Correct as at 3rd June 2026. It may be superseded at any time.

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

7 Tyres, wheels and hubs

7-1 Tyres and wheels

Reasons for rejection

Mandatory and permitted equipment

1. Refer to **general trailer pages**.

2. On a groundspreader or dedicated groundsprayer fitted with multiple tyre sets that are made up of tyres of different size or construction:

    a) the tyre sets are not fitted so that those fitted at one end of the axle mirror those fitted at the other end of the axle.

3. The tyres on an axle do not meet at least one of the following:

    a) the tyre ply ratings differ by no more than 2

    b) the tyre load indices differ by no more than 6

    c) where no load index is indicated, the tyre load ratings (kg) on an axle differ by no more than 21% of the lowest rating.

Condition

4. Refer to **general trailer pages**.

5. A tyre shows damage that 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 of the tyre structure, or

    b) a cut or crack in a side wall or tread more than 25mm long that reaches the cords (see Note 2 for visible cords in the tread area of heavy vehicle radial-ply tyres), or

    c) exposed or cut cords (see (Note 2) for visible cords in the tread area of heavy vehicle radial-ply tyres), 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.

Performance

5. Refer to **general trailer pages**.

Modification and repair

6. A modification or repair affects the tyres and wheels and:

a) is not excluded from the requirements for HVS certification (Table 7-1-3), or

b) is not for the purpose of law enforcement or the provision of emergency services, or

c) is missing proof of HVS certification, ie the vehicle has been modified or repaired, and:

i.no LANDATA record has been entered, or

ii. no valid LT400 form from an HVS certifier of category HVEC or HMCD has been presented.

Note 1

Central tyre inflation system means a type of tyre pressure control system that adjusts tyre pressure for the purpose of inflating and deflating tyres to improve tyre adhesion and reduce road surface damage and is under the central control of the driver or an automated system, or a combination of both the driver and an automated system (commonly known as ‘CTI’).

Dedicated groundsprayer means a self-propelled or trailing machine whose sole function is the application of chemicals or liquid fertiliser to crops or to the ground.

Groundspreader means a vehicle designed specifically for the carriage of powder or particulate artificial fertilisers on the road, and for the distribution of those fertilisers directly from the vehicle onto the land by means of a mechanical or pneumatic distributor that forms part of the vehicle.

Protective belt, sometimes called a **protective ply** or **breaker**, means an optional layer of ply material (cords) located immediately under the tread to minimise damage to the structural belts beneath.

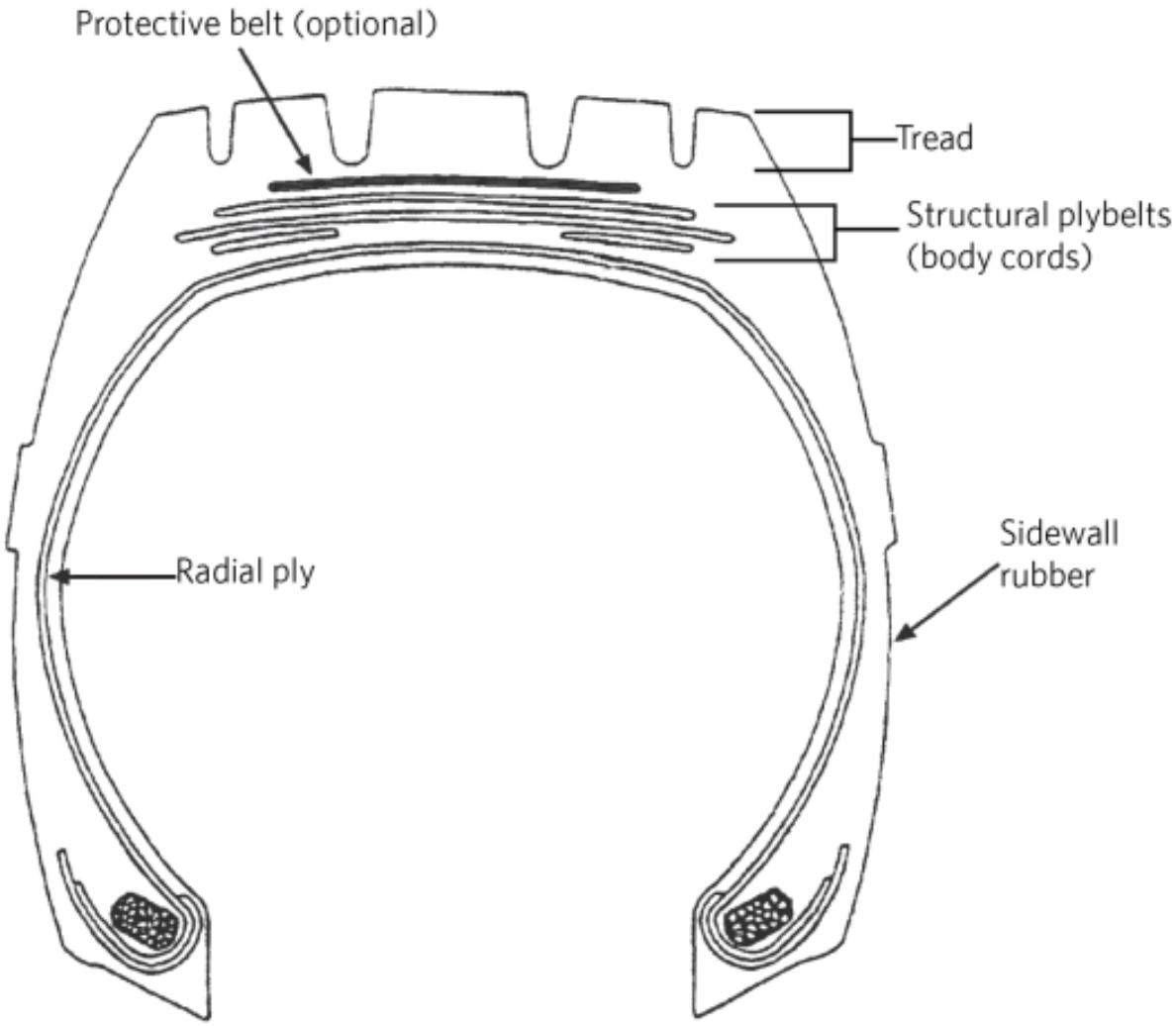
Note 2

Where a heavy vehicle radial-ply tyre has visible cords in the tread area, the vehicle inspector may pass such a tyre for CoF provided the tyre is in a safe condition, eg only the protective cord layer (protective belt, see Figure 7-1-3) is visible. When determining whether such a tyre is in a safe condition, the vehicle inspector may take into account written evidence from a person who has current specialist tyre knowledge and experience, particularly in heavy vehicle tyre inspection.

Table 7-1-3. Requirements for HVS certification

HVS certification is required	HVS certification is not required
1. Increase of track width beyond vehicle manufacturer's specified limits 2. Fitting of tyres additional to the limit specified by the vehicle manufacturer 3. Modified wheels	1. Modified wheels with written evidence from the vehicle manufacturer that the complete assembly of tyre, hub and axle is within the vehicle manufacturer's operating limits. Such approval is likely to contain the approved tyre and wheel sizes and the maximum track, separately for all axles, together with the maximum number of wheels fitted to one axle, and may also include a few restrictions such as reduced axle load and so on. 2. Retrofitting a tyre pressure control system in accordance with the equipment manufacturer's instructions. 3. Fitting a regrooved tyre identified as specifically designed and constructed for the process of regrooving after manufacture. 4. Fitting a single large tyre ('super-single') to a front axle when this is permitted by the vehicle manufacturer. 5. Any modification or repair likely to have been carried out before 1 January 1997. (Modifications and repairs before this date generally required certification but for inspection purposes no evidence of this is required.) 6. Any repair or modification not listed in the left-hand column unless the vehicle inspector considers that certification is required because the modification or repair has affected the vehicle's safety performance (a second opinion from an expert may be needed, eg the manufacturer's representative, reputable workshop).

Figure 7-1-3. Cross-sectional representation of a heavy vehicle radial-ply tyre



Summary of legislation

Applicable legislation

- Land Transport Rule: Tyres and Wheels 2001.

Mandatory and permitted equipment

1. Refer to general trailer pages.

2. Individual tyres of multiple tyre sets on groundspreaders or dedicated groundsprayers may be of different sizes or construction in the same set, but each multiple tyre set must be the same as the other multiple tyre set on the same

axle.

Condition

3. Refer to **general trailer pages**.

4. A heavy vehicle radial-ply tyre may have visible cords in the tyre-tread area provided the tyre is in safe condition. To assess whether such a tyre is in safe condition, the vehicle inspector may take into account written evidence from a person who has current specialist tyre knowledge and experience, particularly in heavy vehicle tyre inspection.

Performance

5. Refer to **general trailer pages**.

Modification and repair

6. A modification or repair that affects the tyres or wheels must be inspected and certified by an HVS certifier of category HVEC or HMCD unless the vehicle:

a) is excluded from the requirement for HVS certification (Table 7-1-3), and

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

Page amended **1 April 2023** (see **amendment details**).

7-2 Hubs and axles

Reasons for rejection

Mandatory requirement (Note 2)

1. A semi-trailer with a quad-axle set containing a steering axle does not have evidence of certification, ie:

a) the steering axle was fitted before the last CoF inspection and there is no LANDATA record of the certification, or

b) the steering axle was fitted after the last CoF inspection and:

i. a valid LT400 form is not presented, or

ii. the HVS certifier was not of category HVEC or HMCD .

Mandatory and permitted equipment (Note 2)

2. A heavy trailer, other than a semi-trailer that is not part of an A-train or B-train, is fitted with a steering axle in its rear-axle set.

3. On a semi-trailer that is not part of an A-train or B-train more than half the axles steer at any time.

4. A semi-trailer with a quad-axle set does not have one or two steering axles that are capable of turning in both directions, being:

a) the rearmost axle, or

b) the two rearmost axles, or

c) the foremost and the rearmost axles.

5. A heavy trailer is fitted with an axle set other than one permitted in Table 7-2-1.

6. An axle set, other than a twin-steer axle set, is not load sharing.

7. The manufacturer's plate for a tandem axle set with a twin-tyred axle and a large single-tyred axle (where these were fitted from 1 July 2002):

a) is missing, or

b) is not legible, or

c) does not show:

i. the load-share ratio of the axle set, or

ii. a ratio that is either 60:40 or 55:45, or

iii. the tyre size on each axle, or

iv. the maximum individual axle ratings, or

d) has details that do not match the vehicle.

8. A heavy trailer is presented as part of an A-train or B-train and is fitted with a retractable axle in its rear-axle set.

9. A sliding axle set is not fitted with both:

a) an effective locking device to prevent inadvertent extension or separation, and

b) endstops at the end of the slideway to prevent the separation of the sliding parts if the primary locking device fails.

Condition

10. Refer to **general trailer pages**.

11. A sliding axle assembly has deteriorated, eg:

a) a chassis rail/guide, locking pin or other component is missing, deformed, cracked or otherwise worn or damaged, or

b) a locking pin is too small or too short, or

c) there is an air leak from the lock pin air ram.

Performance

12. Refer to **general trailer pages**.

13. The locking of a sliding axle locking device is not readily verifiable by visual inspection.

14. A sliding axle locking device has wear or damage, such as a worn or bent pin, so that it is not effective.

15. A sliding axle locking device does not operate correctly.

16. A sliding axle endstop is:

a) missing, or

b) insecure, or

c) damaged.

Modification and repair

17. A modification or repair affects the hubs and axles and:

a) is not excluded from the requirements for HVS certification (Table 7-2-2), or

b) is not for the purpose of law enforcement or the provision of emergency services, or

c) is missing proof of HVS certification, ie the vehicle has been modified or repaired, and:

i. no LANDATA record has been entered, or

ii. no valid LT400 form from an HVS certifier of category HVEC or HMCD has been presented.

Note 1 Definitions

Retractable axle means an axle that has a convenient adjustment to allow the axle load distribution of the axle set to be varied substantially. An axle that is retracted is not considered to be part of the axle set.

Load-sharing axle set means an axle set suspension system that has effective damping characteristics on all axles of the set and is built to divide the load between the tyres on the set so that no tyre carries a mass more than 10% greater than the mass it would carry if:

a) the load were divided in the axle set so that each tyre carries an equal load, or

b) the axle set is a tandem-axle set comprising a twin-tyred axle and a large single-tyred axle and is built to divide the load

between the tyres on the set so that:

i. 60% of the load is borne by the twin-tyred axle and 40% of the load is borne by the large single-tyred axle, or

ii. 55% of the load is borne by the twin tyred axle and 45% of the load is borne by the large single-tyred axle.

Specialist overdimension vehicle means:

a) a vehicle designed primarily to transport overdimension or overweight loads, or

b) a vehicle whose primary purpose is to carry out a specialist function that requires overdimension equipment, and:

i. dismantling of the vehicle's equipment would make the equipment unusable for its intended purpose, or

ii. it would take more than four hours to dismantle the vehicle's equipment.

Note 2

For specialist overdimension vehicles, none of the 'Mandatory requirement' or 'Mandatory permitted equipment' Reasons for rejection apply except number 6, ie axle sets must be load sharing.

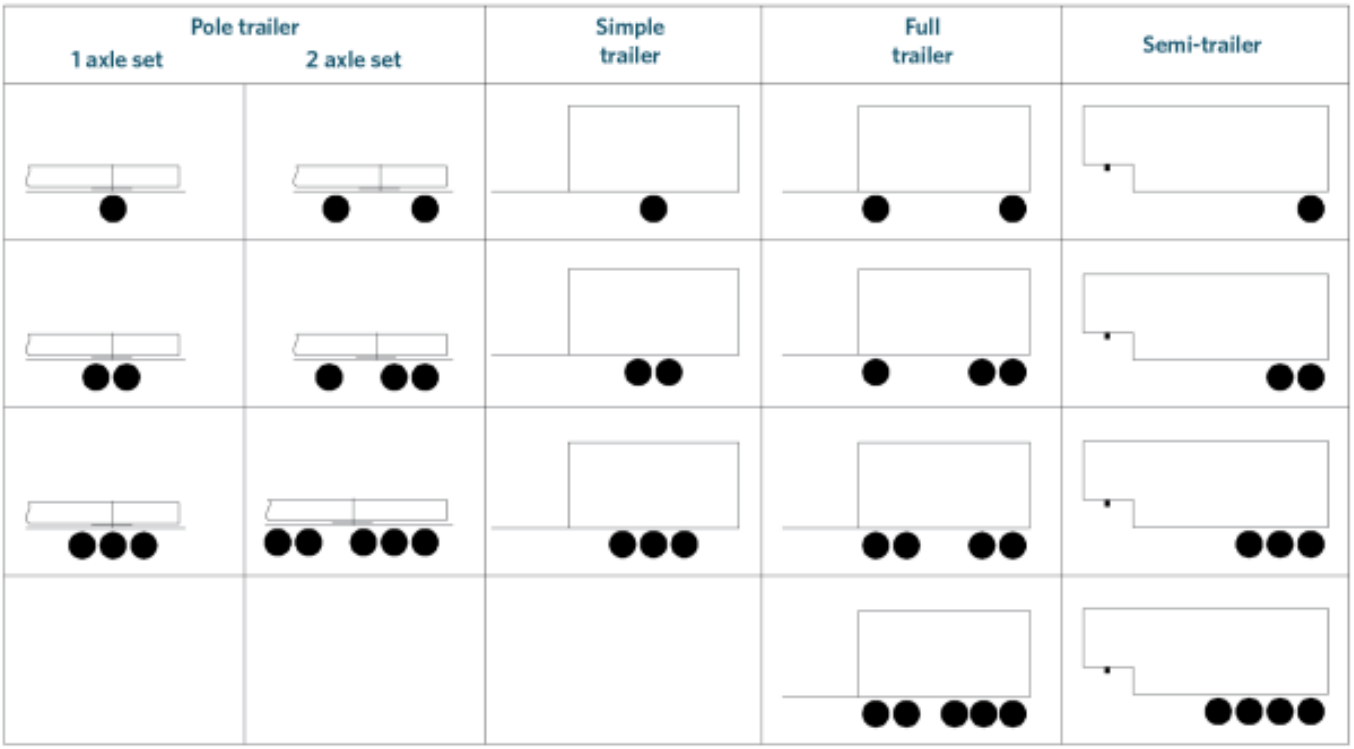
Table 7-2-1. Permitted axle sets for heavy trailers (see Figure 7-2-1)

Trailer type		Permitted axle sets	
Semi-trailer		Single axle; tandem axle set; tri-axle set; quad-axle set (not in A-train or B-train)	
Full trailer		Front Single axle; tandem axle set Must be connected to the drawbar steering system	Rear Single axle; tandem axle set; tri-axle set (only with front tandem axle set)
Simple trailer		Single axle; tandem axle set; tri-axle set	
Pole trailer	One axle set	Single axle; tandem axle set; tri-axle set	
	Two axle sets	Front Single axle; tandem axle set Must be connected to the drawbar steering system	Rear Single axle; tandem axle set; tri-axle set (only with front tandem axle set)

Table 7-2-2. Requirements for HVS certification

HVS certification is required	HVS certification is not required
1. An axle that is modified, including a replacement axle that is not identical to the one fitted by the vehicle manufacturer 2. Fitting of an additional axle 3. Steering axles in a quad-axle set of a semi-trailer (unless the vehicle is a specialist overdimension vehicle) 4. A retractable axle	1. Steering axles in a quad-axle set of a specialist overdimension vehicle 2. Any modification or repair likely to have been carried out before 1 January 1997 (modifications and repairs before this date generally required certification but for inspection purposes no evidence of this is required). 3. Any repair or modification not listed in the left-hand column unless the vehicle inspector considers that certification is required because the modification or repair has affected the vehicle's safety performance (a second opinion from an expert may be needed, eg the manufacturer's representative, or a reputable workshop).

Figure 7-2-1. Permitted axle configurations



Summary of legislation

Applicable legislation

- Land Transport Rule: Vehicle Dimensions and Mass 2002
- Land Transport Rule: Heavy Vehicles 2004.

Mandatory requirement (Note 2)

1. A semi-trailer with a quad-axle set containing a steering axle must be certified by a HVS certifier.

Mandatory and permitted equipment (Note 2)

2. A heavy trailer must not have any rear-steering axles, unless the trailer is a semi-trailer that is not part of an A-train or B-train, provided no more than half the axles within the rear-axle set steer at any time.

3. A semi-trailer with a quad-axle set must have one or two steering axles capable of turning on both directions, being:

    a) the rearmost axle, or

    b) the two rearmost axles, or

    c) the foremost and the rearmost axles.

4. A heavy trailer must be fitted with a permitted axle set as listed in Table 7-2-1.

5. A heavy trailer not part of an A-train or B-train may be fitted with a retractable axle in its rear-axle set.

6. A sliding axle set must have:

    a) an effective locking device to prevent inadvertent separation or extension, and

b) endstops at the end of the slideway to prevent the separation of the sliding parts if the primary locking device fails.

Condition

7. Refer to **general trailer pages**.

8. An axle fitted to a vehicle must have adequate strength and performance characteristics for all conditions of loading and operation for which the vehicle was constructed.

Performance

9. Refer to **general trailer pages**.

10. The locking of a sliding axle locking device must be readily verifiable by visual inspection.

11. If the sliding axle set locking device incorporates a system that provides energy for its operation, the device must remain fully engaged in the locking position, or the locking action must be initiated immediately, if the energising system fails.

Modification and repair

12. A modification or repair that affects the hubs or axles must be inspected and certified by an HVS certifier of category HVEC or HMCD unless the vehicle:

a) is excluded from the requirement for HVS certification (Table 7-2-2), and

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

Page amended **1 April 2023** (see **amendment details**).

7-3 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 trailer is:

a) in an unfinished condition legally used under the authority of trade plates, or

b) is towed by a vehicle that is not capable of exceeding a speed of 30 km/h.

2. A mudguard does not cover the full tread (Note 1) width of a tyre or tyres fitted to a road wheel (Figure 7-3-1), except on a trailer designed for industrial purposes where it is not practicable to fit a full mudguard due to the vehicle's construction.

3. A trailer used for transporting round timber is not fitted with at least partial mudguards mounted behind the rearmost axle that meet the following requirements (Figure 7-3-2):

- the mudguard must provide continuous protection from a horizontal at the top of the tyre to a line rising rearward with a slope of 1 in 3 from the tyres contact point on the road, and
- the distance between the tyre and the mudguard must not be more than twice the distance from the centre of the wheel to the road.

4. On a vehicle with twin or close-spaced multiple tyres a mudguard fitted over a wheel on the rear axle is more than one-third higher than the horizontal distance between the vertical lines of the lowest point of the mudguard and the centre of the wheel (Figure 7-3-2), except when the mudguard is fitted to a vehicle designed for industrial purposes and it is not practicable to fit a full mudguard due to the vehicle's construction.

Mudguard condition

5. A mudguard is not securely fixed to the vehicle.

6. A mudguard is so constructed or damaged that it is likely to present a hazard to road users.

Note 1

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.

Figure 7-3-1. Position of mudguard in relation to tyre tread

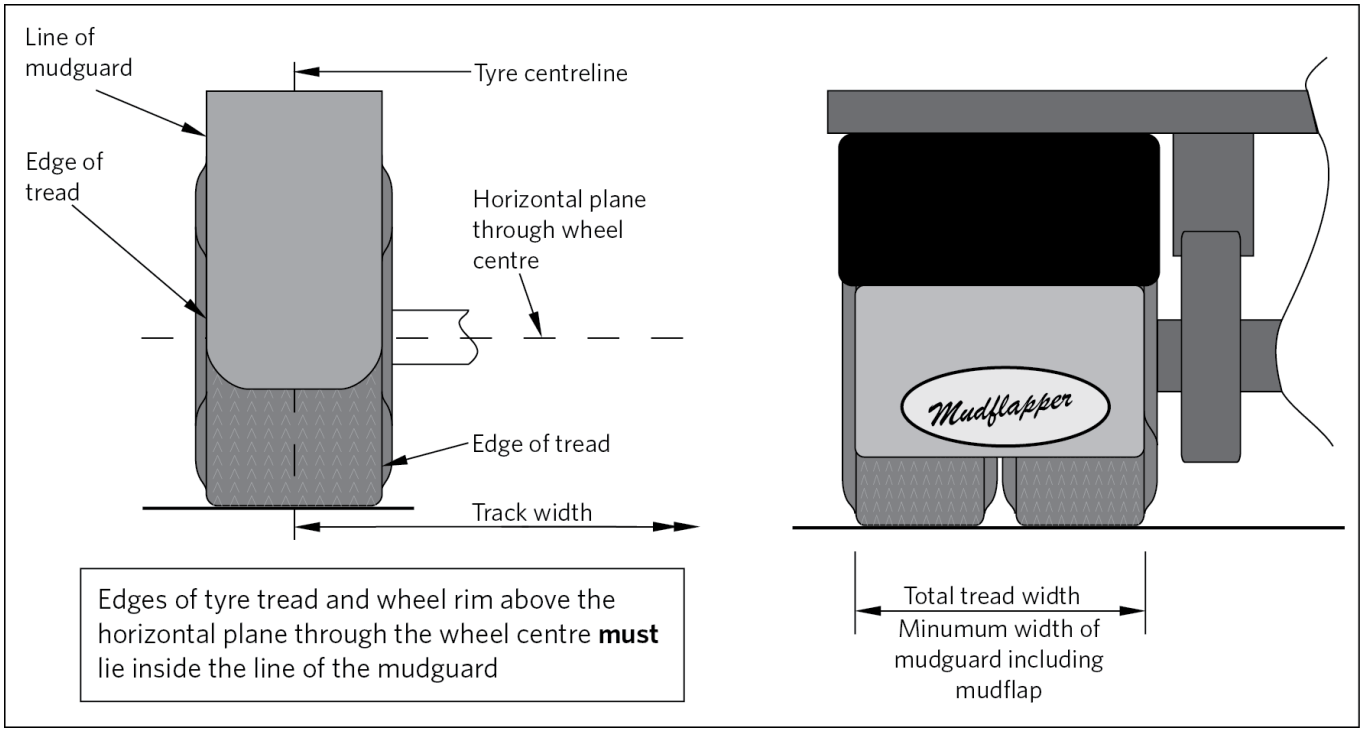
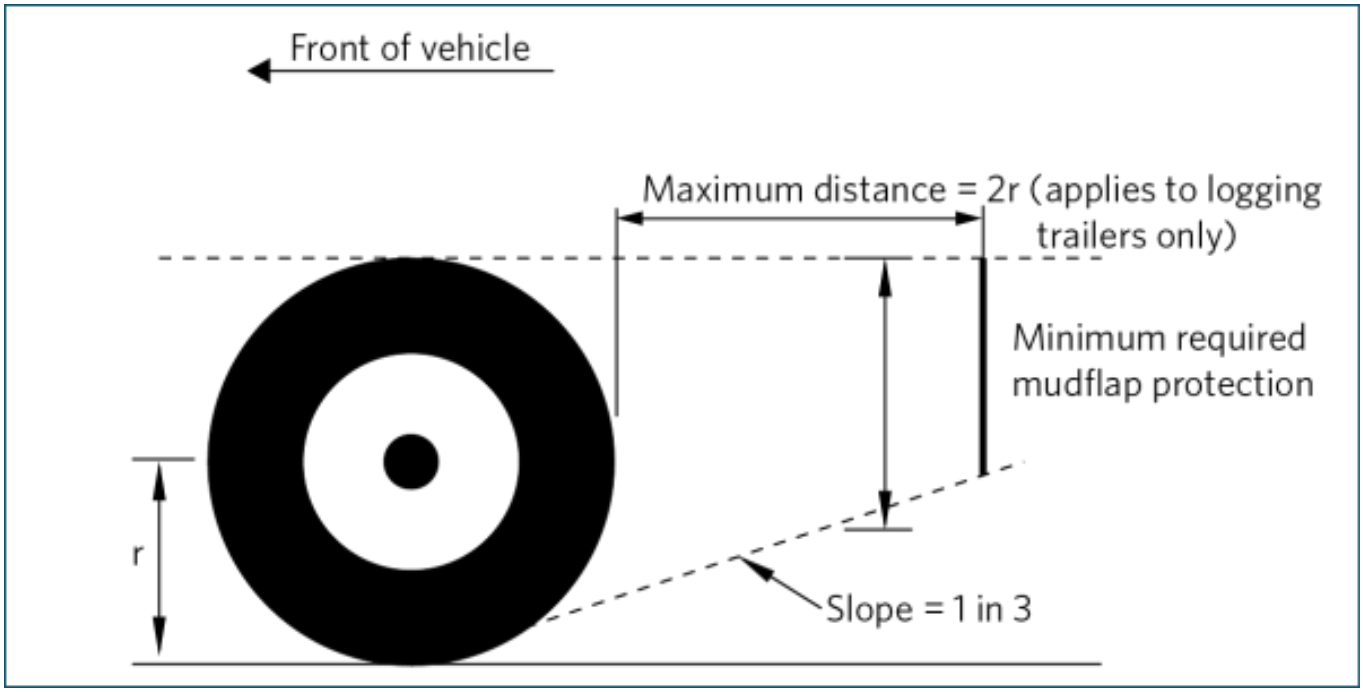


Figure 7-3-2. Size and position of mudguards for the rear wheels of a trailer fitted with dual wheels or close-spaced multiple wheels and logging trailers



Summary of legislation

Applicable legislation

- Land Transport Rule: Tyres and Wheels 2001
- Land Transport Rule: Vehicle Equipment 2004

Mandatory equipment

1. A trailer must be fitted with a mudguard (Note 1) 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 (Figure 7-3-1).

3. A trailer 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 (Note 1) to a line with a slope of 1 in 3 rising rearward from the tyre's contact point on the road (Figure 7-3-2).

4. A trailer designed for industrial purposes may be fitted with partial mudguards if the vehicle's construction makes it impracticable to fit full mudguards.

5. A trailer used for transporting round timber that cannot be fitted with mudguards over each road wheel must have at least partial mudguards mounted behind its rearmost axle that comply with the following (Figure 7-3-2):

    a) the mudguard must provide 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, and

    b) the distance between the tyre and the mudguard must not be more than twice the tyre rolling radius.

6. The following trailers 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 trailer towed by a vehicle that is not capable of exceeding a speed of 30 km/h.

Mudguard condition

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