlay on the tyre obscures all of the important information.

### Example of tyre with information removed



## Summary of legislation

### Applicable legislation

- [Land Transport Rule: Tyres and Wheels 2001.](#)

### Mandatory equipment

#### Tyres

1. Tyres must be compatible with the vehicle to which they are fitted.
2. Tyres on the same axle must be of the same size designation and construction, and of the same tread pattern type.
3. Asymmetric tyres must be fitted in axle sets in accordance with manufacturer's instructions.
4. A unidirectional tyre must be fitted to a wheel position corresponding to its direction of rotation.
5. The speed category of a tyre must be compatible with the maximum legal speed limit for the vehicle, or the vehicle's maximum speed (Note 3).
6. A vehicle must not be fitted with a metal tyre or other non-pneumatic tyre, or with a tyre with studs, cleats, lugs or other gripping devices.

#### Wheels

7. A wheel must:
  - a) be sufficiently strong for the type of vehicle to which it is fitted, and
  - b) be compatible with the vehicle to which it is fitted, and
  - c) be compatible with the tyre rim profile, flange height and valve fitment.
8. There must be adequate clearance for the brake, hub, suspension and steering mechanism, and body parts.

## Permitted equipment

9. A vehicle may be fitted with retreaded tyres.

## Condition

### Tyres (excluding spare tyres and space-saver tyres)

10. A tyre must be of good quality and construction, fit for its purpose, and maintained in a safe condition.

11. A tyre must not have worn, damaged or visible cords apparent by external examination.

12. A tyre must have a tread pattern depth of not less than 1.5mm (excluding any tie-bar or tread-depth indicator strip) around the whole circumference of the tyre:

a) within all principal grooves that contain tread-depth indicators, or

b) if the tyre does not normally have tread-depth indicators, across at least three-quarters of the tyre tread width.

13. The regrooving of a tyre is permitted only if the tyre is identified as being specifically designed for regrooving after manufacture.

14. A tyre that is fitted to a vehicle must be maintained at a safe inflation pressure.

### Spare tyre

15. If the vehicle carries a spare tyre, the tyre must be securely attached on or in the vehicle.

### Space saver tyres

16. A space-saver tyre carried in a vehicle must have a safety warning label that:

a) has safety instructions that are printed clearly in English, and

b) identifies that the tyre is for temporary use only, and

c) specifies that the vehicle must not be operated with a space-saver tyre at a speed of more than 80km/h or at a lesser speed specified by the tyre manufacturer, and

d) contains information on the recommended inflation pressure of the tyre when in use, and

e) is permanently attached to the outside of the wheel.

Page amended **1 November 2018** (see [amendment details](#)).

## 10-2 Hubs and axles

### Reasons for rejection

#### Condition

1. A hub (Note 1):

a) is not securely attached to the vehicle, or

b) has a visible crack, or

- c) is significantly damaged, distorted or has deteriorated, or
- d) has a broken or missing wheel stud.

2. A wheel bearing:

- a) has play beyond the manufacturer's specifications, or
- b) is over-tight or **binding, or**
- c) feels/sounds rough when rotated.**

3. An axle:

- a) is insecure, or
- b) is visibly cracked, or
- c) is significantly damaged, distorted or has deteriorated, or
- d) shows signs of welding or heating after original manufacture, or
- e) shows signs of fouling the vehicle structure or a brake, suspension or steering component.

### Performance

4. The geometry of a hub or axle causes:

- a) the vehicle to veer significantly to one side, or
- b) the front wheel not to self-centre.

### Modification

5. A modification (Note 1) affects the hubs or axles, and:

- a) is not excluded from the requirements for LVV specialist certification (Table 10-2-1), and
- b) is missing proof of LVV specialist or accepted overseas certification, ie:
  - i. the vehicle is not fitted with a valid LVV certification plate, or
  - ii. the operator is not able to produce a valid modification declaration or authority card , or
  - iii. the vehicle has not been certified to an accepted overseas system as described in [Technical bulletin 13](#).

### Note 1 Definitions

**Hub** means that part of a vehicle that is attached to the axle and rotates on, or with, the axle, and to which the wheel is attached, and includes any bearings.

**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.

**Table 10-2-1. Modifications that do not require LVV certification**

<b>Fitting of or modification to:</b>	<b>LVV certification is not required provided that:</b>
Axle housing replacement	<ul style="list-style-type: none"><li>• the axle housing fits the vehicle without adaptation, and</li><li>• no change to the OE suspension geometry occurs, and</li><li>• no changes are made to the OE brake system.</li></ul>
<b>Fitting of or modification to:</b>	<b>LVV certification is never required:</b>
Any modification for the purposes of law enforcement or the provision of emergency services	<ul style="list-style-type: none"><li>• in-service requirements for condition and performance must be met.</li></ul>

## Summary of legislation

### Applicable legislation

- [Land Transport Rule: Tyres and Wheels 2001](#).

### Condition

1. The components of the assembly must be in good condition.
2. The hub and axle must be sufficiently strong for the type of vehicle to which they are fitted.
3. The hub and axle must have a suitable and correctly adjusted geometry.

### Modification

4. A modification that affects the hubs or axles must be inspected and certified by a low volume vehicle specialist certifier, unless the vehicle is:
  - a) excluded from the requirement for LVV specialist certification (Table 10-2-1) and has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance, or
  - b) modified for the purposes of law enforcement or the provision of emergency services.

Page amended **1 April 2024** (see [amendment details](#)).

## 10-3 Mudguards

### Reasons for rejection

#### Mandatory equipment

1. A mudguard (Note 1) over a road wheel is missing where it is reasonable and practicable to fit a mudguard, unless the vehicle is:

- a) in an unfinished condition legally used under the authority of trade plates, or
- b) not capable of exceeding a speed of 30km/h.

2. A mudguard does not cover the full width of the tread of the tyre or tyres fitted to a road wheel (Figure 10-3-1 and Figure 10-3-2).

**Condition**

- 3. A mudguard is not securely fixed to the vehicle.
- 4. A mudguard is so constructed or damaged that it is likely to present a hazard to road users.

**Modification**

- 5. A modification affects a mudguard, and:
  - a) is not excluded from the requirements for LVV specialist certification (Table 10-3-1), and
  - b) is missing proof of LVV specialist **or accepted overseas** certification, ie:
    - i. the vehicle is not fitted with a valid LVV certification plate, or
    - ii. the operator is not able to produce a valid modification declaration or authority card **, or**
    - iii. **the vehicle has not been certified to an accepted overseas system as described in [Technical bulletin 13](#)**

**Note 1 Definitions**

**Mudguard** means a fitting, inclusive of any portion of the vehicle and of any mudflaps attached, that serves to intercept material thrown up by a wheel more or less on the plane of the wheel.

**Tyre tread** means the portion of a tyre that contacts the road.

**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.

**Table 10-3-1. Modifications that do not require LVV certification**

Fitting of or modification to:	LVV certification is never required:
Modified mudguards, including flared wheel arches or the addition of mudguard extensions *	<ul style="list-style-type: none"> <li>• in-service requirements for condition and performance must be met (see also <a href="#">Table 10-1-1</a>).</li> </ul>
Any modification for the purposes of law enforcement or the provision of emergency services	

\* Some vehicles fitted with flared wheel arches or mudguard extensions will require LVV certification as a result of aftermarket wheel fitments and tyre size changes. See [Table 10-1-1](#)

Figure 10-3-1. Size and position of mudguards which are incorporated into the body

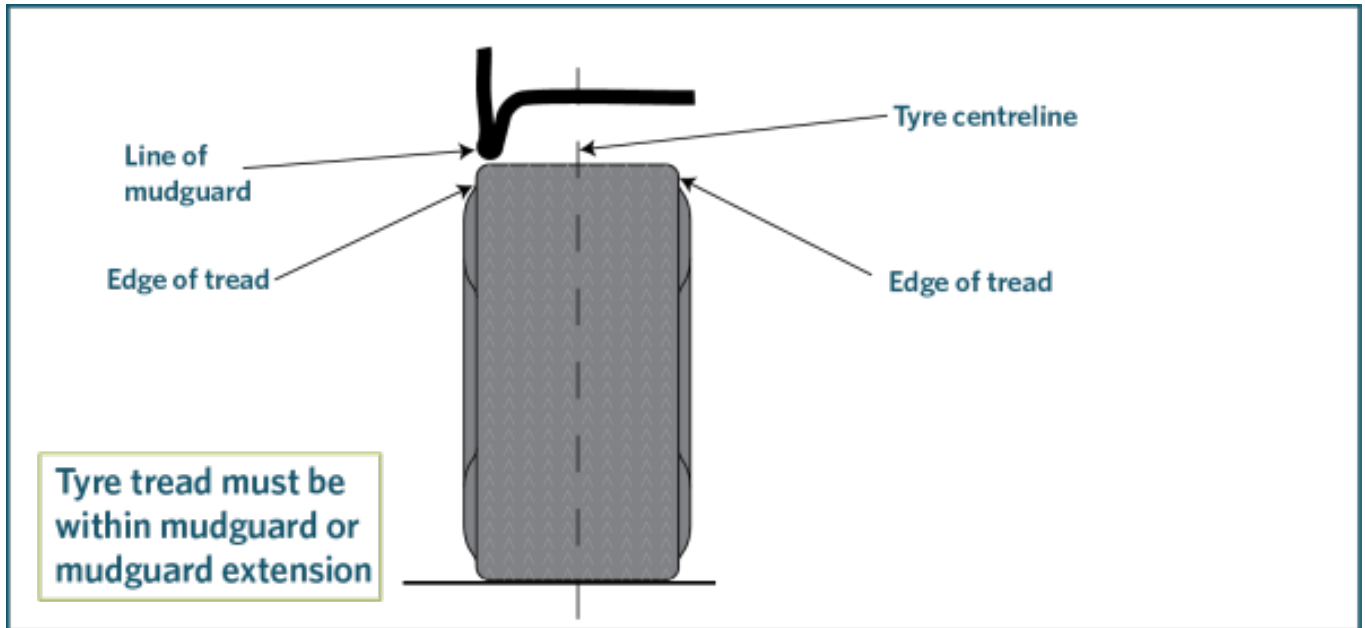
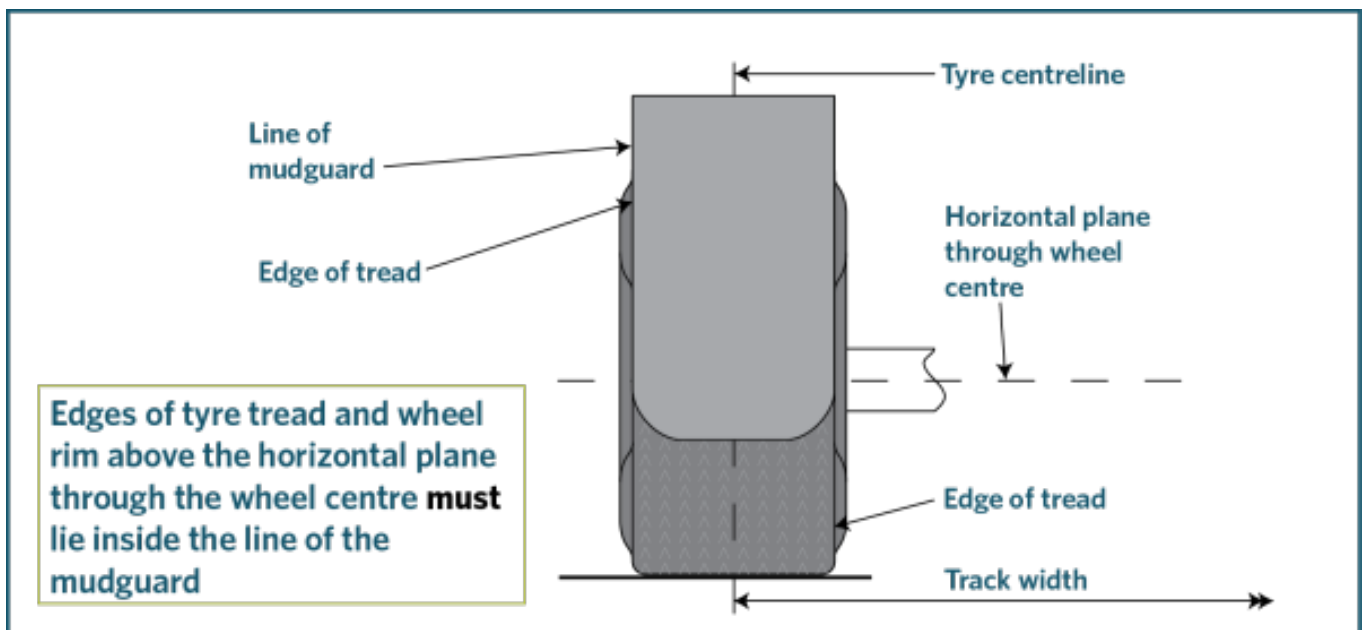


Figure 10-3-2. Size and position of individual mudguards



## Summary of legislation

### Applicable legislation

- [Land Transport Rule: Tyres and Wheels 2001](#)
- [Land Transport Rule: Vehicle Equipment 2004](#)

### Mandatory equipment

1. A motorcycle must be fitted with a mudguard over each road wheel if it is reasonable and practicable to do so.

2. A mudguard must cover no less than the width of the tyre tread on each road wheel.
3. A motorcycle fitted with twin tyres or close-spaced multiple tyres must be fitted with a mudguard over each wheel on the rear axle that provides continuous protection from a horizontal line tangent to the top of the tyre tread to a line with a slope of 1 in 3 rising rearward from the tyre's contact point on the road.
4. The following vehicles are not required to be fitted with mudguards:
  - a) a vehicle in an unfinished condition used under the authority of trade plates and operated in accordance with the Compliance Rule
  - b) a vehicle not capable of exceeding a speed of 30km/h.

#### **Condition**

5. A mudguard must be securely fixed to the vehicle and must be constructed so that it does not present a hazard to road users.

#### **Modification**

6. A modification that affects a mudguard must be inspected and certified by a low volume vehicle specialist certifier, unless the vehicle:
  - a) is excluded from the requirement for LVV certification (Table 10-3-1), and
  - b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Page amended **1 December 2016** (see [amendment details](#)).