

Light Vehicle Inspection Manual

Section 5 Wheels and Tyres

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Australian Design Rules relevant to this section

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| ADR 23/... | Passenger car tyres |
| ADR 24/... | Tyre and rim selection |
| ADR 42/... | General safety requirements |
| ADR 95/... | Installation of tyres |
| ADR 96/... | Commercial vehicle tyres |
| More information | Appendix C – Modified Vehicles |
| | Appendix E – Retreaded Tyres |
| | Appendix U - Tyre Ratings |

OBJECTIVE: To ensure that road wheels and tyres are of a suitable type and condition and that they provide the necessary load carrying capacity, speed rating and control of the vehicle.

5.1. Visually inspect the inside and outside of each road wheel

Reasons for rejection

- a) Any wheel or rim is cracked, has pieces of casting missing, or is buckled, shows signs of welding; signs of elongation of stud holes or redrilling of stud holes.
- b) The wheel nut does not have a thread engagement length at least equal to the thread diameter, except where specified by the vehicle manufacturer, or the fitting of the wheel nut does not match the taper of the wheel stud hole.
- c) Any hub has missing or broken wheel mounting nuts, studs or bolts.
- d) Any spoked wheel has any missing, loose, broken, bent or cracked spokes.
- e) The tyre or rim makes contact with or fouls any component at any point over the full range of suspension travel or steering movement.
- f) Wheels/rims are not of an approved type and construction (i.e. Beadlock wheels/rims).
- g) Spacer plates are used between hub and wheels, except where fitted by the vehicle manufacturer.

5.2. Visually inspect each road tyre

Reasons for rejection

- a) Any road tyre fitted to the vehicle built after 1932 is not a pneumatic tyre.

Note: i. *Run-flat and temporary use spare tyres are not normal road use tyres. Their use is conditional subject to the vehicle manufacturer and component manufacturer's instructions. General tyre conditions, including minimum tread depth condition, apply at all times.*

ii. *Solid rubber and non pneumatic tyres are permitted on pre-1932 vehicles in accordance with the regulations - refer to Vehicle Standards Section.*

- b) The tyre has less than 1.5mm tread depth in a continuous band around the circumference on the surfaces which normally contacts the road.
- c) The tyre has deep cuts, bulges, exposed cords or other signs of carcass failure on either the side wall or tread surface.
- d) Tyres fitted to rims on an axle or axle group are not the same size.
- e) Tyres are not compatible with the rim to which they are fitted and not of a type suitable for normal road use (space-saver wheels excepted).
- f) The tyre has been re-grooved (except where indicated on the sidewall that the tyres are suitable for re-grooving).
- g) Any re-treaded tyre fitted to the vehicle is not marked with the name or identification of the re-treader and speed rating of the tyre.

Note: iii. *Retreads must comply with Australian Standards AS 1973 for speed and construction. For further information, refer to Appendix E - Retreaded Tyres.*

- h) Dual tyres contact each other.
- i) Tyre load ratings are less than the minimum ratings specified originally by the vehicle manufacturer.

Note: iv. *For further information, refer to Appendix U – Tyre Ratings.*

- j) For a car or car derivative, the maximum tyre width is more than 1.3 times larger than the vehicle manufacturer's widest optional tyre width.
- k) When in the straight ahead position the tread section of any tyre protrudes beyond the extreme width of the mudguard or body for that wheel.
- l) For a passenger car with 4 or more wheels manufactured after 1972, the speed rating of all tyres, when first manufactured, is not at least 180 km/h unless a lower rating has been specified.
- m) For a passenger car, the tyre/s have a rolling diameter greater than 15 mm larger or greater than 26 mm smaller than that of any tyre designated by the vehicle manufacturer for that model.
- n) For a commercial vehicle, the tyre/s have a rolling diameter greater than 50 mm larger or greater than 26 mm smaller than that of any tyre designated by the vehicle manufacturer for that model.
- o) Alteration of tyres that effect the correct operation of the speedometer.
- p) A symmetrical (directional) tyre fitted to the vehicle in the wrong direction.

5.3. Measure the wheel track, where modified from standard, taking measurement from the centre of the tyres

Reason for rejection

- a) The vehicle manufacturer's specified wheel track measurement for the vehicle is exceeded by more than is currently approved by State/Territory for specific vehicle types.

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| Note: | v. <i>Where the manufacturer offers the option of a wider track measurement (e.g. where wider wheels are optional), the maximum allowable track will be the maximum wheel track offered by the manufacturer or the track of the standard vehicle plus up to 50 mm for a passenger car or passenger car derivative.</i> |
| | vi. <i>Further information, see Appendix C – Modified vehicles.</i> |

- b) The wheel track has been reduced below the manufacturer's specification for the vehicle.

5.4. Tyres on Four Wheel Drive/Off Road Vehicles

Reasons for rejection:

- a) For an off-road passenger vehicle (four wheel drive) the maximum tyre width is more than 1.5 times larger than the vehicle manufacturer's widest optional tyre width.
- b) The tyre width of the narrowest tyre fitted to a vehicle is less than 70 percent of the width of the largest tyre fitted or less than the manufacturer's narrowest optional tyre and rim as indicated on the manufacturer's tyre placard.
- c) Where wider wheels and tyres are fitted which comply with both legislative and the manufacturer's specifications or are approved by the manufacturer and protrude beyond the vehicles extremities, additional flared mudguards are not fitted.
- d) For an off road vehicle with 4 or more wheels manufactured after 1972, the speed rating of all the tyres when first manufactured is not at least 140 km/h, unless a lower rating has been specified.
- e) The wheel track of off-road four wheel drive vehicles and goods vehicles (MC, NA, NB ADR category) must not be increased by more than 50mm beyond the maximum specified by the vehicle manufacturer for the particular model.

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| Note: | vii. <i>Where the manufacturer offers the option of a wider track measurement (e.g. where wider wheels are optional), the maximum allowable track will be the maximum wheel track offered by the manufacturer or the track of the standard vehicle plus up to 100mm for an off road vehicle or goods vehicle (MC, NA, NB category). Maximum regulation dimensional limits must not be exceeded.</i> |
| | viii. <i>Further information, see Appendix C – Modified vehicles.</i> |