

Vehicle exterior

- 2-1 External projections
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Vehicle exterior

2-1 External projections

Summary of legislation

Applicable legislation

- Land Transport Rule: External Projections 2001

Permitted equipment

1. A motor vehicle may be fitted with a protruding ornamental or functional object or fitting.

Condition and performance

2. A protruding ornamental object or fitting must not be likely to injure a person.
3. A protruding object or fitting that has a functional purpose must be installed so that the risk of the object or fitting causing injury to a person is minimised.
4. Components of a motor vehicle, including damaged or corroded body panels, must be such that the risk of their hooking a vehicle, or hooking or grazing a person, is minimised.
5. A protruding object or fitting must not adversely affect driver vision or driver control.

Reasons for rejection

Condition and performance (Note 1)

1. The risk of a component (**Note 2**) hooking a vehicle, or hooking or grazing a person, has not been minimised.
2. An ornamental object or fitting (**Note 3**) protrudes in such a way that it is likely to injure a person.
3. A protruding object or fitting (**Note 4**) that has a functional purpose is not installed so that the risk of causing injury to a person is minimised, eg the object or fitting:
 - a) is of excessively heavy construction for the purpose for which it has been fitted, or
 - b) has sharp corners, or
 - c) exceeds the vehicle's width by more than 100 mm on either side.
4. A protruding component, object or fitting is not securely fitted.
5. A protruding object or fitting adversely affects the driver's vision or control.

Note 1 The external projections requirements relate to the design and maintenance of objects and fittings that protrude from the exterior of the motor vehicle with regard to the safety of other motor vehicles, pedestrians and cyclists. The attachment of such objects and fittings to the vehicle is addressed in the Vehicle structure section of this manual.

Note 2 Components include damaged, corroded and exposed body panels.

Note 3 **Ornamental object or fitting** means any object or fitting that does not have a practical purpose.

Note 4 **Functional object or fitting** means an object or fitting that has a practical purpose, eg load restraints.

Vehicle exterior 2-2 Dimensions

Note The vehicle inspector need only inspect dimensions in detail if there is doubt about the vehicle's compliance.

Summary of legislation

Applicable legislation

- Land Transport Rule: Vehicle Dimensions and Mass 2002.

Mandatory equipment

- A trailer with a GVM of 3501 kg or less that exceeds the dimensions in **Table 2-2-1** must meet the requirements in **Table 2-2-2**.
- A trailer with a GVM of 3501 kg or more may exceed the dimensions in **Table 2-2-2** only if it is:
 - a specialist overdimension trailer (**Note 6**), or
 - a trailer designed primarily to transport overdimension loads, or
 - a vehicle operating on a valid permit, exemption or approval.

Reasons for rejection

Mandatory equipment

- A trailer with a GVM of 3501 kg or less exceeds the dimension requirements set out in **Table 2-2-1** and is not fitted with the appropriate hazard warning equipment set out in **Table 2-2-2**.
- A trailer exceeds the dimensions set out in **Table 2-2-1** and is not:
 - a specialist overdimension trailer (**Note 6**), or
 - a trailer designed primarily to transport an overdimension load, or
 - a trailer operating on a valid permit, exemption or approval.

Table 2-2-1. Dimension requirements

Note All measurements must be taken with the vehicle combination in a straight line.

Dimension	Maximum distance	Comments
Width	1.25 m from each side of the longitudinal centreline of the trailer 2.5 m	Measurement does not include: <ul style="list-style-type: none"> direction indicators ropes, lashings, straps, chains and related connectors and tensioning devices that extend no more than 25 mm from either side, and that are not permanently or rigidly fixed to the vehicle the bulge towards the bottom of a tyre.
Overall length	12.5 m (simple trailers) 11.5 m (full trailers) 19 m (towing vehicle and one semi-trailer combination)	For a full trailer, measurement is to the centre of the towing eye.
Height	4.25 m	Measurement does not include load restraining devices (ropes, lashings, straps, chains, covers and related connectors and tensioning devices) that extend no more than 25 mm above the trailer, and that are not permanently or rigidly fixed to the vehicle.

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Vehicle exterior 2-2 Dimensions (cont.)

Dimension	Maximum distance	Comments
Forward distance	8.5 m (simple and full trailers) 9.2 m (semi-trailer)	Forward distance is measured from: <ul style="list-style-type: none"> simple trailer: from the rear axis (Note 3) to the centre of the point of attachment to towing vehicle full trailer: from the rear axis to front of trailer body/chassis (excludes drawbar) semi-trailer: from the rear axis to centre of kingpin.
Rear overhang	4 m	Rear overhang is measured from the rear axis to the rear of the vehicle.
Front overhang	2.04 m radius arc ahead of: <ul style="list-style-type: none"> tow coupling centre (simple trailer) turntable centre (full trailer) kingpin centre (semi-trailer) 	Front overhang (Figure 2-2-5) is measured from: <ul style="list-style-type: none"> simple trailer: tow coupling centre full trailer: turntable centre to front of trailer body (excludes drawbar) semi-trailer: kingpin centre to front of trailer

Note 1 Definitions of trailer types:

- **simple trailer** means a trailer (other than a semi-trailer) that has only one axle set
- **full trailer** means a trailer with two axles sets, the foremost of which is steered by a drawbar, and includes a semi-trailer with non-steering axles (**Note 4**) coupled to a converter dolly
- **semi-trailer** means a trailer with only one axle set where the point of attachment to the towing vehicle or leading trailer:
 - a) is no further rearward than the rearmost axle of the towing vehicle or rearmost axle of the leading trailer, or
 - b) if the towing vehicle is a rigid vehicle (**Note 5**) and has more than one axle in its rear axle set, is no more than 300 mm rearward of the rear axis of the towing vehicle.

Note 2 A permitted over-dimension trailer is one that is either:

- a) fitted with an over-dimension piece of equipment, or
- b) designed to carry an over-dimension load that cannot be divided, eg glider trailers and large boat trailers.

Operational requirements for such trailers are given in Factsheet 53 – Overdimension vehicles and loads.

Note 3 Rear axis of a vehicle means:

- a) trailers with one non-steering axle: centre of that axle
- b) trailers with a non-steering axle set consisting of two axles: midway between those two axles if each axle has an equal number of tyres on it, or two-thirds of the distance from the lesser-tyred axle towards the greater-tyred axle, if one axle has twice as many tyres on it as the other axle.

Note 4 Non-steering axle means any axle of a vehicle, the wheels of which remain substantially parallel with the longitudinal centreline of the vehicle while the vehicle is turning.

Note 5 Rigid vehicle means a vehicle with motive power, driver's position and steering system, that does not have any pivot points to allow any part of the vehicle chassis to move or rotate in relation to any other part of the vehicle chassis, but includes a pivot steer vehicle.

Note 6 Specialist overdimension trailer means a trailer where its primary purpose is to carry out a specialist function that requires overdimension equipment, and the dismantling of the equipment would make it unusable for its intended purpose, or it would take more than four hours to dismantle the equipment.

Table 2-2-2. Hazard warning equipment requirements for vehicles that exceed the dimensions in Table 2-2-1 (see Figure 2-2-3 for vehicle category thresholds)

Vehicle category (See Figure 2-2-5)	Dimension	Limits (up to and including)	Required hazard warning equipment
Category 1	Width/forward distance Length Front overhang Rear overhang	2.5 m/11.4 m, or 3.1 m/10.5 m, or 3.7 m/8.5 m, or 25 m, or 7 m, or 7 m	1. Flags ¹ or panels ² fitted on each side at the front and rear
Category 2 (not including category 1)	Width/forward distance Length Front overhang Rear overhang	2.5 m/13.3 m, or 4.5 m/8.5 m, or 35 m, or 10 m, or 10 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear if more than 3.1 m wide
Category 3 (not including category 2)	Width/forward distance	2.5 m/20 m 5 m/20 m 5 m/8.5 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear
Category 4 (not including category 3)	Width/forward distance	11 m/20 m 11 m/8.5 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear

Note Additional operational requirements may apply, eg if operated at night.

1 Flags:

- must be fluorescent yellow
- must be at least 400 mm long x 300 mm wide

2 Hazard warning panels:

- must be reflective yellow-green with a reflective orange diagonal stripe
- must be of at least of the minimum dimensions and the colours specified in **Figure 2-2-1**

3 OVERSIZE sign:

- must be black lettering on a yellow-green background
- must be at least 300 mm x 1100 mm in size
- may be in two parts: OVER and SIZE.

Vehicle exterior 2-2 Dimensions (cont.)

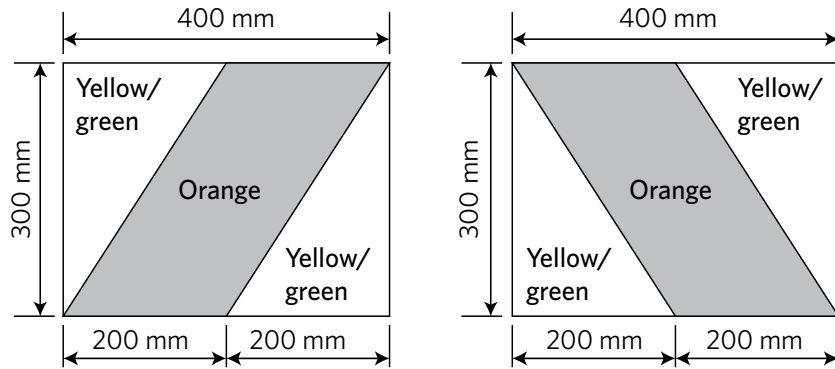


Figure 2-2-1. Hazard panel details

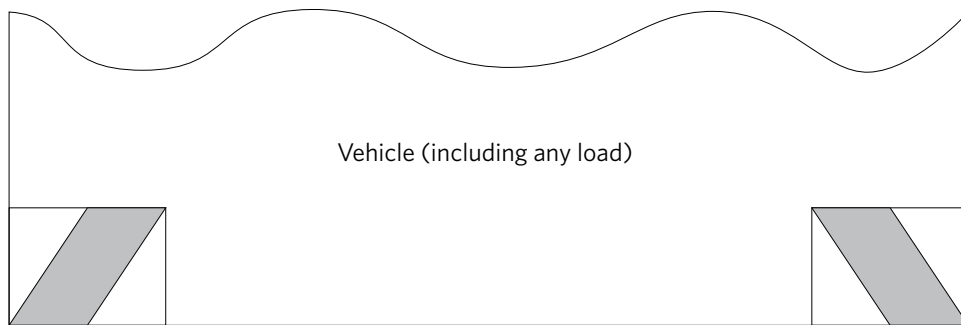


Figure 2-2-2. Hazard panel location and orientation

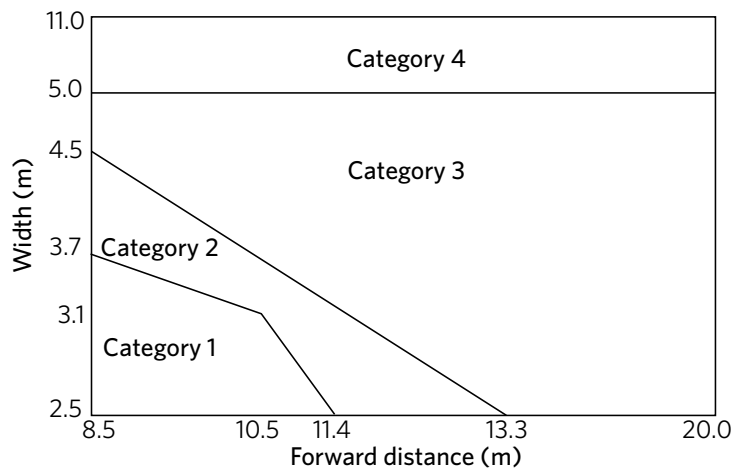


Figure 2-2-3. Vehicle categories and width/forward-distance thresholds.

Use this figure to determine the correct category referred to in **Table 2-2-2**

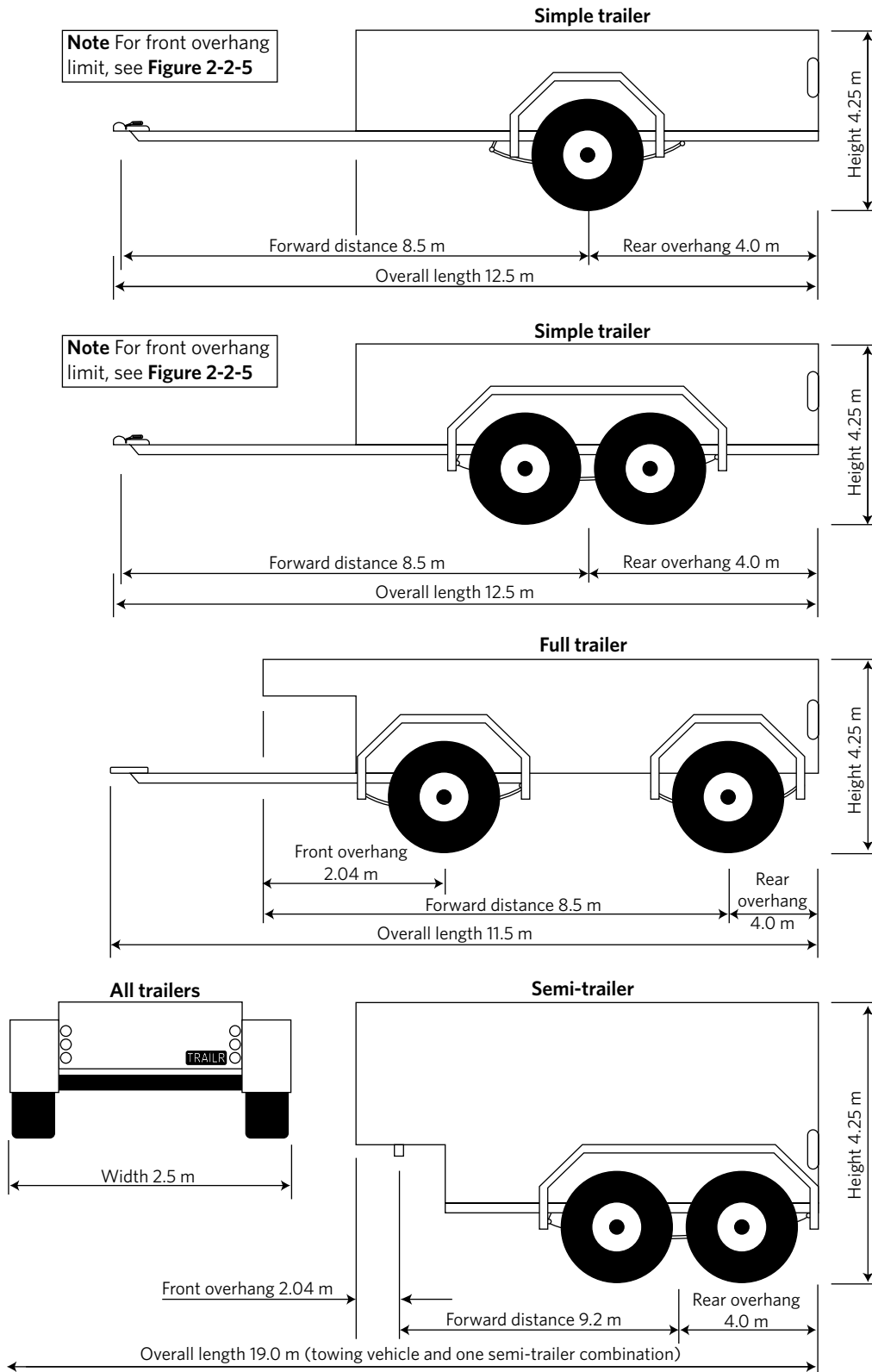


Figure 2-2-4. Trailer dimensions

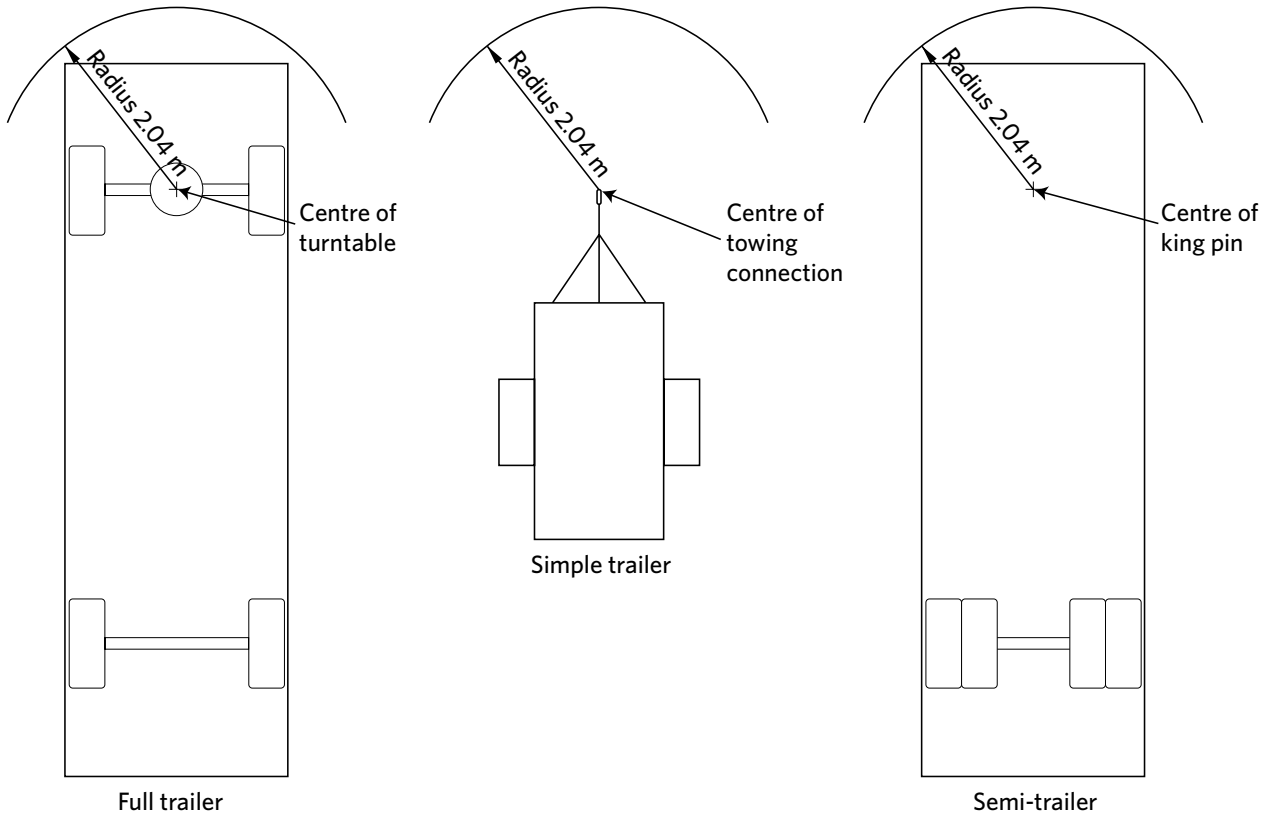


Figure 2-2-5. Measurement of front overhang

Vehicle exterior 2-2 Dimensions

Note The vehicle inspector need only inspect dimensions in detail if there is doubt about the vehicle's compliance.

Summary of legislation

Applicable legislation

- Land Transport Rule: Vehicle Dimensions and Mass 2002

Mandatory equipment

- A trailer with a GVM of 3501 kg or more that exceeds the dimensions in **Table 2-2-3** must meet the requirements in **Table 2-2-4**.
- A trailer with a GVM of 3501 kg or more may exceed the dimensions in **Table 2-2-3** only if it is:
 - a specialist overdimension trailer (**Note 1**), or
 - a trailer designed primarily to transport overdimension loads, or
 - a vehicle operating on a valid permit, exemption or approval.

Reasons for rejection

Mandatory equipment

- A trailer with a GVM of 3501 kg or more exceeds the dimension requirements set out in **Table 2-2-3** and is not fitted with the appropriate hazard warning equipment set out in **Table 2-2-4**.
- A trailer exceeds the dimensions set out in **Table 2-2-3** and is not:
 - a specialist overdimension trailer (**Note 1**), or
 - a trailer designed primarily to transport an overdimension load, or
 - a trailer operating on a valid permit, exemption or approval.

Table 2-2-3. Dimension requirements for heavy trailers (see Figure 2-2-9) (Note 2)

Dimension	Maximum distance	Comments
Width	2.5 m, or 1.25 m from each side of the longitudinal centreline of the vehicle	Measurement does not include: <ul style="list-style-type: none"> direction indicator and side-marker lamps ropes, lashings, straps, chains and related connectors and tensioning devices that extend no more than 25 mm from either side, and that are not permanently or rigidly fixed to the vehicle J-hook assemblies that extend not more than 25 mm from either side of the vehicle the bulge towards the bottom of a tyre central tyre inflation system hoses that extend not more than 75 mm beyond the outside of the tyre on the drive axles hubodometer provided it is fitted to a non-lifting, non-steering axle that causes the least overwidth.

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Vehicle exterior 2-2 Dimensions (cont.)

Dimension	Maximum distance	Comments
Overall length	11.5 m (full trailer, pole trailer) 12.5 m (simple trailer) 18 m (towing vehicle and semi-trailer with a quad axle-set with two steering axles) 19 m (towing vehicle and semi-trailer provided the axle-set is not a quad axle-set with two steering axles) 20 m (towing vehicle and full trailer (excluding load)) 22 m (towing vehicle and full trailer (including load if load overhanging the rear of the trailer does not exceed 2.3 m in width, or 1.15 m from the longitudinal centreline of the vehicle)) 22 m (towing vehicle and simple trailer) 20 m (any other vehicle combination)	Measurement does not include collapsible mirrors.
Height	4.25 m	Measurement does not include load-restraining devices, such as ropes, lashings, straps, chains, covers and related connectors and tensioning devices, that extend not more than 25 mm above the body of the vehicle, and that are not permanently or rigidly fixed to the vehicle.
Forward distance	8.5 m (full trailer, simple trailer, pole trailer with drawbar at full extension) 9.2 m (semi-trailer)	Forward distance is measured from: <ul style="list-style-type: none"> • full trailer: from the rear axis to the front of the trailer body/chassis (excludes drawbar and front axle set with its associated carriage) • simple trailer: from the rear axis to the centre point of attachment to the towing vehicle • pole trailer with two axle sets: from the front axis to the centre of the point of attachment to the towing vehicle with the drawbar fully extended. • pole trailer with one axle set: from the rear axis to the point of attachment to the towing vehicle with the drawbar fully extended • semi-trailer: from the rear axis to the centre of the kingpin A vehicle with a retractable axle must meet the dimension requirements whether the axle is in contact with the road or in the retracted position.

Dimension	Maximum distance	Comments
Rear overhang	<p>4 m (for a trailer first registered anywhere before 1 December 1989)</p> <p>The lesser of 4 m or 50% of forward distance (simple trailer, pole trailer with one axle set)</p> <p>The lesser of 4 m or 50% of wheelbase (full trailer, pole trailer with two axle sets)</p> <p>The lesser of 4.3 m or 50% of forward distance (semi-trailer [other than a class TC caravan trailer])</p> <p>The lesser of 4 m or 65% of forward distance (class TC caravan trailer that is a semi-trailer)</p>	<p>Rear overhang is measured from:</p> <ul style="list-style-type: none"> • pole trailer: from the rear axis or centre of bolster to the rear of the vehicle, whichever is the greater. • other trailers: from the rear axis to the rear of the vehicle. <p>A vehicle with a retractable axle must meet the dimension requirements whether the axle is in contact with the road or in the retracted position.</p>
Ground clearance	The greater of 100 mm or 6% of the distance from the nearest axle to the point where the ground clearance is measured	Measurement does not include flexible mudflaps, wheels, tyres or devices designed to discharge static electricity.
Front overhang	<p>2.04 m radius arc ahead of:</p> <ul style="list-style-type: none"> • kingpin centre (semi-trailer) • tow coupling centre (simple trailer) • turntable centre (full trailer) • turntable centre on towing vehicle (pole trailer) 	<p>Front overhang is measured to the foremost point of the trailer (except for full trailer), from the following positions:</p> <ul style="list-style-type: none"> • semi-trailer: centre of kingpin • full trailer: centre of turntable to front of trailer body (excludes drawbar) • simple trailer: centre of tow coupling • pole trailer: centre of turntable on towing vehicle.
Rear trailing unit distance	14.5 m (A-train, B-train, towing vehicle and two trailers)	Rear trailing unit distance is measured from the centre of the fifth wheel or tow coupling on the towing vehicle to the rear of the combination.
Articulated vehicle point of attachment	No further rearward than the rearmost axle of the leading trailer	Applies to B-train leading trailer only.
Coupling point distance	30% of forward distance of semi-trailer	<ul style="list-style-type: none"> • Applies to A-train only. • Measure from the rear axis of the semi-trailer to the tow coupling centre of the full trailer.
Inter-vehicle spacing	4 m (between any two consecutive vehicles in a combination)	<ul style="list-style-type: none"> • Inter-vehicle spacing is the distance between a towing vehicle (excluding the tow coupling shroud) and trailer (excluding the drawbar or tow rope or front dolly). • The inter-vehicle spacing between a towing vehicle and a full trailer must not be less than the greater of 1 m or half the width of the foremost point of the trailer (excluding the drawbar and front dolly assembly).
Turning circle	25 m outside diameter	<ul style="list-style-type: none"> • The vehicle combination must be able to complete a 360 degree turn in either direction. • No part of the trailer must encroach outside the outside diameter.

Vehicle exterior 2-2 Dimensions (cont.)

Table 2-2-4. Hazard warning equipment requirements for vehicles that exceed the dimensions in Table 2-2-3 (see Figure 2-2-8 for vehicle category thresholds) (Note 3)

Vehicle category (See Figure 2-2-5)	Dimension	Limits (up to and including)	Required hazard warning equipment
Category 1	Width/forward distance Length Front overhang Rear overhang	2.5 m/11.4 m, or 3.1 m/10.5 m, or 3.7 m/8.5 m, or 25 m, or 7 m, or 7 m	Flags ¹ or panels ² fitted on each side at the front and rear
Category 2 (not including category 1)	Width/forward distance Length Front overhang Rear overhang	2.5 m/13.3 m, or 4.5 m/8.5 m, or 35 m, or 10 m, or 10 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear if more than 3.1 m wide
Category 3 (not including category 2)	Width/forward distance	2.5 m/20 m 5 m/20 m 5 m/8.5 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear
Category 4 (not including category 3)	Width/forward distance	11 m/20 m 11 m/8.5 m	1. Panels ² fitted on each side at the front and rear 2. OVERSIZE sign ³ fitted at the front and rear

Note Additional operational requirements may apply, eg if operated at night.

1 **Flags:**

- must be fluorescent yellow
- must be at least 400 mm long x 300 mm wide

2 **Hazard warning panels:**

- must be reflective yellow-green with a reflective orange diagonal stripe
- must be at least of the minimum dimensions and of the colours specified in **Figure 2-2-6**

3 **OVERSIZE sign:**

- must be black lettering on yellow-green background
- must be at least 300 mm x 1100 mm in size
- may be in two parts: OVER and SIZE.

Note 1 Definitions

Specialist overdimension trailer means a trailer where its primary purpose is to carry out a specialist function that requires overdimension equipment, and the dismantling of the equipment would make it unusable for its intended purpose, or it would take more than four hours to dismantle the equipment.

Caravan trailer means a trailer that is permanently equipped with features intended to make the vehicle suitable as a dwelling place, and must include at least one sleeping berth and one table, both of which may be of a design that allows them to be retracted or folded away.



High-productivity motor vehicle (HPMV) means a heavy motor vehicle or heavy combination vehicle that carries a divisible load and with or without a load:

- a) exceeds a gross mass of 44,000 kg, or
- b) varies from a dimension requirement in **Table 2-2-3**, (other than width, height or ground clearance), or
- c) both (a) and (b), and
- d) operates on an HPMV permit issued by a road controlling authority.

Road controlling authority means the authority, body or person having control of the road (eg the NZTA, a regional council or an authorized delegate).

Note 2 An HPMV that does not comply with a dimension requirement in **Table 2-2-3** may comply instead with a variation to that requirement as specified on the HPMV permit. The permit must be produced for inspection if required. Any other conditions specified on the permit are not required to be enforced at CoF.

Note 3 An HPMV is not required to comply with the Hazard warning equipment requirements of **Table 2-2-4**.

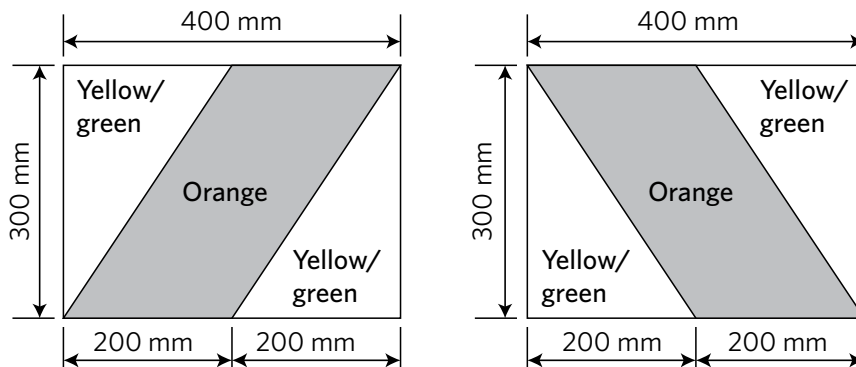


Figure 2-2-6. Hazard panel details

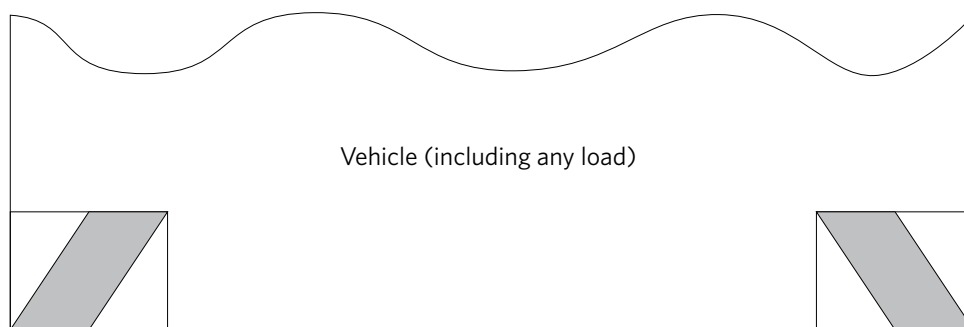


Figure 2-2-7. Hazard panel location and orientation

Vehicle exterior **2-2 Dimensions (cont.)**

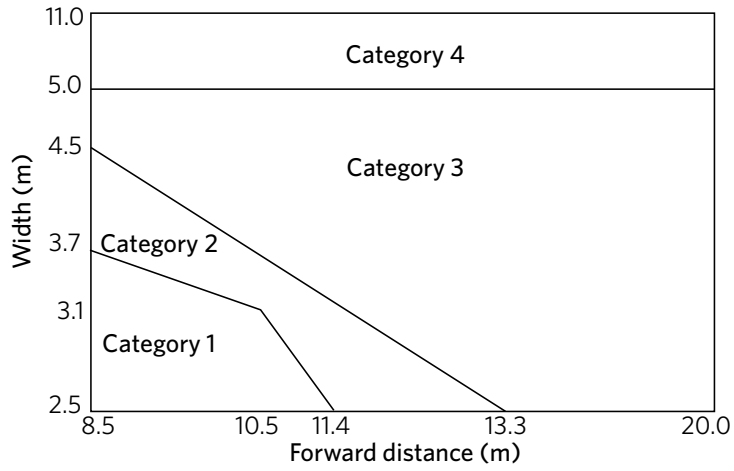
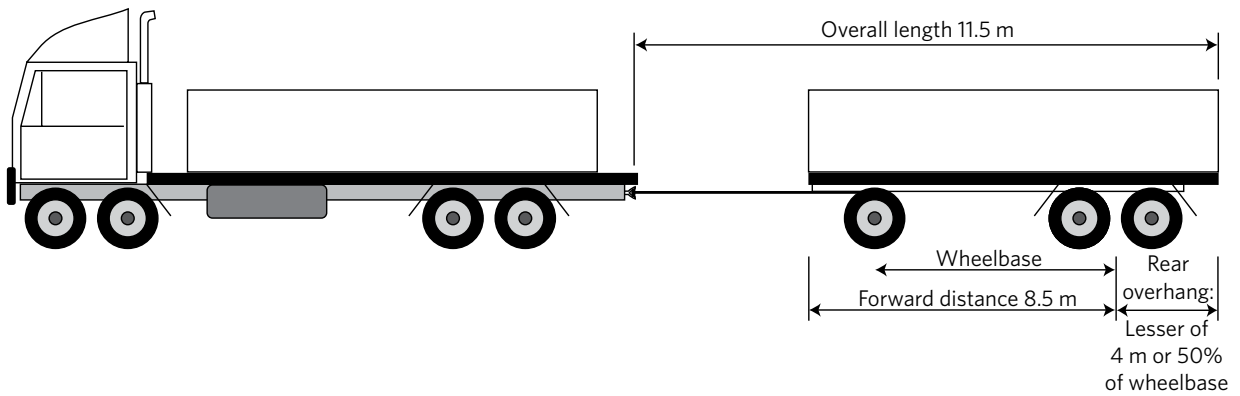
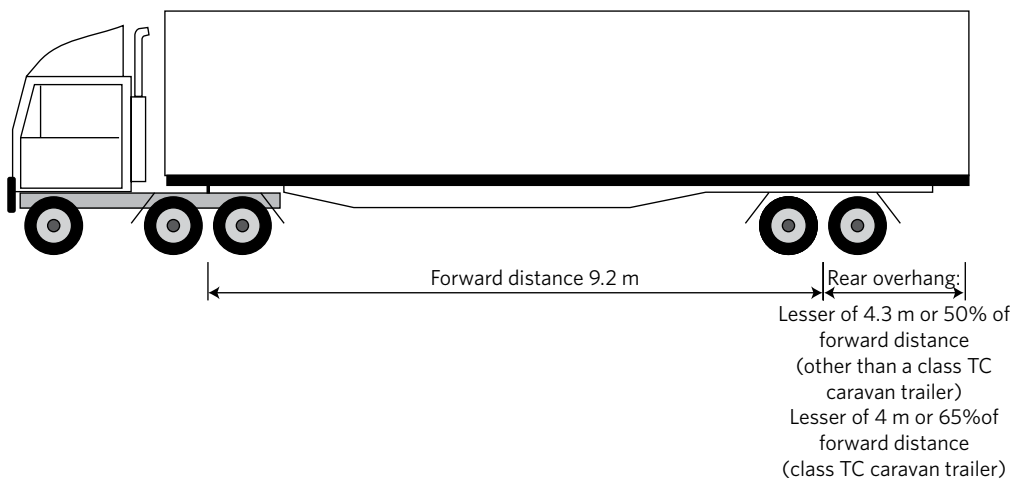


Figure 2-2-8. Vehicle categories and width/forward distance thresholds.

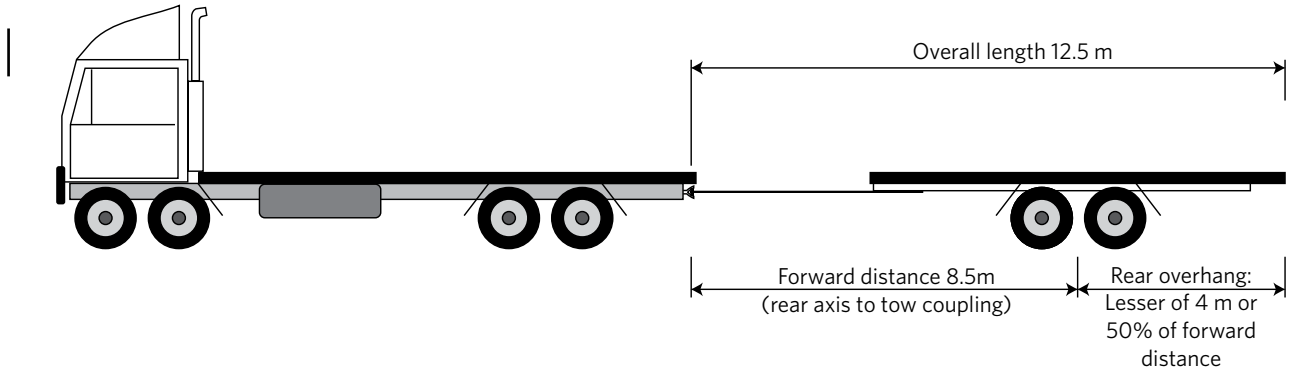
Use this figure to determine the correct category referred to in **Table 2-2-4**



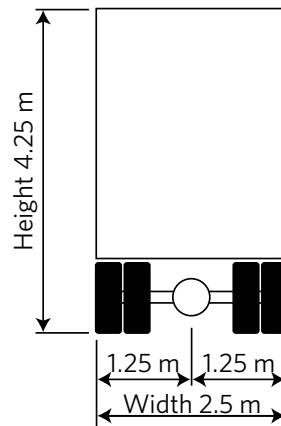
Full trailer



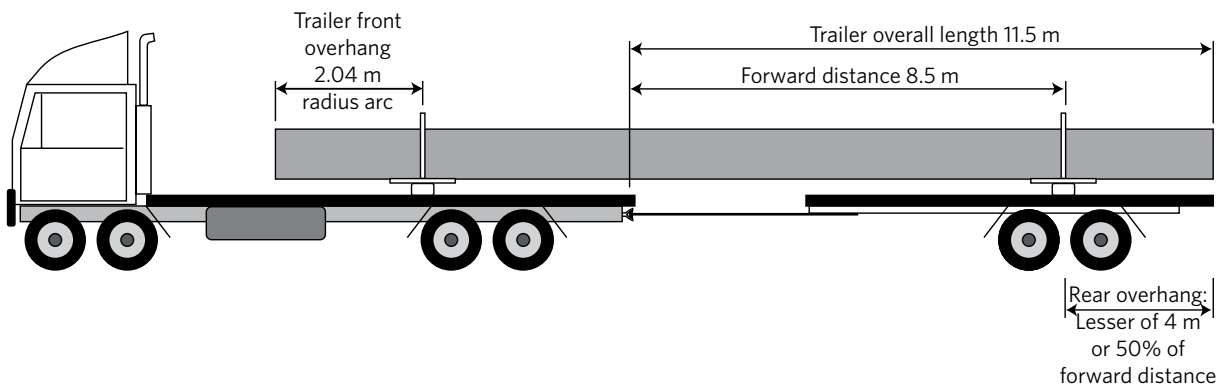
Semi-trailer



Simple trailer

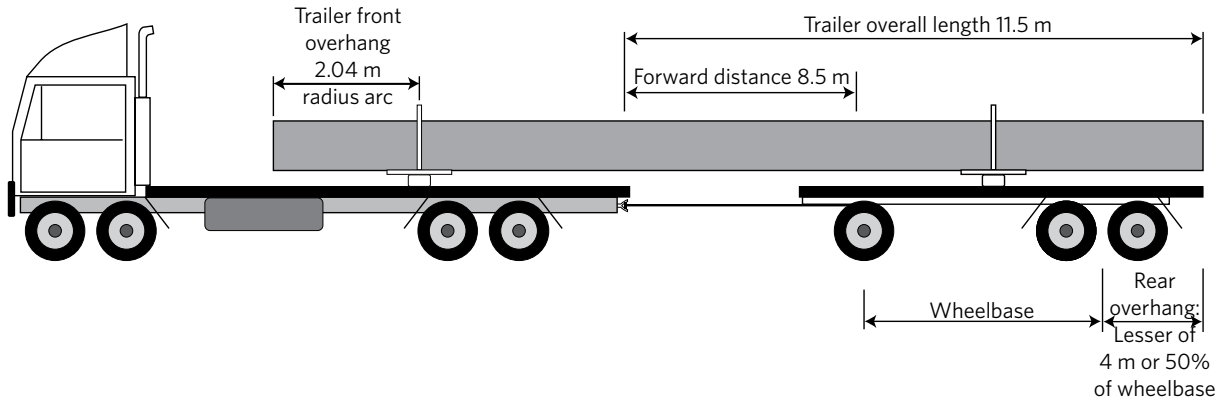


Trailer height and width

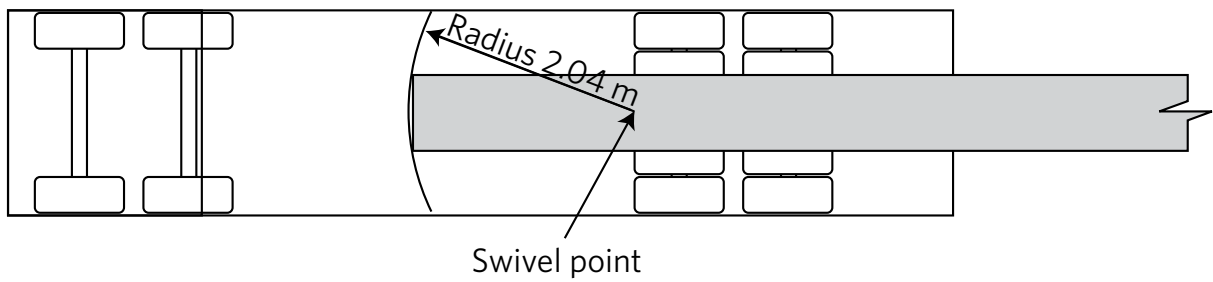


Pole trailer: one axle set

Vehicle exterior 2-2 Dimensions (cont.)



Pole trailer: two axle sets



Pole trailer: front overhang

Figure 2-2-9. Heavy trailer dimensions

Vehicle exterior

2-3 Glazing

Summary of legislation

Applicable legislation

- Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999

Permitted glazing

1. Trailers may be fitted with any type of glazing, including plastic glazing.

Glazing condition

2. Glazing must be mechanically sound, strong and securely affixed to the vehicle.
3. Glazing must not have a mirrored effect sufficient to dazzle other road users.

Reasons for rejection

Glazing condition

1. Glazing is damaged (**Note 1**), has deteriorated or is modified (**Note 2**) so that its strength or mechanical performance is adversely affected.
2. Glazing is not securely affixed to the vehicle.
3. Glazing has a mirrored effect sufficient to dazzle other road users.

Note 1 Damage includes any unrepaired damage and attempted visible repairs.

Note 2 Modify means to change a vehicle from its original state by altering, substituting, adding or removing any structure, 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 equivalent undamaged new structures, systems, components or equipment.

Vehicle exterior**2-4 Heavy trailer equipment****Summary of legislation****Applicable legislation**

- Land Transport Rule: Heavy Vehicles 2004

Mandatory equipment

1. An outrigger fitted to a vehicle must have a locking device to prevent its inadvertent extension or separation.

Condition

2. An outrigger locking device must be effective.

Reasons for rejection**Mandatory equipment**

1. An outrigger fitted to a vehicle does not have a locking device to prevent its inadvertent extension or separation.

Condition and performance

2. An outrigger locking device is bent, worn or otherwise damaged or has deteriorated so that it is not effective.
3. An outrigger locking device does not lock the outrigger in its locked position.

Note 1 **Outrigger** means, in relation to a vehicle fitted with a crane or a hoist, a device fitted to the vehicle that extends and stabilises the vehicle while the crane or hoist is in use.

