



Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006

Made under section 12 of the *Road Vehicle Standards Act 2018*

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Compiled by: Vehicle Safety Policy and Partnerships, Department of Infrastructure, Transport, Regional Development, Communications and the Arts

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1. LEGISLATIVE PROVISIONS

1.1. NAME OF STANDARD

- 1.1.1. This Standard is the Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006.
- 1.1.2. This Standard may also be cited as Australian Design Rule 43/04 – Vehicle Configuration and Dimensions.

2. FUNCTION

- 2.1. The function of this vehicle standard is to specify requirements for vehicle configuration and dimensions.

3. APPLICABILITY AND IMPLEMENTATION

3.1. Applicability Summary

- 3.1.1. This vehicle standard applies to the design and construction of vehicles as set out in the Applicability Table in clause 3.2.
- 3.1.2. Vehicles certified to any of the “Acceptable Prior Rules” as shown in the Applicability Table for a particular vehicle category are deemed to comply with this national standard provided:
- 3.1.2.1. ‘T-Group’ vehicles meet clause 6.2.1.3. and clause 7.2.1.; and
- 3.1.2.2. the requirements for ‘Retractable Axles’ are met (where appropriate).

3.2. Applicability Table

Vehicle Category	ADR Category Code	UNECE Category Code	Manufactured on or After	Acceptable Prior Rules
Moped 2 wheels	LA	L1	1 March 1998	/01, /02, /03
Moped 3 wheels	LB	L2	1 March 1998	/01, /02, /03
Motor cycle	LC	L3	1 March 1998	/01, /02, /03
Motor cycle and sidecar	LD	L4	1 March 1998	/01, /02, /03
Motor tricycle	LE	L5	1 March 1998	/01, /02, /03
Passenger car	MA	M1	1 Jan 1998	/01, /02, /03
Forward-control passenger vehicle	MB	M1	1 Jan 1998	/01, /02, /03
Off-road passenger vehicle	MC	M1	1 Jan 1998	/01, /02, /03
Light omnibus	MD	M2	1 July 1998	/01, /02, /03
Heavy omnibus	ME	M3	1 July 1998	/01, /02, /03
Light goods vehicle	NA	N1	1 July 1998	/01, /02, /03
Medium goods vehicle	NB	N2	1 July 1998	/01, /02, /03
Heavy goods vehicle	NC	N3	1 July 1998	/01, /02, /03
Very light trailer	TA	O1	1 July 1998	/01, /02, /03
Light trailer	TB	O2	1 July 1998	/01, /02, /03
Medium trailer	TC	O3	1 July 1998	/01, /02, /03
Heavy trailer	TD	O4	1 July 1998	/01, /02, /03

4. DEFINITIONS

- 4.1. Refer to Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005.

5. TURNING CIRCLE

- 5.1. Every vehicle must have a turning circle in either direction, as determined by reference to the extreme outer edge of the tyre track at ground level, not exceeding 25 metres in diameter.
- 5.2. All parts of an ‘*Articulated Omnibus*’ except mirrors and signalling devices must be capable of moving within a circular track having an inner radius of 5.3 metres and an outer radius of 12 metres.

6. DIMENSIONS OF VEHICLES

- 6.1. Motor vehicles
- 6.1.1. ‘*Total Length*’, including any ‘*Equipment*’
- 6.1.1.1. The ‘*Total Length*’ of a motor vehicle, other than an ‘*Articulated Omnibus*’ must not exceed 12.5 metres.
- 6.1.1.2. The ‘*Total Length*’ of an ‘*Articulated Omnibus*’ must not exceed 18 metres.
- 6.1.2. ‘*Rear Overhang*’, including any ‘*Equipment*’
- 6.1.2.1. The ‘*Rear Overhang*’ of any motor vehicle must not exceed 60 percent of the ‘*Wheelbase*’, or 3.7 metres, whichever is the lesser.
- 6.1.3. Height, including any ‘*Equipment*’
- 6.1.3.1. The height of any motor vehicle must not exceed 4.3 metres.
- 6.1.4. ‘*Ground Clearance*’
- 6.1.4.1. The ‘*Ground Clearance*’ of a motor vehicle, other than an L-Group vehicle, measured from a horizontal road surface to any applicable point on the underside of the vehicle must, under the conditions of ‘*Maximum Loaded Test Mass*’ loading as specified in the relevant braking rule, be not less than:
- 6.1.4.1.1. for the mid-point between any 2 consecutive ‘*Axles*’, the dimension in millimetres obtained by multiplying the distance between those 2 ‘*Axles*’ in metres by 33.33; and
- 6.1.4.1.2. for any other point, ‘*Ground Clearance*’ is such that if the wheels of one ‘*Axle*’ are on one plane and the wheels on the next consecutive ‘*Axle*’ are on another plane which intersects the first so that the angle between them is 7 degrees 38 minutes the point will pass over the apex transverse to the vehicle formed by that intersection, as shown in Figure 1.
- 6.1.4.2. Where an omnibus, when fully laden and at normal ride height, does not meet the ground clearance as determined in 6.1.4.1.1., a device must be fitted to enable the chassis to be lifted sufficiently to meet the ground clearance relative to the wheelbase for manoeuvring purposes only.
- 6.1.5. ‘*Overall Width*’, including any ‘*Equipment*’

- 6.1.5.1. The *‘Overall Width’* of any motor vehicle (other than an L-Group vehicle) must not exceed 2,500 mm.
- 6.1.5.2. The *‘Overall Width’* of an L-Group vehicle must be as follows:
 - 6.1.5.2.1. in the case of LA category vehicles, the maximum width must not exceed 1,000 mm;
 - 6.1.5.2.2. in the case of LC category vehicles, the maximum width must not exceed 1,100 mm; and
 - 6.1.5.2.3. in the case of a three wheel vehicle (LB or LE) or a motorcycle with a side car (LD), the maximum width must not exceed 2,000 mm.
- 6.1.6. *‘Running Clearance’*
 - 6.1.6.1. The *‘Running Clearance’* of a motor vehicle, other than an L-Group vehicle, must be not less than 100 mm.
- 6.2. Trailers
 - 6.2.1. *‘Total Length’*, including any *‘Equipment’*
 - 6.2.1.1. For a *‘Dog Trailer’*:
 - 6.2.1.1.1. the distance from the *‘Point of Articulation’* to the line from which the *‘Rear Overhang’* is measured must not exceed 9.5 metres; and
 - 6.2.1.1.2. the distance from the *‘Point of Articulation’* to the *‘Rear End’* must not exceed 12.3 metres.
 - 6.2.1.2. For a *‘Semi-trailer’*:
 - 6.2.1.2.1. the forward projection from the *‘Point of Articulation’* must be contained within a radius of 1.9 metres;
 - 6.2.1.2.2. the distance from the *‘Point of Articulation’* to the line from which the *‘Rear Overhang’* is measured must not exceed 9.5 metres; and
 - 6.2.1.2.3. the distance from the *‘Point of Articulation’* to the *‘Rear End’* must not exceed 13.2 metres, except that:
 - 6.2.1.2.3.1. for a *‘Semi-trailer’* designed for use in a *‘Road Train’* or *‘B-Double’*, the distance from the *‘Point of Articulation’* to the *‘Rear End’* must not exceed 12.3 metres.
 - 6.2.1.2.4. Despite clauses 6.2.1.2.2 and 6.2.1.2.3, for a *‘Semi-trailer’* designed and constructed for the positive control of temperature through the use of refrigerated equipment (a refrigerated trailer) and not designed for use in a *‘Road Train’* or *‘B-Double’*:
 - 6.2.1.2.4.1. the distance from the *‘Point of Articulation’* to the line from which the *‘Rear Overhang’* is measured must not exceed 9.9 metres; and
 - 6.2.1.2.4.2. the distance from the *‘Point of Articulation’* to the *‘Rear End’* must not exceed 13.6 metres.
 - 6.2.1.3. The length available for the carriage of animals on a *‘Livestock Trailer’* must not be more than 12.5 metres when measured from the inside of the front wall or door of the trailer to the inside of the rear wall or door of the

trailer (as the case may be), and any intervening partition must be disregarded.

6.2.2. *'Drawbar Length'*

6.2.2.1. For a *'Pig Trailer'*, the *'Drawbar Length'* must not exceed 8.5 metres, except that:

6.2.2.1.1. for a *'Converter Dolly'*, the *'Drawbar Length'* must not exceed 5.0 metres.

6.2.2.2. for a *'Dog Trailer'*, the *'Drawbar Length'* must not exceed 5.0 metres.

6.2.3. *'Rear Overhang'*, including any *'Equipment'*

6.2.3.1. For a *'Pig Trailer'*, the *'Rear Overhang'* must not exceed the length of the load space forward of the line from which *'Rear Overhang'* is measured, or 3.7 metres, whichever is the lesser.

6.2.3.2. For a *'Dog Trailer'*, the *'Rear Overhang'* must not exceed 60 percent of the *'Wheelbase'*, or 3.7 metres, whichever is the lesser.

6.2.3.3. For a *'Semi-trailer'*, the *'Rear Overhang'* must not exceed 60 percent of the distance between the *'Point of Articulation'* and the line from which the *'Rear Overhang'* is measured, or 3.7 metres, whichever is the lesser.

6.2.4. Height, including any *'Equipment'*

6.2.4.1. The height of any trailer, other than a *'Livestock Trailer'*, must not exceed 4.3 metres.

6.2.4.2. The height of a *'Livestock Trailer'* must not exceed 4.6 metres.

6.2.5. *'Ground Clearance'*

6.2.5.1. The *'Ground Clearance'* of a trailer, measured from a horizontal road surface to any point on the underside of the vehicle except the tyres, wheels and wheel hubs must, under the conditions of *'Maximum Loaded Test Mass'* loading as specified in the relevant braking rule, be not less than:

6.2.5.1.1. for the mid-point between any 2 consecutive *'Axles'*, the dimension in millimetres obtained by multiplying the distance between those 2 *'Axles'* in metres by 33.33; and

6.2.5.1.2. for any other point, *'Ground Clearance'* is such that if the wheels of one *'Axle'* are on one plane and the wheels on the next consecutive *'Axle'* are on another plane which intersects the first so that the angle between them is 7 degrees 38 minutes the point will pass over the apex transverse to the vehicle formed by that intersection, as shown in Figure 1.

6.2.6. *'Overall Width'*, including any *'Equipment'*

6.2.6.1. The *'Overall Width'* of any trailer must not exceed 2,500 mm.

6.2.7. *'Running Clearance'*

6.2.7.1. The *'Running Clearance'* of a trailer must be not less than 100 mm.

7. AXLE CONFIGURATION

- 7.1. A rigid motor vehicle must be supported by 2 ‘*Axle Groups*’ disposed as follows:
- 7.1.1. one towards the front of the vehicle, with all wheels connected to the steering system for that part of the vehicle, either a ‘*Single Axle*’ or a ‘*Twin Steer Axle Group*’; and
 - 7.1.2. one towards the rear of the vehicle.
- 7.2. A ‘*Semi-trailer*’ must be supported towards the rear by an ‘*Axle Group*’.
- 7.2.1. Every ‘*Semi-trailer*’ which is extendible or fitted with a sliding ‘*Axle Group*’ must be so constructed that:
- 7.2.1.1. positive locking devices are utilised;
 - 7.2.1.2. all locking device controls must be in a lockable enclosure when mounted on the chassis;
 - 7.2.1.3. failure of the engagement of the locking device must activate a visible and/or audible warning device;
 - 7.2.1.4. where the locking device is air-operated the supply must be fitted with a protection valve to prevent loss of air to the air brake supply in the event of line fracture or failure; and
 - 7.2.1.5. the movable assembly must be fitted with substantial stops to prevent disconnection from the vehicle in the event of failure of the locking device.
- 7.3. A trailer other than a ‘*Semi-trailer*’ must be supported by either:
- 7.3.1. one ‘*Axle Group*’; or
 - 7.3.2. an ‘*Axle Group*’ towards both the front and rear of the trailer provided that all wheels in the front ‘*Axle Group*’ are connected to the steering mechanism for that part of the vehicle.

8. LOAD SHARING SUSPENSION

- 8.1. All the ‘*Axles*’ in an ‘*Axle Group*’ other than a ‘*Twin Steer Axle Group*’ must be related to each other through a ‘*Load Sharing Suspension*’ except :
- 8.1.1. this requirement must not apply to a ‘*Close Coupled Axle Group*’ on any motor vehicle or trailer (including a ‘*Semi-trailer*’) with a ‘*GVM*’ or ‘*ATM*’ less than 4.5 tonne provided that the load carrying capacity of each of the ‘*Axles*’ and the wheel and tyres fitted to each ‘*Axle*’ is at least 120% of the nominal load imposed on that ‘*Axle*’ with the vehicle or trailer at its ‘*GVM*’ or ‘*ATM*’; and
 - 8.1.2. this requirement must not apply to a ‘*Close Coupled Axle Group*’ fitted with a ‘*Retractable Axle*’ on any motor vehicle or trailer (including a ‘*Semi-trailer*’) with a ‘*GVM*’ or ‘*ATM*’ less than 4.5 tonne provided that the load carrying capacity of each other ‘*Axle*’ and the wheels and tyres fitted to it is at least equal to the load imposed on that ‘*Axle*’ with the

motor vehicle or trailer at its ‘GVM’ or ‘ATM’ and with the ‘Retractable Axle’ retracted.

9. RETRACTABLE AXLE REQUIREMENTS

- 9.1. The ‘Retractable Axle’ must automatically lower to the ‘Fully-down’ position no later than when the ‘Prescribed Transition Mass’ shown in Table 1 is reached.
- 9.2. The ‘Retractable Axle’ must remain in the ‘Fully-down’ position when the ‘Prescribed Transition Mass’ shown in Table 1 is exceeded.

TABLE 1

Transition mass ratings for Axle Configurations and Tyre types.

Axle Configuration		Tyres	Prescribed Transition mass (tonnes)
from	to	S	4.0
1	2	D	6.5
		W ₁	6.5
		W ₂	6.5
		SS	10
2	3	W ₁	13
		W ₁	
		DD	13
		W ₂	13
		W ₂	

Example: If a tri-axle suspension fitted with dual tyres has two retractable axles, when running only on the nonretractable axle, the first ‘Retractable Axle’ must come down no later than when the load imposed on the ground reaches 6.5 tonnes. The second ‘Retractable Axle’ must come down no later than when the load imposed on the ground reaches 13.0 tonnes.

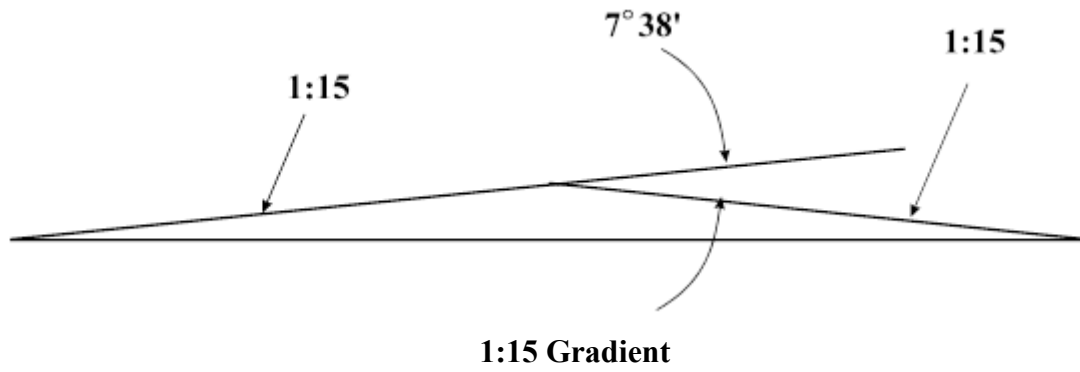
Tyre type codes

- S Single tyre per wheel
 D Dual tyres per wheel
 W₁ Wide Single Tyre (375 to 450 mm width)
 W₂ Wide Single Tyre (over 450 mm width)

- 9.3. The ‘Retractable Axle’ must remain fixed, in either the raised or ‘Fully-down’ position, when the vehicle is in motion. This requirement does not require speed sensing. It must be demonstrated however, that in the intended service of the vehicle, road shock or other influences will not cause the ‘Retractable Axle’ to raise or lower. Compliance with this requirement must be demonstrated by providing evidence that the designed response of the control system prevents the inadvertent raising or lowering of the ‘Retractable Axle’.

- 9.4. A vehicle fitted with a 'Retractable Axle' must, in all 'Configurations', comply with all relevant requirements of clause 6.

Figure 1



COMPILATION NOTES

This compilation of Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006 includes all the instruments set out in the Table of Instruments. The Table of Amendments provides a history of clauses that have been amended, inserted or deleted.

Table of Instruments

Name of Instrument	Registration Date	Commencement Date
Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006 (F2006L01430)	11/05/2006	12/05/2006
Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006 Amendment 1 (F2007L04081)	12/10/2007	13/10/2007
Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006 Amendment 2 (F2015L01934)	03/12/2015	04/12/2015
Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006 Amendment 3 (F2016L00574)	26/04/2016	27/04/2016
Vehicle Standard (Australian Design Rule) Amendment Instrument 2022 (No.1)	25/10/2022	26/10/2022

Table of Amendments

Clause affected	How affected	Amending instrument
1.1	am	Amendment 3
1.2.	del	<i>Legislation Act 2003</i> – section 48D
1.3.	del	<i>Legislation Act 2003</i> – section 48C
3.1.1	am	Amendment 3
3.1.2	am	Amendment 3
3.1.2.1	am	Amendment 3
3.1.2.2	am	Amendment 3
5	am	Amendment 3
5.1	ad	Amendment 3
5.2	ad	Amendment 3
6.1.4.1.	rr	Vehicle Standard (Australian Design Rule) Amendment Instrument 2022 (No.1)
6.4.1	rr	Amendment 1
6.5.2.1	am	Amendment 2
6.5.2.2	am	Amendment 2
6.5.2.3	ad	Amendment 2
6.6	ad	Amendment 1
6 and subclauses	am	Amendment 3
7.1	del	Amendment 3
7.2	→ 7.1	Amendment 3
7.2.1	→ 7.1.1	Amendment 3
7.2.2	→ 7.1.2	Amendment 3
7.3	→ 7.2	Amendment 3

Clause affected	How affected	Amending instrument
7.3.1	→ 7.2.1	Amendment 3
7.3.1.1	→ 7.2.1.1	Amendment 3
7.3.1.2	→ 7.2.1.2	Amendment 3
7.3.1.3	→ 7.2.1.3	Amendment 3
7.3.1.4	→ 7.2.1.4	Amendment 3
7.3.1.5	→ 7.2.1.5	Amendment 3
7.4	→ 7.3	Amendment 3
7.4.1	→ 7.3.1	Amendment 3
7.4.2	→ 7.3.2	Amendment 3
9.4	am	Amendment 3
9.5	del	Amendment 3

ad = added or inserted

am = amended

del = deleted or removed

rr = removed and replaced

→ = clause renumbered. This takes the format of old no. → new no.