



COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 24
FOR
TYRE SELECTION

As Endorsed by the
Australian Transport Advisory Council

The intention of this Australian Design Rule is to specify requirements for tyre selection appropriate to vehicle load capacity rim size and speed characteristics.

The Australian Transport Advisory Council has recommended to Commonwealth, State and Territory Governments that all motor vehicles specified below comply with Australian Design Rule 24 - Tyre Selection.

VEHICLE CATEGORY	RULE		AMENDMENT
	MANUFACTURED ON OR AFTER		
	24		
Passenger Cars			
Forward Control Passenger Vehicles up to 8 seats	1 Jan 1985#	1 Jan 1985*	
9 seats	N/A	N/A	
Other Passenger Cars	1 Jan 1973#	N/A	
Passenger Car Derivatives	1 Jan 1973#	1 Jan 1975*	
Multi-Purpose Passenger Cars	1 Jan 1973#	1 Jan 1975*	
Omnibuses up to 3.5 tonnes GVM			
up to 12 seats	N/A		
over 12 seats	N/A		
up to 4.5 tonnes GVM	N/A		
over 4.5 tonnes GVM	N/A		
Motorcycles	N/A		
Mopeds	N/A		
Specially Constructed Vehicles	N/A		
Other Vehicles not listed above			
up to 4.5 tonnes GVM	N/A		
over 4.5 tonnes GVM	N/A		

Using Passenger Car Tyres

* Not Using Passenger Car Tyres

N/A - Not Applicable

GROSS VEHICLE MASS - Abbreviated to 'GVM'

The Australian Transport Advisory Council has also recommended to Commonwealth, State and Territory Governments that motor vehicles which comply with the requirements of ADR 24A - Tyre Selection need not comply with the requirements of ADR 24.

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AUSTRALIAN DESIGN RULE NO. 24 - TYRE SELECTION

24.1 Definitions

- 24.1.1 'Maximum Vehicle Speed' means the maximum speed attainable established by calculation or on the basis of a test under maximum vehicle acceleration from a standing start for 1.6 km at normal loaded vehicle mass. *
- 24.1.2 'Normal Loaded Vehicle Mass' of a passenger car means the sum of the unladen vehicle mass together with the heaviest factory installed options, if such individual options weigh 2.3 kg (5 pounds) or more, plus 68 kg (150 pounds) for each of two front seat occupants plus, if the designated seating capacity is 5 or more, 68 kg (150 pounds) for a rear seat passenger. *
- 24.1.3 'Normal Loaded Vehicle Mass' of a passenger car derivative or a multi-purpose passenger car, means the sum of the unladen mass together with the heaviest factory installed options, if such individual options weigh 2.3 kg (5 pounds) or more, plus 68 kg (150 pounds) for the front seat occupant if only one front seating position is provided, or 68 kg (150 pounds) for each of two front seat occupants if more than one front seating position is provided, plus one third of the difference between this mass and the maximum loaded vehicle mass (as defined) distributed evenly over the loading spaces area or in the case of incompleted vehicles over the rear axle. *
- 24.1.4 'Maximum Loaded Vehicle Mass' of a passenger car means the mass of the unladen vehicle, together with the heaviest factory installed options, if such individual options weigh 2.3 kg (5 pounds) or more, with a full capacity of lubricating oil, coolant and fuel plus additional loading equivalent to 68 kg (150 pounds) for each seating position and 13.6 kg (30 pounds) times the number of seating positions for luggage. *
- 24.1.5 'Maximum Loaded Vehicle Mass' of a passenger car derivative or a multi-purpose passenger car, means the maximum mass for which compliance with current and appropriate Australian Design Rules has been or can be established. *
- 24.1.6 'Vehicle Maximum Load on the Tyre' means that load on an individual tyre that is determined by distributing to each axle its share of the weight arising from the maximum loaded vehicle mass (as defined) and dividing by two. *
- 24.1.7 'Vehicle Normal Load on the Tyre' means that load on an individual tyre that is determined by distributing to each axle its share of the weight arising from the normal loaded vehicle mass and dividing by two. *
- 24.1.8 All the definitions set out in Australian Design Rule No. 23 - New Pneumatic Passenger Car Tyres or Australian Design Rule No. 23A - New Pneumatic Passenger Car Tyres apply in this Design Rule as appropriate.

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- 24.2 Requirements for Vehicles Fitted with Passenger Car Tyres.
- 24.2.1 Tyre selection and placards shall meet the requirements of Clause 24.2.2 to 24.2.4 inclusive except that tyre selection and placards meeting the requirements of 24A.2.1 to 24A.2.6 shall be deemed to meet these requirements also. *
- 24.2.2 Placard **
- 24.2.2.1 A placard of durable material permanently affixed to the glove compartment door or an equally accessible location shall display: **
- (i) for each nominated rim profile, the recommended tyre size designation together with the maximum load rating or load capacity index and recommended pressures for normal operation. In any case where a rim and tyre combination is not listed in Part A of Table 2 of Australian Design Rule No. 23 - New Pneumatic Passenger Car Tyres, or Australian Design Rule No. 23A - New Pneumatic Passenger Car Tyres, or in a Nominated Standard referred in Clause 23B.1.17 of Australian Design Rule No. 23B - New Pneumatic Passenger Car Tyres the tyre shall be referred to by name of manufacturer in addition to the other requirements in this clause; *
- (ii) any recommended variations in inflation pressure for loads other than normal; and
- (iii) any recommended variations in inflation pressure for consistent operation at high speed.
- 24.2.2.2 The tyre shall not be referred to by name of manufacturer unless this is necessary to meet a requirement of this Design Rule. **
- 24.2.3 Choice of Tyres and Rims **
- 24.2.3.1 All tyres fitted to a vehicle shall be of the same type of carcass construction, but may vary in respect of cord materials and number of plies. **
- 24.2.3.2 The rims on the vehicle shall be constructed to the bead seat and flange dimensions of a rim specified in any one, or earlier editions, of the appropriate manual. **
- (i) the Tyre and Rim Standards Manual of the Tyre and Rim Association of Australia, 1981 Edition,
- (ii) the 1981 Tire and Rim Association Inc. Year Book,
- (iii) the British Standard, BS AU 50 Part 1: Section 1d: 1977 and Part 2a 1973,

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- (iv) the Japan Automobile Tyre Manufacturers Association 1974 Edition,
 - (v) the Japanese Industrial Standards (JIS-D4202) dated 1977, and (JIS-D4218) dated 1975,
 - (vi) the European Tyre and Rim Technical Organisation Practices (E.T.R.T.O.) dated 1981,
 - (vii) the Deutsche Industrie Norm (DIN) 7818, dated December 1979, and
 - (viii) Deutsche Industrie Norm (DIN) 7817, dated March 1979.
- 24.2.3.3 The tyre and rim combinations on the vehicle shall be included in the recommended combinations displayed on the placard except that, for the appropriate tyre size designation
- (i) tyres may have a greater maximum load rating than that shown on the placard;
 - (ii) tyres may have a performance rating representing a higher speed than applicable to the performance rating shown on the placard, and
 - (iii) tyres which have a winter tread may have a performance rating representing a lower speed than applicable to the performance rating shown on the placard provided that the placard or an additional placard located in the vicinity of the placard referred to in Clause 24.2.2 includes a warning 'When fitted with winter tread tyres, this vehicle should not be driven at high speeds'.
- 24.2.3.4 All tyre and rim combinations included on the placard (24.2.2 refers) shall be compatible. This condition will be met if the rim alternatives are included in Table 2 of Australian Design Rule No. 23 - New Pneumatic Passenger Car Tyres, or in Table 2 of Australian Design Rule 23A - New Pneumatic Passenger Car Tyres, or in a reference cited in Clause 24.2.3.2, or in a Nominated Standard referred in Clause 23B.1.17 of Australian Design Rule No. 23B - New Pneumatic Passenger Car Tyres for the particular tyre size designation.
- 24.2.3.5 The vehicle maximum load on the tyre for each tyre listed on the placard (24.2.2 refers) shall not be greater than the maximum load rating or the load capacity index of the tyre.
- 24.2.3.6 The vehicle normal load on the tyre for each tyre listed on the placard (24.2.2 refers) shall not be greater than the test load specified for the high speed test of Australian Design Rule No. 23 - New Pneumatic Passenger Car Tyres, or in Column (i) of the Schedule contained in Clause 23A.3.4.2.3 of Australian Design Rule
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23A - New Pneumatic Passenger Car Tyres, or in Column (i) of the schedule contained in Clause 23B.3.4.2.3 of Australian Design Rule No. 23B - New Pneumatic Passenger Car Tyres as appropriate. *

24.2.3.7 The performance rating or speed category of each tyre listed on the placard (24.2.2 refers) shall be such that the speed appropriate to the tyre as determined from Table 4 of Australian Design Rule No. 23 or Table 4 of Australian Design Rule 23A or Table 4 of Australian Design Rule 23B as appropriate is not less than the maximum speed of the vehicle as determined in Clause 24.1.1. *

24.2.3.8 No inflation pressure indicated on the placard (24.2.2 refers) shall be less than the inflation pressure determined from the appropriate table included in Australian Design Rule No. 23 - New Pneumatic Car Tyres or Australian Design Rule No. 23A - New Pneumatic Passenger Car Tyres, or in one of the Nominated Standards referred in Clause 23B.1.17 of Australian Design Rule No. 23B - New Pneumatic Passenger Car Tyres as appropriate to the vehicle normal load on the tyre. Where the Nominated Standard does not specify a pressure for the vehicle normal load on the tyre, the recommended pressures shall not be less than those obtained by linear interpolation between the two nearest loads specified in the Nominated Standard or, where only the maximum load is specified, from the formula *

$$P_R = P_M \times (L_{RN}/L_M)^{2.0}$$

in which P_R is the minimum recommended pressure

P_M is the specified pressure for the tyre maximum load rating

L_{RN} is the vehicle normal load on the tyre

L_M is the tyre maximum load rating

24.2.4 If tyres other than passenger car tyres are also recommended as suitable for fitment to the vehicle, the requirements of Clause 24.3.1 shall be met for such tyres. *

24.3 Requirements for Vehicles not Fitted with Passenger Car Tyres

24.3.1 Placard: A placard of durable material permanently affixed to the glove compartment door or an equally accessible location shall display

(i) for each rim profile recommended by the manufacturer, the recommended tyre size, the designation LT or similar to indicate the tyres are suitable for light trucks, a designation to identify the load carrying capacity, and the recommended pressures for normal operation,

(ii) any recommended variations in inflation pressure for loads other than normal and

(iii) a warning 'When fitted with these tyres the vehicle should not be driven for prolonged periods at high speeds'.

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- 24.3.2 The tyre and rim combinations on the vehicle shall be consistent with the recommended combinations on the placard.
- 24.3.3 If passenger car tyres are also recommended as suitable for fitment to the vehicle, the requirements of Clauses 24.2.2.1, 24.2.2.2, and 24.2.3.4 shall be met for such passenger car tyres. *

* Amended September 1985

