

National Code of
Practice

BUILDING SMALL TRAILERS

INFORMATION FOR
MANUFACTURERS AND
SUMMARISED CONSTRUCTION REQUIREMENTS
FOR TRAILERS LESS THAN 4.5 TONNES
AGGREGATE TRAILER MASS



1
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Vehicle Standards Bulletin

Other Vehicle Standards Bulletins issued as at June 1999

- VS B 1National Code of Practice – Building Small Trailers
- VS B 2Maximum Road Speed Limiting for Heavy Trucks and Buses
- VS B 3 Vehicle Safety Recalls Update
- VS B 4National Code of Practice – Steering Conversions for Left Hand Drive Vehicles
- VS B 5ANational Code of Practice – Commercial Manufacture and Installation of Additional Seats
- VS B 5B.....National Guidelines – Construction and Installation of Additional Seats by Individuals
- VS B 6National Code of Practice – Heavy Vehicle Modifications
- VS B 7ANational Code of Practice – Design Parameters Necessary for Compliance with ADR 59/00 – Omnibus Rollover Strength
- VS B 7B.....National Code of Practice – Design Parameters Necessary for Compliance with ADR 59/00 – Omnibus Rollover Strength
- VS B 8Compliance Plate Approval Holders – Low Volume Vehicles and Full Volume Used Motorcycles
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GENERAL

1. INTRODUCTION

The Motor Vehicle Standards Act 1989 and Regulations came into force on 1 August 1989. The Act makes it an offence to import, sell or present for first registration a new or imported vehicle which does not comply with the National Standards for Road Vehicles and Vehicle Components (the National Standards) except under circumstances where an exemption has been granted by the Administrator of Vehicle Standards (the Administrator). The Australian Design Rules (ADRs) for Motor Vehicles and Trailers have been prescribed as the National Standards.

The Federal Act introduced a single national uniform set of requirements for the design and construction of vehicles to replace State and Territory legislation which required compliance with the ADRs as a condition of registration.

This Vehicle Standards Bulletin summarises the construction requirements for caravans and trailers necessary to meet the ADRs, and trailers built to meet the requirements in this bulletin are accepted as meeting the ADRs.

The ADRs and Australian Standards referenced in this bulletin may be amended from time to time and it is the trailer builder's responsibility to ensure the latest requirements are being met.

2. CERTIFICATION

The Administrator has determined that trailers of an Aggregate Trailer Mass (ATM) up to 4.5 tonnes will not be subject to certification. Therefore manufacturers of these trailers are not required to affix compliance plates to their trailers.

Instead, manufacturers must include the following statement on the trailer plates described in Section 3 below:

This trailer was manufactured to comply with
the Motor Vehicle Standards Act 1989.

It is the responsibility of the person or company manufacturing a trailer to ensure that the trailer when first supplied to the market meets the requirements of the ADRs.

3. TRAILER PLATE

On the outside of every trailer there must be affixed in a prominent position protected from accidental damage, a plate showing at least the following information.

- Manufacturer's Name
- Trailer Model
- Vehicle Identification Number (described in Section 4)
- Date of Manufacture
- Aggregate Trailer Mass
- The Certification Statement (specified in Section 2)

This plate may also include additional information such as Tare Mass and Gross Trailer Mass (GTM) and the tyre placard information in Section 16.

The plate must be of durable non-corrosive metal and permanently affixed to the trailer by pop rivets, hammer drive screws or welding. Adhesives are not acceptable. The information must be legible and embossed, indented, etched or engraved in letters and numbers not less than 2.5 mm high.

4. VEHICLE IDENTIFICATION NUMBER

All trailers must be identified by means of a 17 character Vehicle Identification Number (VIN). The VIN to be used is that specified by the International Standards Organisation, otherwise known as an ISO VIN. Its most important use is in the tracing and recording of stolen vehicles and as such, it is recommended that the VIN be stamped on a substantial part of the trailer in addition to the mandatory requirements specified in Section 3.

Manufacturers of up to 500 trailers per year must obtain their VIN structure from their local registering authority.

Manufacturers of more than 500 trailers per year must contact the National Vehicle Identification Coordinator at the NEVDIS Administration Unit on Ph. 02 9218 6546 for information about their VIN structure and about the method of reporting their VINs.

5. REGISTRATION

Registration of vehicles remains the responsibility of the States and Territories. Trailer manufacturers should consult the registering authority, where their trailers will be registered, for registration procedures, such as inspection.

5.1 Registration Plate

Provision must be made for mounting of a 372 mm x 136 mm registration plate to the rear of every trailer so that no part of the plate is more than 1300 mm from the ground.

5.2 Registration Label Holder

Every trailer is required to display its registration label on the left hand side. If there is no window in this location, a registration label holder must be fitted.

6. RESPONSIBILITY FOR SAFETY

The ADRs do not address all areas of safety of vehicles. Manufacturers should note that they have a responsibility for the overall safety of their trailers. Manufacturers should also be aware that the Trade Practices Act provides for goods with any safety related defects to be recalled and the problem rectified.

The proper procedures for recall are contained in '*Procedures for the Rectification of Safety Related Defects in Vehicles and Related Products*'.

This recall code is available from:

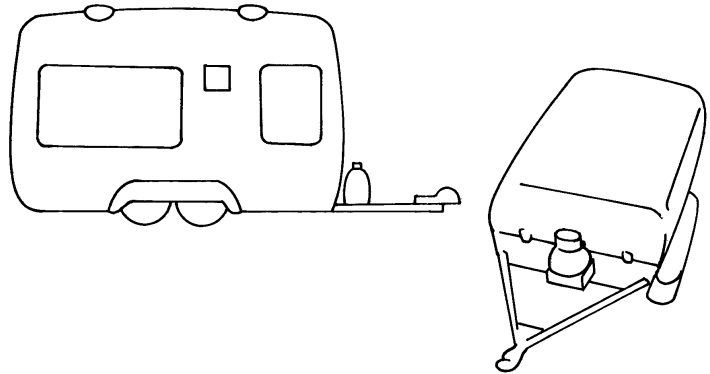
Federal Office of Road Safety
GPO Box 594
CANBERRA ACT 2601

There is provision for compulsory recall in the Trade Practices Act should a manufacturer not voluntarily meet its recall obligations.

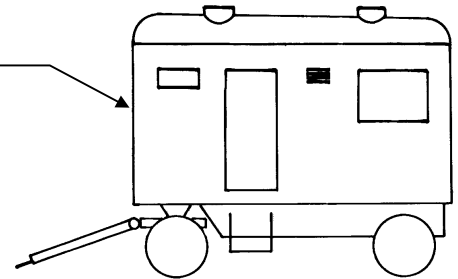
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TECHNICAL REQUIREMENTS**7. TYPICAL TRAILERS COVERED BY THIS BULLETIN****7.1 Caravan**

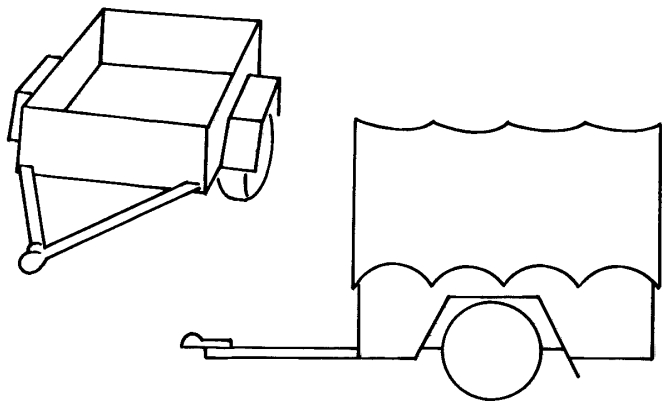
An enclosed trailer which is intended for use as a mobile home or living quarters when parked. It will usually provide fixed sleeping accommodation and/or facilities for the preparation of food. A trailer permanently equipped with a folding and stowable roof (such as a camper trailer) is a caravan. Enclosed trailers constructed for the accommodation of people when parked such as workers' amenity trailers, mobile kitchens or mobile offices are also regarded as caravans.



Dog trailer
type caravan

**7.2 Box Trailer**

A general purpose trailer with a loadspace which is bounded by vertical sides and which is intended to be towed by a car or a light commercial vehicle. This category includes a box trailer fitted with a canopy but which is not equipped as a caravan, eg. is equipped with temporary sleeping accommodation only.

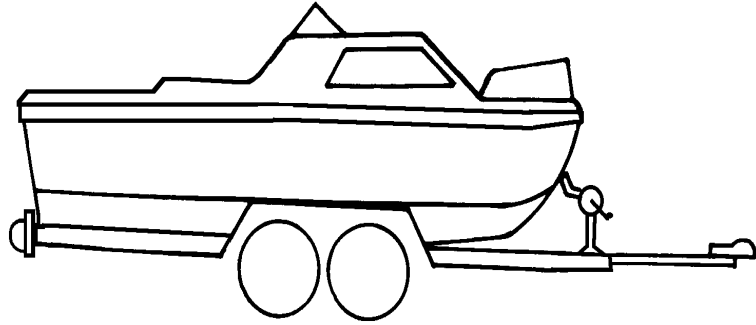
**7.3 Tray Body
(Table Top)
Trailer**

A general purpose trailer with flat load deck which is not bounded by vertical sides.

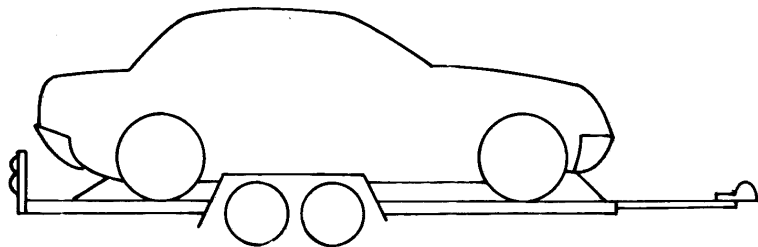


7.4 Boat Trailer

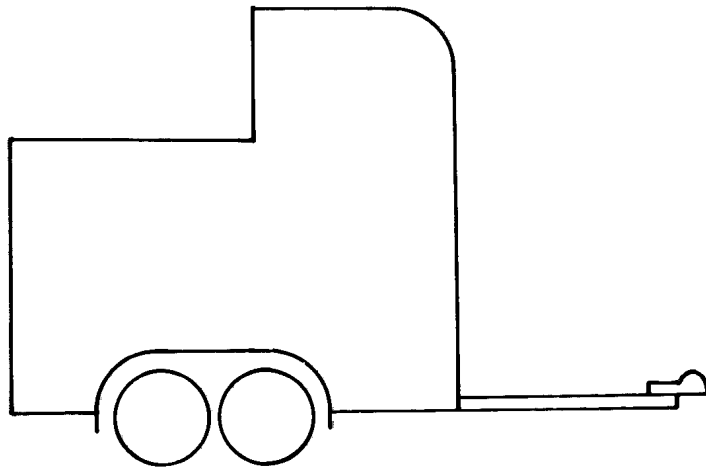
A trailer built specifically to carry a boat. The boat can form part of the trailer when being towed - for instance, lamps and indicators can be attached to it.

**7.5 Car Trailer**

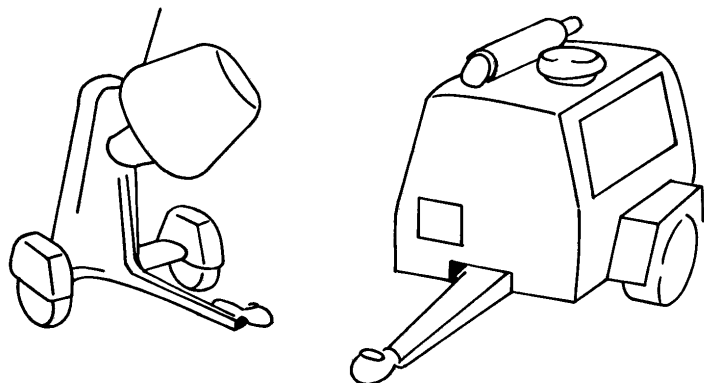
A trailer built specifically to carry a motor vehicle such as a passenger car or racing car.

**7.6 Horse Float**

A trailer built to carry one or more horses or other similar livestock.

**7.7 Plant Trailer**

A trailer which, instead of a loadspace, has fixed to it machinery such as an air compressor, concrete mixer or drilling rig.



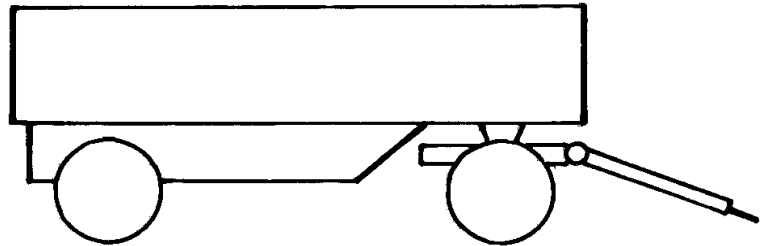
7.8 Pig Trailer

A trailer having one axle group near the middle of the length of its goods carrying surface.

NOTE: All trailers shown in Sections 7.1 to 7.7, except for the dog trailer type caravan identified, are pig trailers.

7.9 Dog Trailer

A trailer with 2 axle groups of which the front axle group is steered by connection to the drawing vehicle.



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8. DEFINITIONS

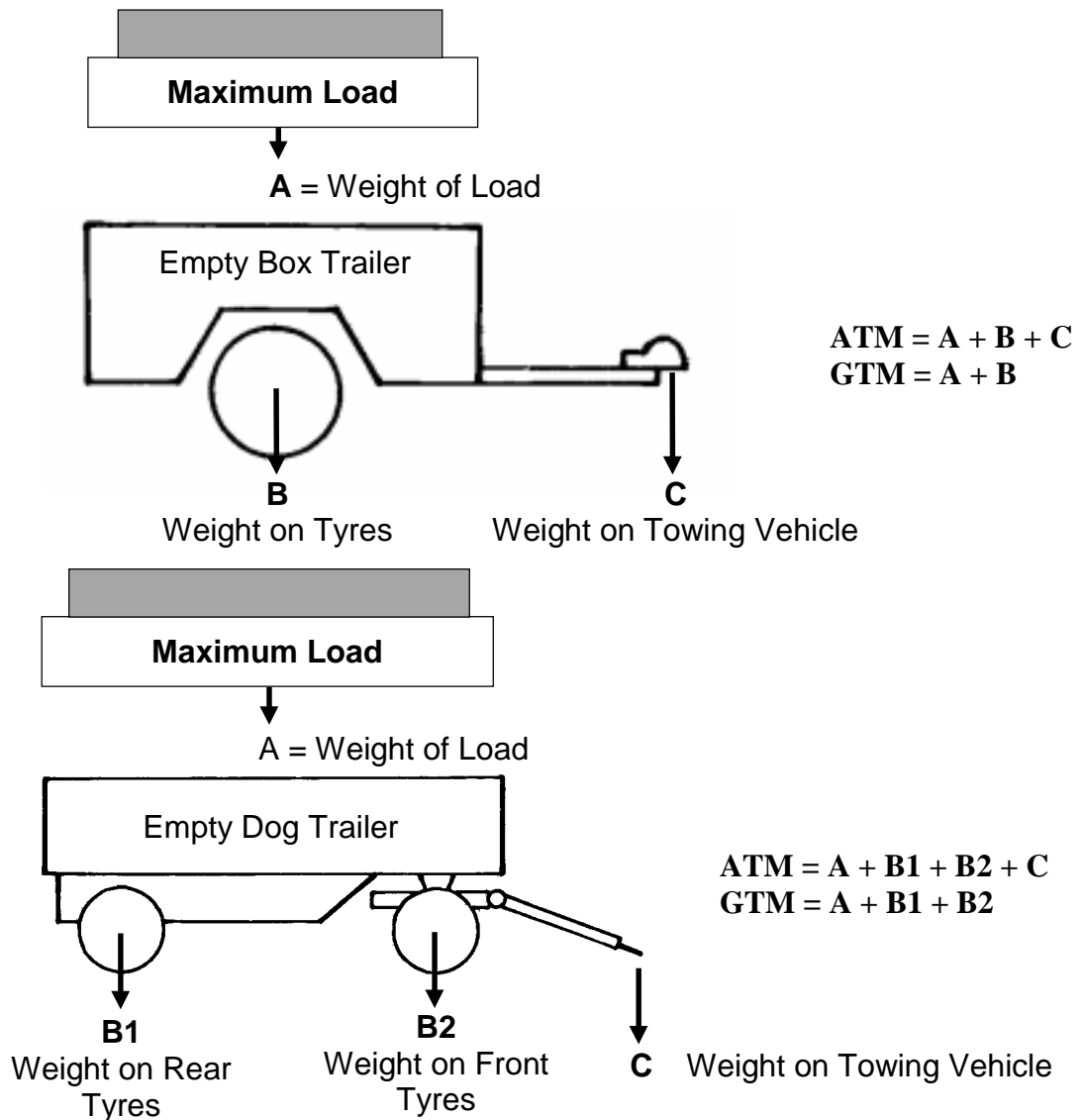
8.1 Aggregate Trailer Mass (ATM)

The total mass of the laden trailer when carrying the maximum load recommended by the manufacturer. This includes any mass imposed onto the drawing vehicle when the combination vehicle is resting on a horizontal supporting plane.

8.2 Gross Trailer Mass (GTM)

The mass transmitted to the ground by the axle or axles of the trailer when coupled to a drawing vehicle and carrying its maximum load approximately uniformly distributed over the load bearing area.

NOTE: These definitions are in accordance with the ADRs and may differ from other definitions in use.



Note: Except for semi-trailers, the difference between the ATM and GTM is usually small.

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9. LIGHTING

The requirements specified in the ADRs for the performance and installation of lamps and reflectors are based on international standards.

The performance requirements usually involve tests done in a laboratory to show compliance. Trailer manufacturers must ensure that the lamps and reflectors fitted to their trailers comply with these performance requirements.

This may be done:

- either** by using lamps and reflectors where their manufacturer provides with each, a written assurance that the item (suitably identified) complies with the ADR applicable to its recommended use when fitted according to the instructions supplied;
- or** by having the lamps and reflectors tested to the ADR requirements and obtaining from the laboratory conducting the tests, a test report including the conclusion that the item complies with the ADR applicable to its intended use when fitted according to the instructions supplied with the report;
- and** in either case, fitting the lamps and reflectors according to the instructions provided, making sure that no part of the trailer or its equipment interferes with the light given out.

The trailer manufacturer should retain these documents in case verification of compliance is needed.

Lamps and reflectors complying with certain International Regulations, referred to as ECE Regulations, are acceptable as complying with some of the lighting ADRs. These ECE Regulations are identified in the particular sections in this bulletin relating to the location requirements of each type of lamp on the trailer.

Lamp manufacturers using certification to ECE requirements as the basis of compliance with the corresponding ADR requirements will provide the ECE approval mark on their lamps and use this for identification of the component on the written assurance provided with each item. ECE approved lamps would also be accompanied by fitting instructions.

A typical ECE approval mark found on a rear direction indicator is as follows:

2a **2a** – identifies the type of lamp; in this case a rear direction indicator.



4 – identifies the country issuing the ECE approval.



→ – identifies the side of the vehicle towards which the lamp is to be mounted.

6R00217 **6R00217** – identifies the ECE approval number; in this case incorporating the ECE Regulation number 6.

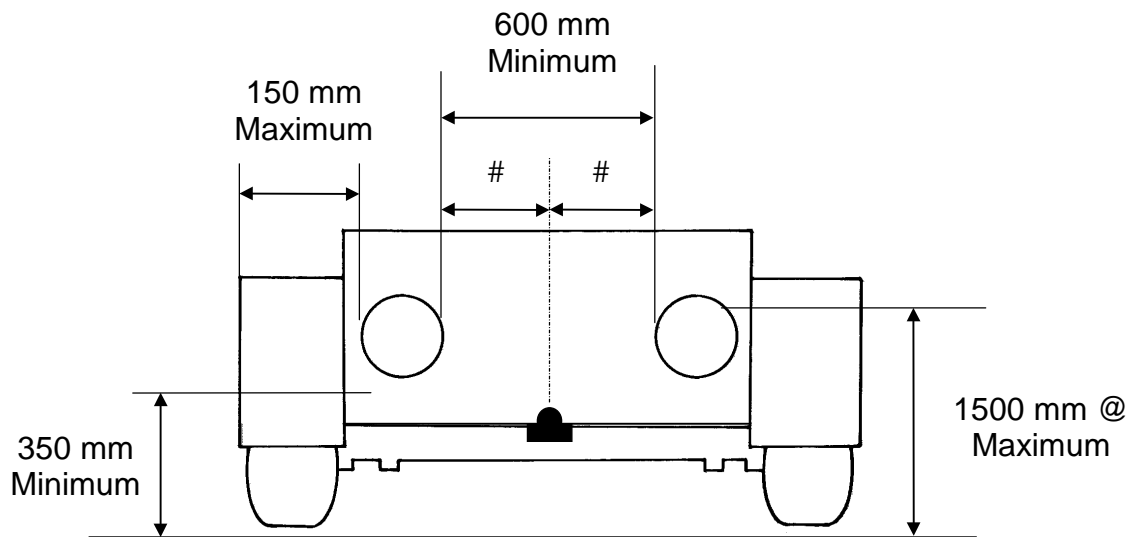
Unless specifically mentioned, lamps on a trailer must be wired to operate with the corresponding lamps on the towing vehicle and where pairs of lamps or reflectors are fitted, they must be spaced equally on either side of the centre line of the trailer.

Lamps on a trailer must not show red light to the front or white light to the rear.

The location requirements for each type of lamp and reflector are given in the sketches in the corresponding sections following. The notation ADR 49/- refers to the latest version of ADR 49/00 and ECE R7/- refers to the latest version of ECE Regulation 7.

9.1 Front Position Lamps

Two front position lamps showing white light to the front of the trailer must be fitted to trailers which are more than 1600 mm wide. However, the front position lamps may be amber in colour if they also perform the function of the side marker lamps (see Section 9.7.2). Each lamp must comply with ADR 49/-. Lamps having ECE R7/- approval marks are accepted as complying with this ADR.



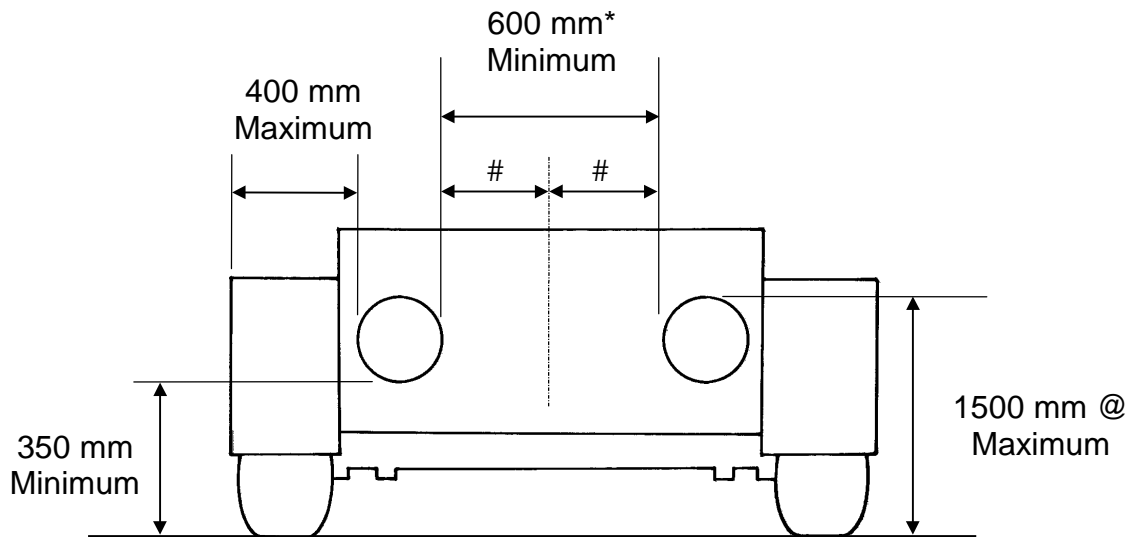
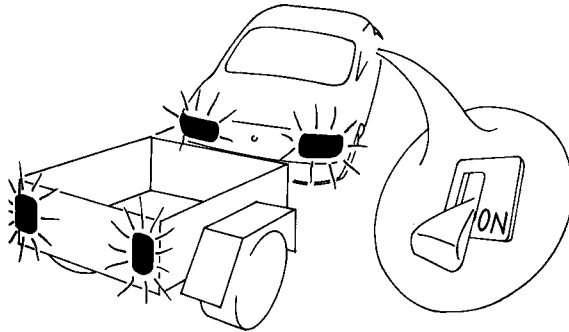
These 2 measurements must be the same.

@ 2100 mm if the shape of the bodywork makes it impractical to keep within 1500 mm.

9.2 Rear Position Lamps (Tail Lamps)

Two rear position lamps showing red light to the rear must be fitted to each trailer.

Each lamp must comply with ADR 49/-. Lamps having ECE R7/- approval marks are accepted as complying with this ADR.



These 2 measurements must be the same.

* This measurement may be reduced to 400 mm if overall width of the trailer is less than 1300 mm.

@ 2100 mm if the shape of the bodywork makes it impractical to keep within 1500 mm.

9.3 Number Plate Lamp

At least one rear registration plate lamp must be fitted to each trailer and be positioned so that the registration plate is illuminated. None of the light from this lamp may be directed rearwards.

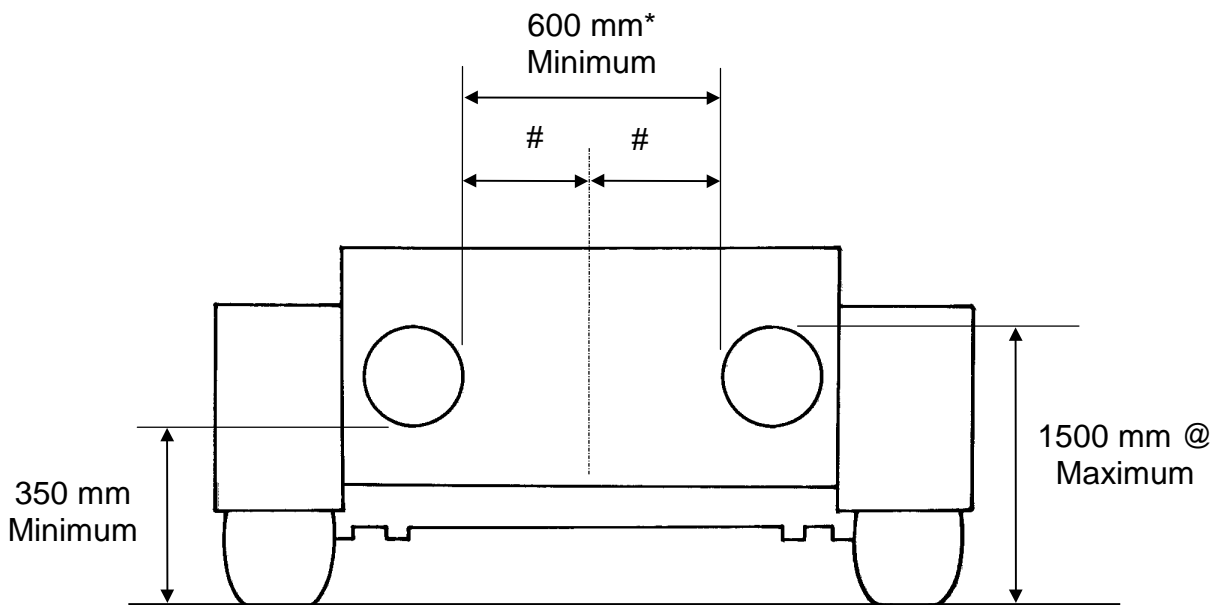
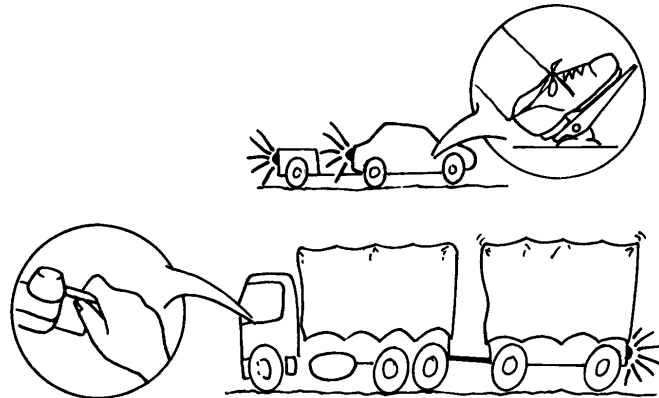
Each lamp must comply with ADR 48/-. Lamps having ECE R4/- approval marks are accepted as complying with this ADR.

9.4 Stop Lamps (Brake Lamps)

At least two stop lamps showing red light to the rear must be fitted to the trailer. Additional lamps may be fitted provided the height requirements shown below are met.

If the trailer has independent brakes, these lamps must also light up when the trailer brakes are applied on their own.

Each lamp must comply with ADR 49/-. Lamps having ECE R7/- approval marks are accepted as complying with this ADR.



These 2 measurements must be the same.

* This measurement may be reduced to 400 mm if overall width of the trailer is less than 1300 mm.

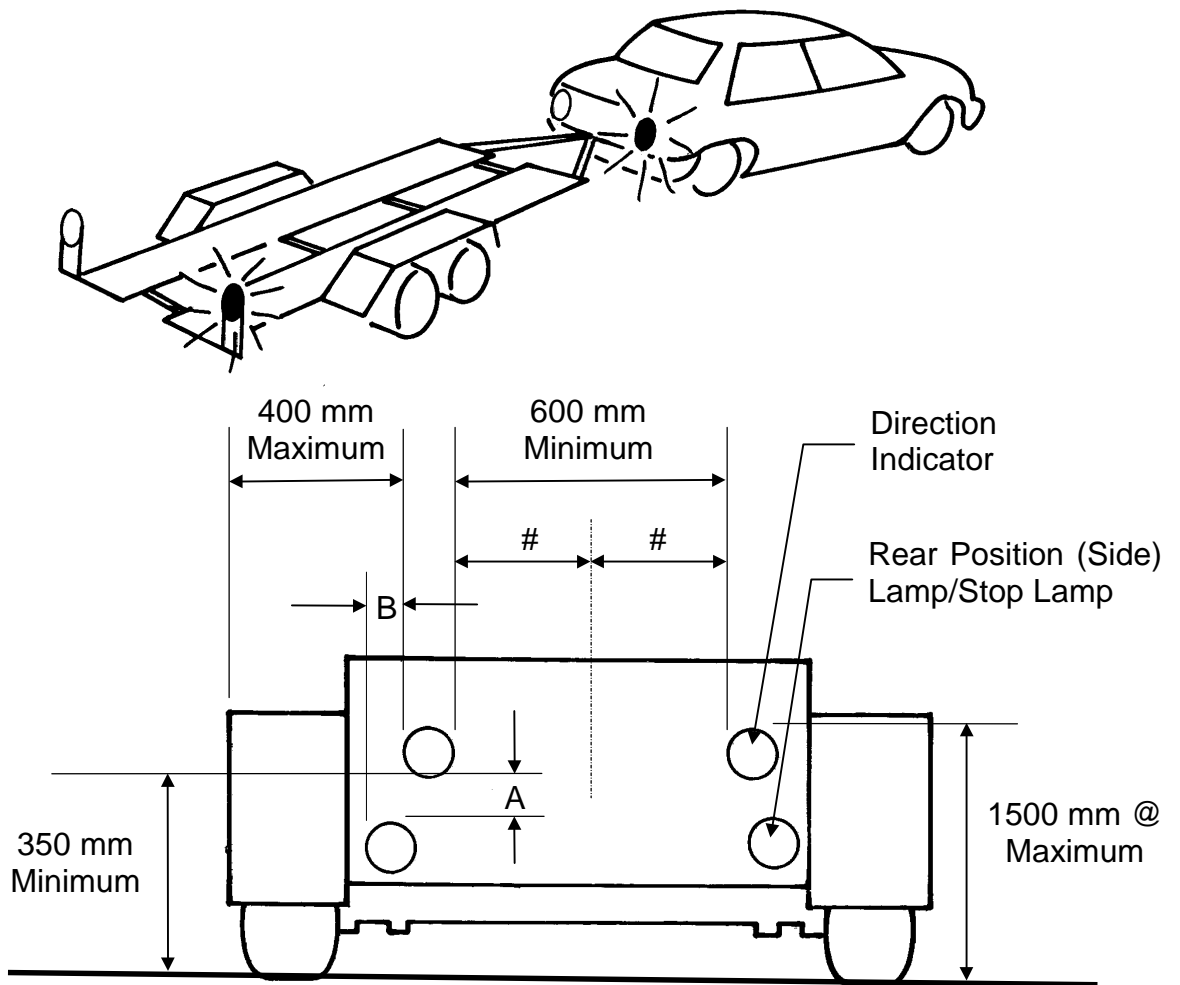
@ 2100 mm if the shape of the bodywork makes it impractical to keep within 1500 mm.

9.5 Direction Indicator Lamps (Turn Signals)

Two direction indicator lamps showing amber light to the rear must be fitted to the rear of each trailer.

Each lamp must comply with ADR 6/-. Lamps having ECE R6/- marks are accepted as complying with the ADR.

The flashing rate of the indicators, must be within the range of 60 to 120 flashes per minute.



These measurements must be the same.

@ 2100 mm if the structure of the vehicle makes it impractical to keep within 1500 mm.

If distance **A** is less than 300 mm then distance **B** must be less than 50 mm.

9.6 Hazard Warning Lamp

All the direction indicator lamps on the trailer must operate simultaneously when the hazard warning lamps of the towing vehicle are operating.

9.7 End-Outline Marker (Clearance) Lamps and Side Marker Lamps

These lamps must be fitted to large trailers so that their overall length and width can be seen at night.

9.7.1 End-Outline Marker (Clearance) Lamps

Two end-outline marker lamps showing white light to the front and two lamps showing red light to the rear must be fitted to trailers more than 2.1 metres wide. Each lamp must comply with the requirements of ADR 49/-. Lamps having ECE R7/- approval marks are acceptable as complying with the ADR.

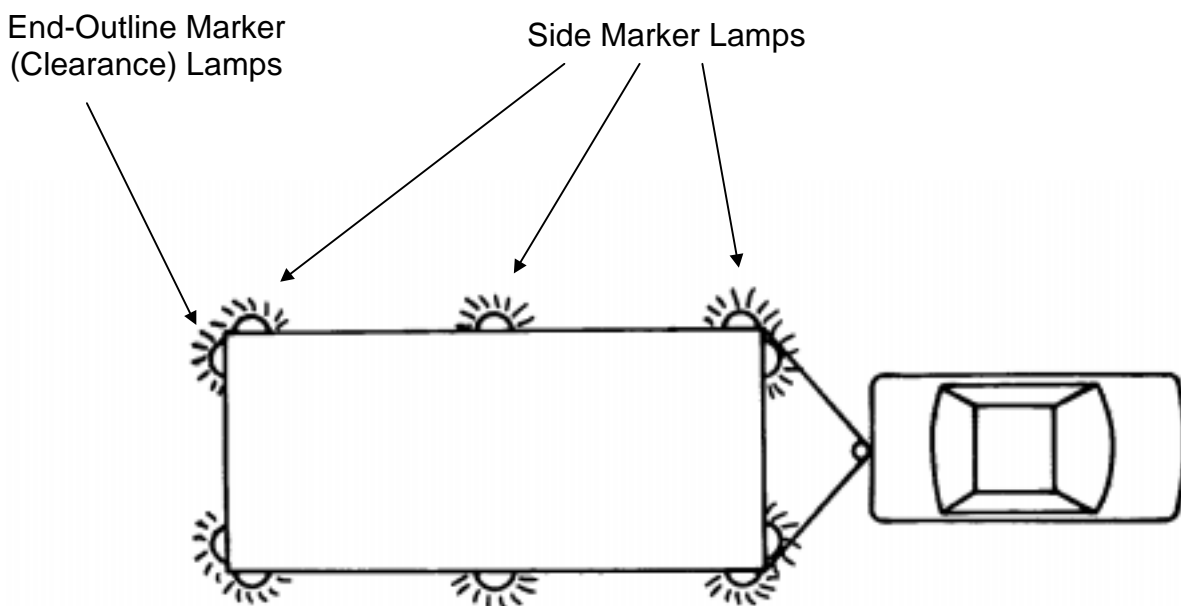
If a trailer, such as a boat trailer, has no structure at the front and at the rear to which end-outline marker lamps can be attached then, fitting one end-outline marker lamp midway on each side is acceptable.

9.7.2 Side Marker Lamps

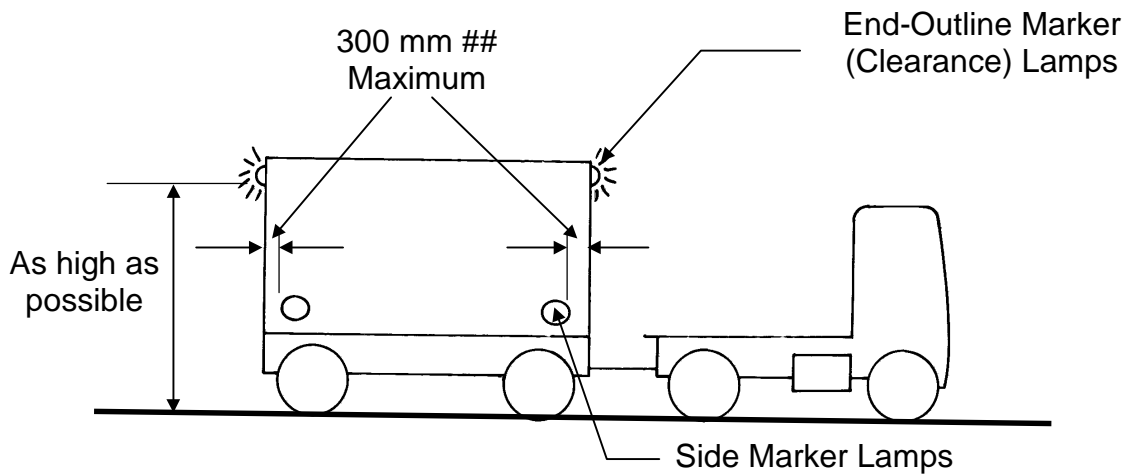
Two side marker lamps showing amber light to the front and red light to the rear must be fitted on each side of trailers over 2.1 metres wide, or having a total length over 7.5 metres (including the drawbar).

If a trailer is over 7.5 metres in total length, an additional side marker lamp must be fitted on each side midway between the front and the rear lamps.

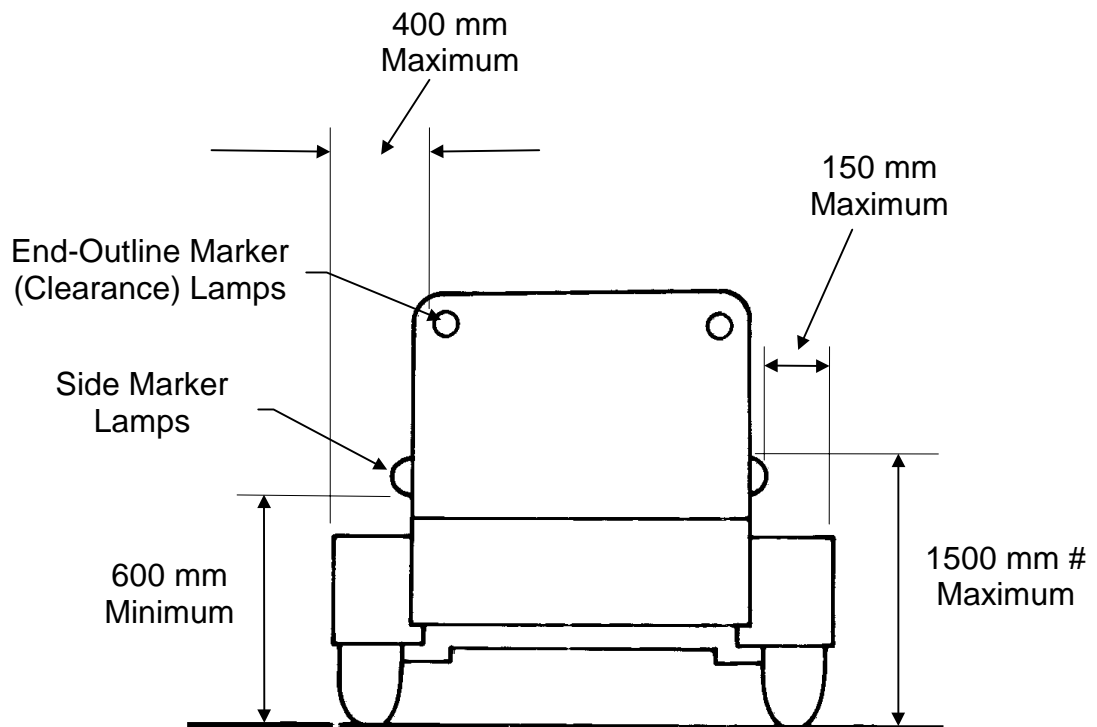
Each lamp must comply with the requirements of ADR 45/-.



Side Marker Lamps (cont)



If impractical to be within limits due to construction reasons, eg on a boat trailer, the lamps must be as close as possible to the front and/or rear of the vehicle as applicable, and where the distance between the front and rear lamps would then be less than 2.5 metres, only the rearmost pair of lamps need be fitted.



2100 mm if the shape of the bodywork makes it impractical to keep within 1500 mm.

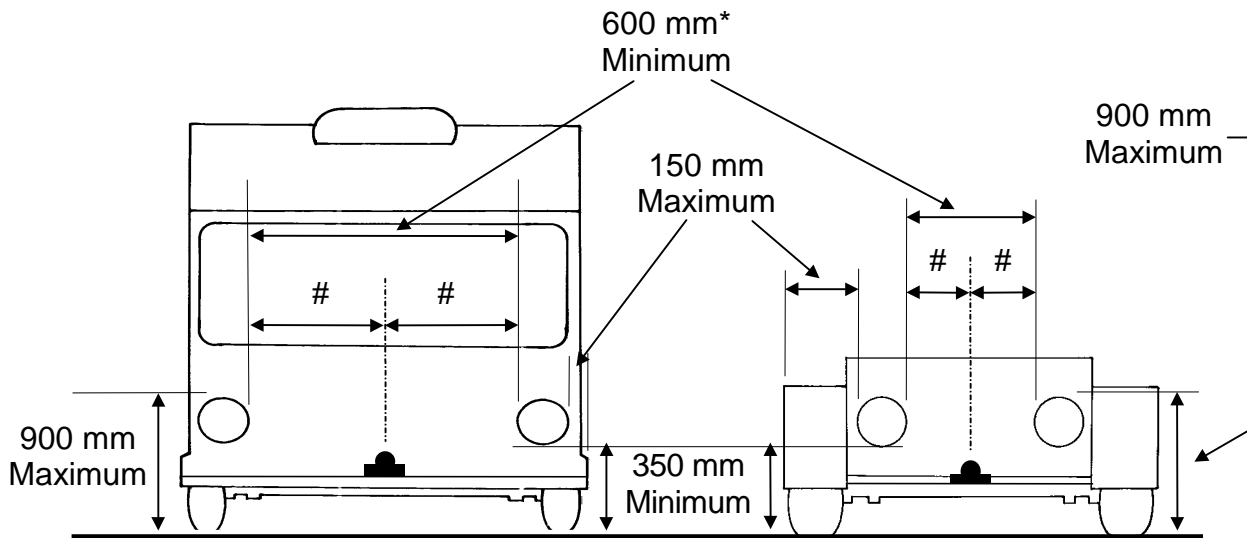
9.8 Reflex Reflectors (Non triangular)

Reflex reflectors are reflectors of a conventional lens type and must comply with ADR 47/--.

Reflectors having ECE R 3/- approval marks are accepted as complying with the ADR.

9.8.1 Front Reflex Reflectors

Two white reflectors must be fitted to the front of each trailer.

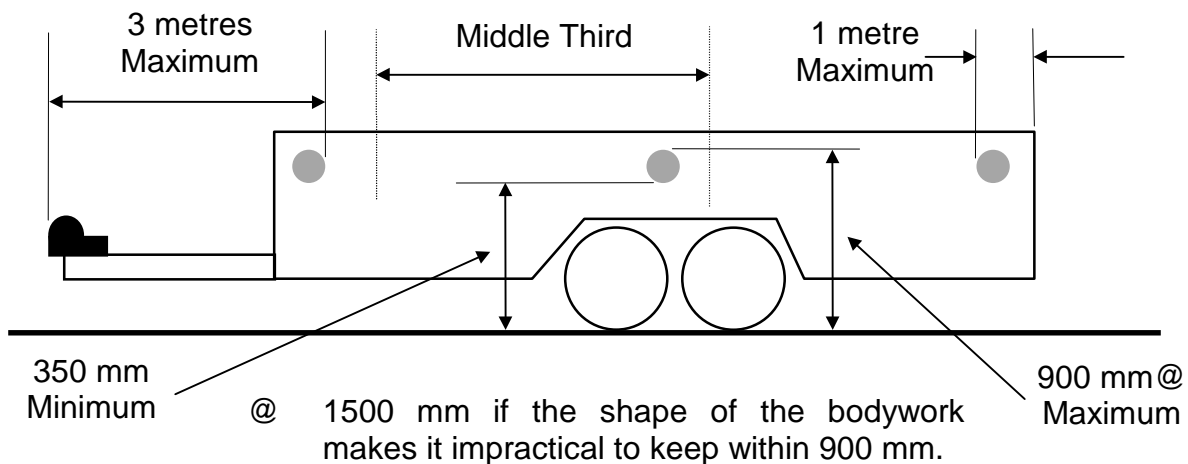


- # These 2 measurements must be the same.
- * This measurement may be reduced to 400 mm if overall width of the trailer is less than 1300 mm.

9.8.2 Side Reflex Reflectors

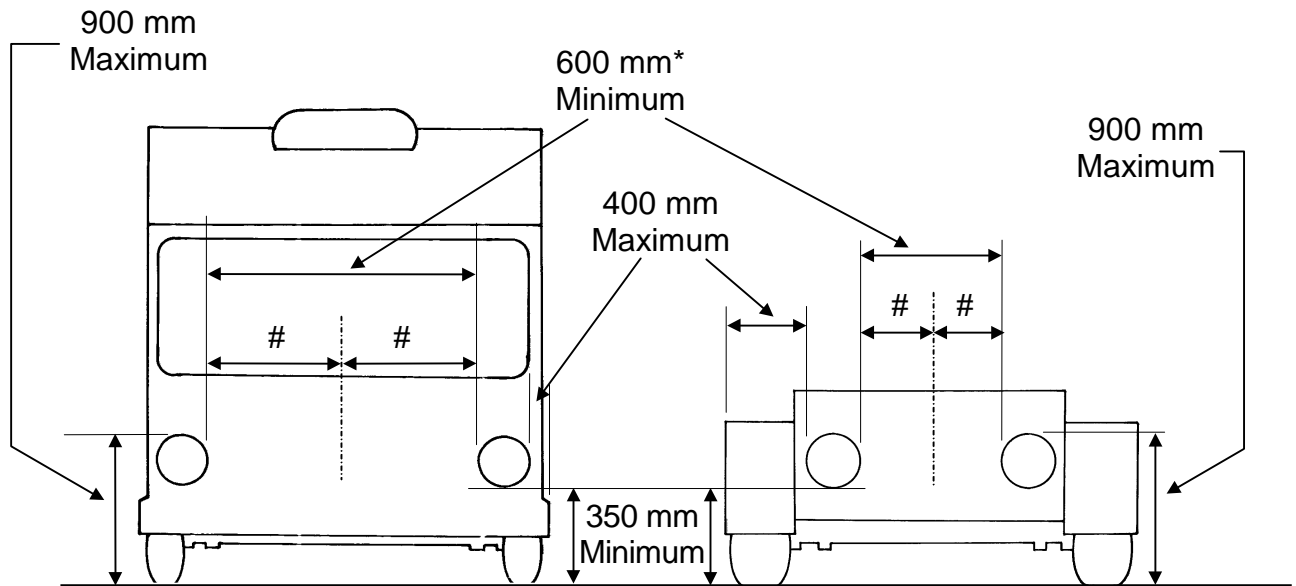
The number of amber coloured side reflex reflectors that must be fitted to each side of a trailer depends on the total length of the trailer, including its draw bar.

At least one reflector must be fitted to the middle third of the total trailer length. There must be a reflector within 3 metres of the front of the trailer and a reflector within 1 metre of the rear of the trailer. The distance between adjacent reflectors must not exceed 3 metres.



9.8.3 Rear Reflex Reflectors

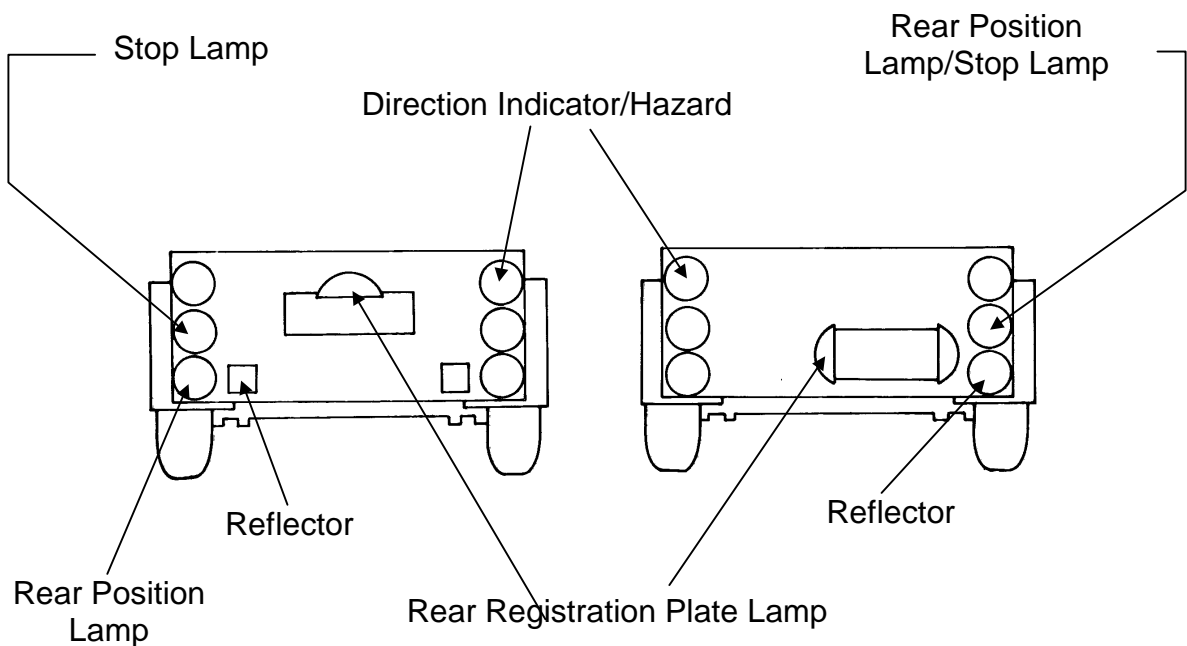
Two reflectors which reflect red light to the rear must be fitted to the rear of each trailer.

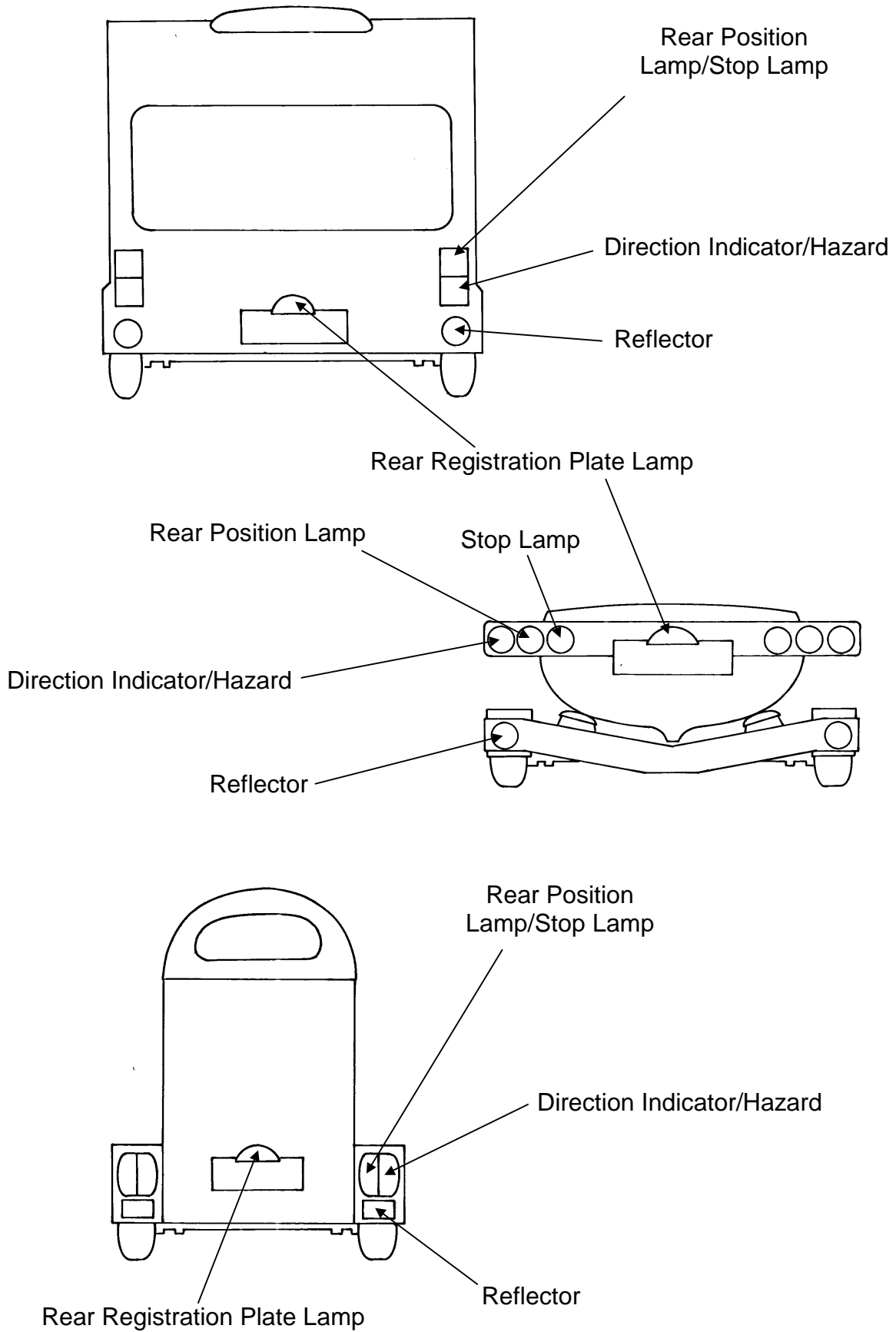


9.9 Grouping of Rear Lamps

Rear position (side) lamps, stop lamps, rear registration lamps, reflectors and direction indicators may be grouped into the same units provided all of their individual requirements are met.

The following illustrations show some acceptable arrangements.





10. ELECTRIC WIRING

Trailer wiring must meet the following requirements:

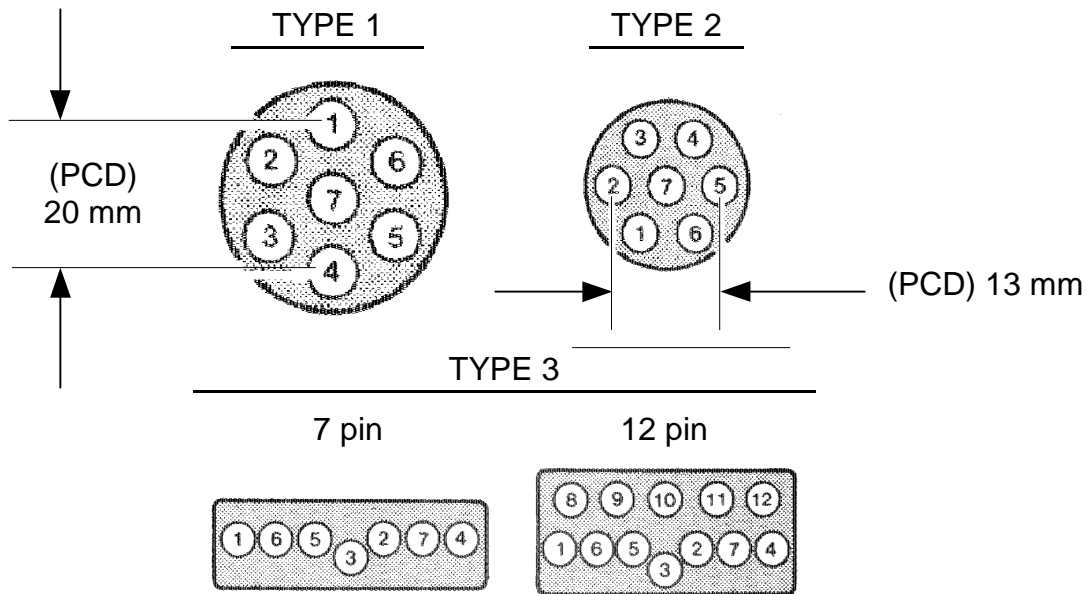
- all wiring must be anchored to the chassis at intervals of not more than 600 millimetres along its length;
- all wiring must be insulated at joints;
- all wiring must be located in such a position that it can neither become overheated nor contact moving parts;
- all wiring must be protected from chafing;
- an earth return wire must be provided between the trailer and its hauling vehicle; it is not acceptable to use the trailer coupling as an earth.

Trailers and towing vehicles must have electrical connectors which comply with Australian Standard 2513-1982 '*Electrical Connectors for Trailer Vehicles*', or as amended from time to time. Three types of seven pin connectors are specified in the Standard and their wiring is shown below. Twelve pin connectors are also specified in the Standard.

Note: Because of interchangeability problems that may arise, it is recommended that pin 5 in the 7 pin connectors be used only for service brakes. If auxiliary circuits are required, then the 12 pin type 3 connector would be preferable.

	Circuit	Circuit Conductor	Circuit Conductor Colour
7 Pin Connector	1	Left-hand turn	Yellow
	2	Reversing signal	Black
	3	Earth return	White
	4	Right-hand turn	Green
	5	Service brakes	Blue
	6	Stop lamps	Red
	7	Rear lamps, clearance and side marker lamps	Brown
12 Pin Connector	8	Battery charger/electric winch	Orange
	9	Auxiliaries, etc/battery feed	Pink
	10	Earth return	White
	11	Rear fog lamp	Grey
	12	Spare	Violet

Front view of trailer plugs:



Lamps and wiring may be detachable from trailers such as boat trailers, where they are exposed to conditions such as immersion in water, which might cause short-circuiting or other malfunctions.

Electrical installations intended for connection to a power system other than that of the drawing vehicle must comply with Australian Standard 3001-1981 *‘Electrical Installations in Caravans and Caravan Parks’*, or as amended from time to time.

11. BRAKING

11.1 Single-axled Trailers with GTM Not Exceeding 0.75 Tonne

No brakes are required.

Note: Two axles with centres spaced less than 1 metre apart are regarded AS a single axle.

11.2 All Trailers Except Single-axled Trailers with GTM Not Exceeding 0.75 Tonne

These trailers must be fitted with an efficient braking system. For trailers not over 2 tonnes GTM, an efficient braking system is considered to have brakes operating on the wheels on at least one axle. Every trailer over 2 tonnes GTM must have brakes operating on all wheels.

All brakes must be operable from the driver's seat of the towing vehicle except for over-run brakes.

Over-run brakes may be used on trailers up to 2 tonnes GTM.

Every trailer over 2 tonnes GTM must have a brake system which will cause immediate application of the trailer brakes in the event of the trailer becoming detached from the towing vehicle (breakaway brake). Under these circumstances the brakes must remain applied for at least 15 minutes.

Flexible hydraulic brake hoses used in a hydraulic brake system must comply with ADR 7/00, 'Hydraulic Brake Hoses'. Brake hoses that are marked SAE J1401 are acceptable.

All air, vacuum or hydraulic brake tubing or hose, other than those covered by ADR 7/00 must conform to British Standard Specification (BSS), Society of Automotive Engineers, Inc (SAE) or other approved standard appropriate to such tubing or hose.

All tubing or hose must be fitted to the trailer so as to prevent chafing, kinking or other mechanical damage under normal movement of the parts to which they are attached.

12. DRAWBARS, COUPLINGS, SAFETY CHAINS AND SAFETY CHAIN ATTACHMENT

12.1 Drawbars

The drawbars must be securely attached to a substantial portion of the trailer.

The drawbars must withstand the following forces applied at the centreline of the intended coupling without detachment or any distortion or failure which will affect the safe drawing of the towed trailer:

Longitudinal tension and compression (N) 1.5 x 9.81 x ATM (kg)

Transverse thrust (N) 0.5 x 9.81 x ATM (kg)

Vertical tension and compression for rigid drawbar trailer (N) 0.5 x 9.81 x ATM (kg)

12.2 Couplings

Couplings must be of a positive locking type with provision for a second independent device. The locking must be readily verifiable by visual inspection.

Trailers having an ATM of up to 3.5 tonnes must have a quick release coupling which is designed to be engaged and disengaged without the use of tools.

12.2.1 50mm Ball Couplings

Ball couplings used on trailers with an ATM of up to 3.5 tonnes must comply with the Australian Standard AS 4177.3-1994 and be installed so that the height of the centre of the body of the ball coupling is between 350mm and 420mm from the ground when laden.

A coupling body complying with AS 4177.3 will be marked with:

- its manufacturer's name or trademark if Australian made;
- the mark '50';
- the maximum rating for the coupling body in one of the following, as applicable,
 - 750 kg; or
 - 2000 kg; or
 - 3500 kg;
- a code to indicate the serial number, batch, production date, or similar;
- the words '**DO NOT WELD**' if the coupling body is manufactured from cast iron or other non-weldable materials.

12.2.2 Couplings for trailers of ATM over 3.5 tonnes and up to 4.5 tonnes

Trailers under this category can use Automatic Pin Couplings, Hook Couplings or other couplings complying with ADR 62/01.

Before purchasing a coupling for this size trailer you should require that the coupling supplier provides a statement confirming that the coupling complies with ADR 62/01.

If you intend to manufacture your own coupling then you will need to obtain a set of Australian Design Rules and conduct physical testing to ensure compliance.

12.3 Drawbars Safety Chains

All pig trailers with rigid drawbars and any other trailer without breakaway brakes, must be fitted with safety chains complying with the following:

- trailers of ATM up to 2.5 tonnes must have at least one safety chain complying with AS 4177.4 –1994, or as amended from time to time;
- trailers of ATM over 2.5 tonnes and up to 3.5 tonnes must have two safety chains of designation of 3500 kg complying with AS 4177.4-1994;
- trailers of ATM over 3.5 tonnes and up to 4.3 tonnes must have a chain size of at least 7.1 mm, a minimum chain breaking load of 6.4 tonnes, be made from steel of a minimum 800 Mpa breaking stress and conforming to the mechanical properties of Grade T chain as specified in AS 2321-1979 '*Short Link Chain for Lifting Purposes (non calibrated)*'.

trailers of ATM over 4.3 tonnes and up to 4.5 tonnes must have a chain size of 9.5 mm, a minimum chain breaking load 11.6 tonnes, be made from steel of a minimum 800 Mpa breaking stress and conforming to the mechanical properties of Grade T chain as specified in AS 2321-1979 *'Short Link Chain for Lifting Purposes (non calibrated)* or as amended from time to time (Effective from July 1998)

12.4 Drawbars Safety Chain Attachments

The chain must be permanently attached to the trailer, shackles are not permitted.

For trailers up to 3.5 tonnes ATM, the safety chain attachment can be by welding. The weld must extend around 50% of the circumference of the link and the adjoining link must have free movement.

For trailers over 3.5 tonnes ATM safety chain attachment must not involve welding or deformation of the chain. Suitable pin-lock couplings should be used.

The safety chain attachment must be located as near as practicable to the coupling and where 2 points of attachment are required they must be mounted one on either side of the centreline of the drawbar

The safety chain attachment must withstand the following minimum forces, separately applied, without incurring either any residual deformation that would interfere or degrade the function of the assembly, or any breaks, cracks or separation of components

Longitudinal tension (N) 9.81 x ATM (in kg)

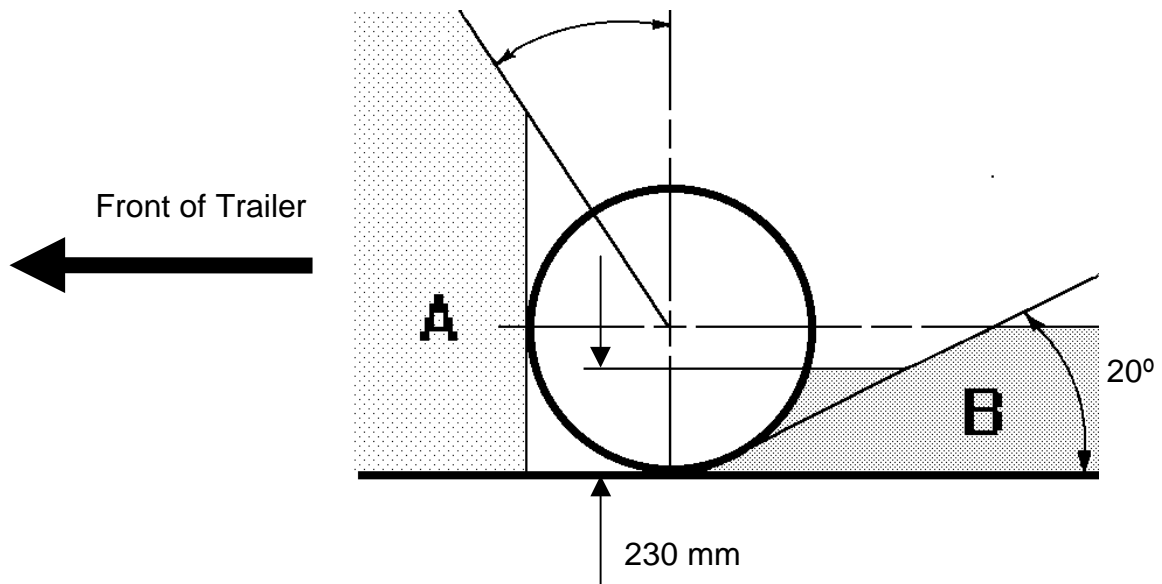
Vertical Load (N) 0.5 x 9.81 x ATM (in kg).

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13. WHEEL GUARDS (MUDGUARDS)

All wheels of a trailer must be fitted with wheel guards which are designed to protect other road users against thrown-up stones, mud, ice, snow and water and to help prevent people contacting the moving wheels.

The wheel guards on the rearmost wheels must provide continuous protection between a point in area 'A' and a point in area 'B' in the figure below, and must cover the overall width of all tyres.



In the case of steerable wheels, the requirements only apply when the wheels are in the straight-ahead position.

Wheel guards may consist of either permanent body structure or part structure and other components, including mudflaps.

Where two or more axles form an axle group, separate wheel guards may be fitted to each wheel or a single wheel guard which provides continuous protection from area 'A' of the foremost wheel to area 'B' of the rearmost wheel may be used.

The end of a wheel guard including a mudflap (if fitted) need not be less than 230 mm from the ground.

The above requirements may be waived by the registering authority if the construction or use of the trailer is such that it is unnecessary or impractical to provide wheel guards.

13.1 Visibility of Wheel Guards (Mudguards)

On every trailer which is 2.2 metres or more in width and which has a body of the tray type, that portion of the external surface of any wheel guard which is visible to the rear must be white or silver in colour and clearly visible.

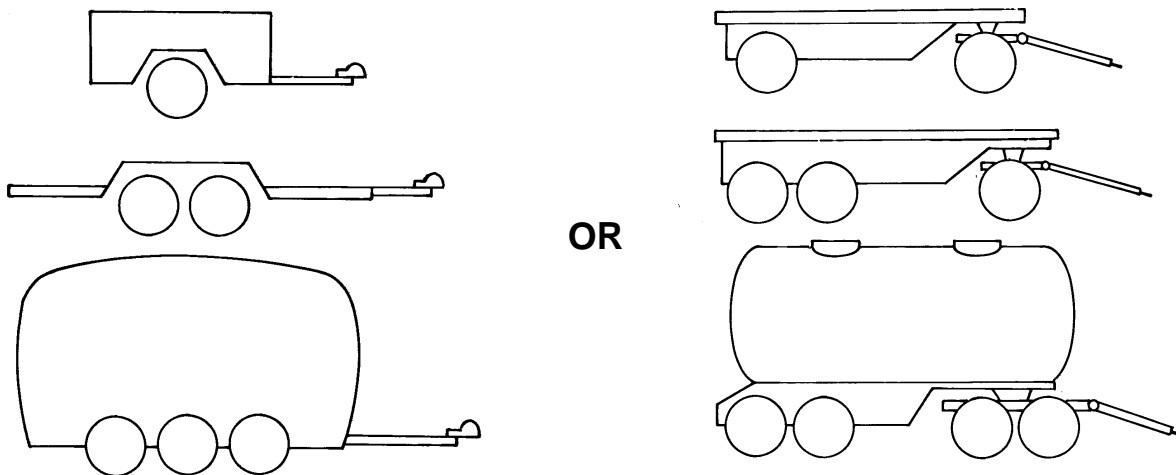
14. VISIBILITY OF TRAY

On every trailer which is 2.2 metres or more in width and which has a body of the tray type, there must be displayed by painting or otherwise across the full width of the rearmost portion of the tray, a clearly visible white or silver coloured horizontal band having a uniform depth of at least 75mm.

15. AXLES AND SUSPENSIONS

Trailers may have axles at one or two locations.

If the trailer has 2 axle groups, the forwardmost axle group must be steerable by the drawbar.



Within a group of axles:

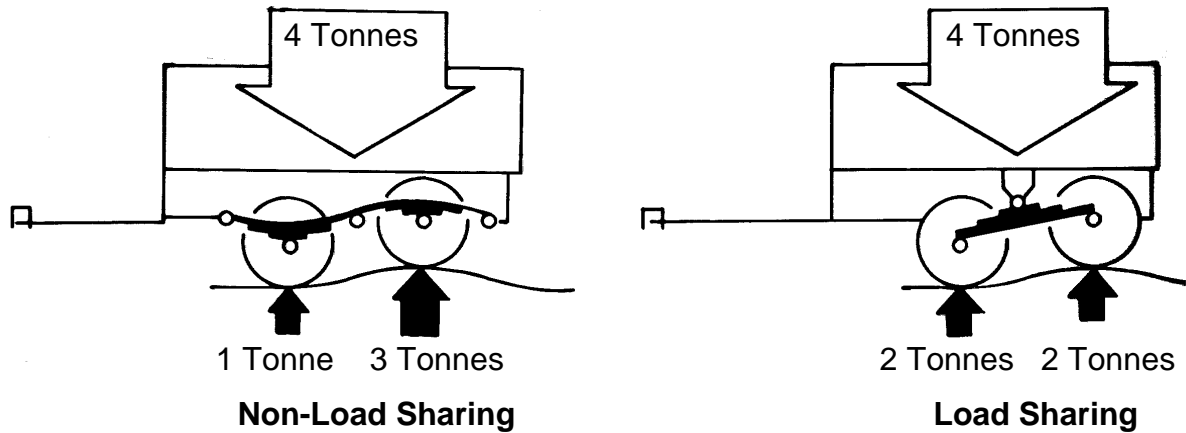
- two axles must not be more than 2 metres apart;
- three axles must not be more than 3.2 metres apart overall.

All axles in a group must be interconnected by a loadsharing suspension except in a close coupled axle group provided that the load carrying capacity of each axle in the group and the wheels and tyres fitted to it is:

- at least 120% of the load on that axle with the trailer at its ATM; and
- at least equal to the load on that axle with the trailer at its ATM and any retractable axle retracted.

Note: A close coupled axle group is where the two axles in a group have their centres not more than one metre apart, or three axles not more than 2 metres apart, or four or more axles not more than 3.2 metres apart.

Load sharing suspensions must be designed so that each axle in a group carries the same load irrespective of the relative movement of the wheels.



More information about load sharing axles can be obtained from any vehicle registering office.

16. WHEELS AND TYRES

Wheels and tyres must be adequate for the loads they are to carry and the speeds at which they are to be towed. The GTM of a trailer must not exceed the sum of the load ratings of its tyres.

16.1 Tyre Placard

Trailers must have a tyre placard made of a durable material affixed to it in a prominent position showing:

- for each axle or group of axles, the tyre size designation and the rim profile as fitted;
- the recommended cold inflation pressure(s) in kPa for tyres on each axle or axle group;
- the load carrying capacity of each axle or axle group, which must not be less than the portion of the ATM carried by it, or the appropriate higher figure if the provisions of Section 15 for close coupled axle groups are applicable;
- the statement: 'The sum of the load carrying capacities of the tyres fitted to any axle or axle group of the vehicle shall not be less than the relevant load shown above.';

- either the statement: 'The tyres fitted to this vehicle shall have a speed category not less than 'L' (120km/h)';

or if the recommended maximum vehicle operating speed is less than 120km/h, 'The tyres fitted to this vehicle shall have a speed category at least equal to the recommended maximum vehicle operating speed,'....'km/h.', where '....' is the vehicle manufacturer's recommended maximum vehicle operating speed.

The tyre shall not be referred to by name of manufacturer or brand name on the placard.

The tyre placard may be affixed to or incorporated in the trailer plate referred to in Section 3.

16.2 Retreaded Tyres

If retreaded tyres are fitted to a trailer, the tyres shall comply with the requirements of AS 1973 1993 – '*Pneumatic tyres - Passenger Car, Light Truck and Truck/bus - Retreading and repair process*', or as amended from time to time.

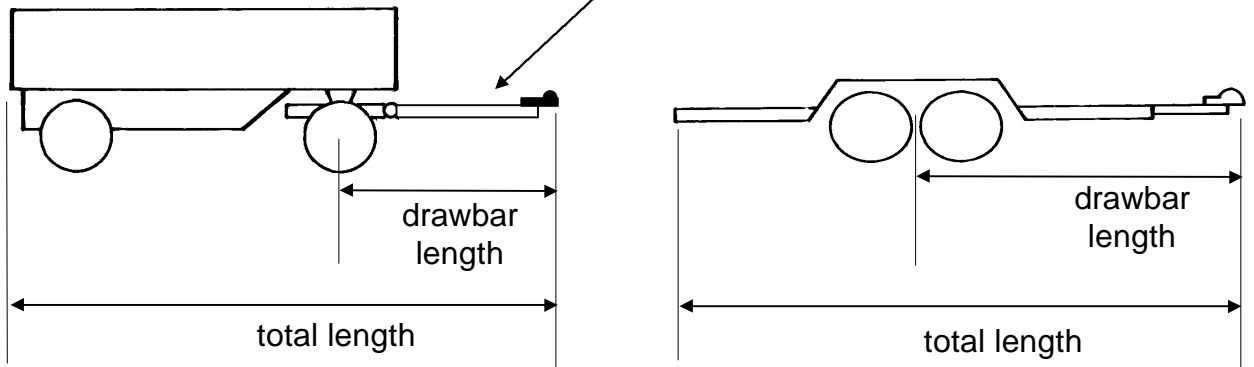
17. DIMENSIONS

17.1 Length

The length of trailers (except for semi-trailers) must not exceed 12.5 metres. The total length, in combination with a hauling vehicle, must not exceed 19 metres.

Note that drawbar length is measured from the coupling to the centre of the foremost axle group. The drawbar length must not exceed 5 metres for dog trailers and 8.5 metres for pig trailers.

Note: Drawbar length and total length are to be measured with the drawbar horizontal



17.2 Rear Overhang

Dog Trailers

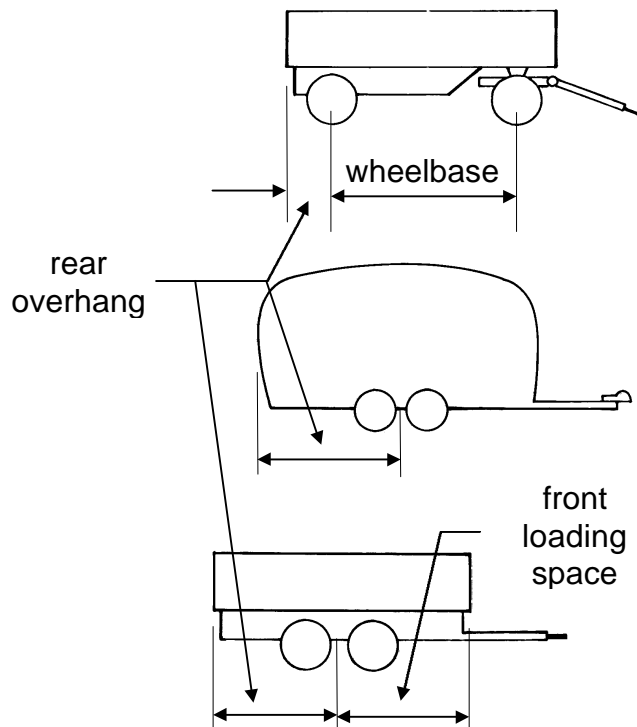
Rear overhang must not exceed the lesser of:

- 3.7m; or
- 60% of the wheelbase.

Other Trailers

Rear overhang must not exceed the lesser of:

- 3.7m; or
- front loading space.



17.3 Width

A trailer must not exceed 2.5 metres in width.

17.4 Height

A trailer must not exceed 4.3 metres in height.

17.5 Ground Clearance

The ground clearance of a trailer measured from the horizontal road surface of any point on the underside of the trailer except the tyres, wheel and wheel hubs must, when loaded to the ATM, be not less than:

- 100mm for any point in the width of the vehicle which is within one metre fore and aft of any axle; and
- the dimension in millimetres obtained by multiplying the distance between any two consecutive axles in metres by 33.33, for the midpoint between those two axles.

NOTE: OBSERVANCE OF PERMISSIBLE VEHICLE DIMENSIONS IS CRITICAL TO ROAD SAFETY. A TRAILER NOT MEETING THESE DIMENSIONAL LIMITS MAY NOT BE ALLOWED TO OPERATE UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE REGISTERING AUTHORITY.

18. CARAVANS

A caravan or trailer equipped with cooking facilities or living or sleeping accommodation must have only outward-opening or sliding doors. At least one such door must be located on the left-hand side or at the rear.

Liquefied petroleum gas installations in caravans must comply with the requirements of '*Code Governing the Installation in Caravans of Liquefied Petroleum Gas Equipment and Appliances*', issued by the Australian Liquefied Petroleum Gas Association.

The registering authority should be consulted for acceptability of LPG installations manufactured in accordance with other Codes of Practice.

Caravans must be provided with a fire extinguisher(s) selected and located in accordance with Australian Standards AS1850-1994 – '*Portable Fire Extinguishers – Classification, Rating and Performance Testing*' and AS2444-1995 – '*Portable Fire Extinguishers and Fire Blankets – Selection and Location*'.

Fire authorities strongly recommend that caravans or trailers equipped with cooking facilities, or living or sleeping accommodation be fitted with approved fire blankets and smoke detectors for the protection of occupants.

19. GENERAL REQUIREMENTS

Trailers of any kind must not be designed for the carriage of passengers.

No part of a trailer may be hazardous to other road users; there must be no sharp edges or projections.

The use of toughened or laminated safety glass on trailers which have windows is strongly recommended, although it is not a mandatory requirement.