



COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 24A
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 shall comply with Australian Design Rule 24A - Tyre Selection.

VEHICLE CATEGORY	RULE		AMENDMENT	
	MANUFACTURED ON OR AFTER			
	24A			
Passenger Cars				
Forward Control Passenger Vehicles up to 8 seats	1 Jan 1986			
9 seats	1 Jan 1986			
Other Passenger Cars	1 Jan 1986			
Passenger Car Derivatives	1 Jan 1986			
Multi-Purpose Passenger Cars	1 Jan 1986			
Omnibuses up to 3.5 tonnes GVM				
up to 12 seats	1 Jan 1987			
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			

N/A - Not Applicable

GROSS VEHICLE MASS - Abbreviated to 'GVM'

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24A.1 Definitions

24A.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.

24A.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 2.3kg or more, plus 68kg for each of two front seat occupants plus, if the designated seating capacity is 5 or more, 68kg for a rear seat passenger.

24A.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 2.3kg or more, plus 68kg for the front seat occupant if only one front seating position is provided, or 68kg 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 incomplected vehicles over the rear axle.

24A.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 2.3kg or more, with a full capacity of lubricating oil, coolant and fuel plus additional loading equivalent to 68kg for each seating position plus the number of seating positions times 13.6kg for luggage.

24A.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.

24A.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. *

24A.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. *

24A.1.8 'Winter Tread' (includes tyres known as Mud and Snow or Snow) means a tyre whose tread pattern and whose structure are primarily designed to ensure in mud and fresh or melting snow a performance better than that of an ordinary (road-type) tyre. The tread pattern of a winter tread generally consists of groove (rib) and/or solid block elements more widely spaced than on an ordinary (road-type) tyre.

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- 24A.1.9 All the definitions set out in Australian Design Rule No.23B - New Pneumatic Passenger Car Tyres apply in this Design Rule.
- 24A.2 Requirements for Vehicles Fitted with Passenger Car Tyres
- 24A.2.1 Placard
- 24A.2.1.1 A placard of durable material shall be permanently affixed to the glove compartment door or an equally accessible location and shall display:
- (i) for each nominated rim profile, the recommended tyre size designations.
 - (ii) for each recommended tyre size designation, recommended pressures for each operating condition as specified by Clause 24A.2.2, and;
 - (iii) a statement concerning tyre load rating and speed category as specified in Clause 24A.2.3.

24A.2.2 Tyre Pressures

- 24A.2.2.1 The recommended pressures for operation up to 120 km/h for diagonal or bias-belted or up to 140 km/h for radial ply at normal load, shall be shown on the placard and shall not be less than the pressures specified in the Nominated Standard for the tyre size designation at 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

24A.2.2.2 If pressures for operation up to 120 km/h for diagonal or bias-belted or up to 140 km/h for radial ply at maximum load, specified in the Nominated Standard for the tyre size designation at the vehicle maximum load on the tyre are greater than those displayed on the placard in compliance with the requirements of Clause 24A 2.2.1, a recommended pressure or pressures shall be displayed which are not less than that specified in the Nominated Standard for the tyre size designation at the vehicle maximum load on the tyre. Where the Nominated Standard does not specify a pressure for the vehicle maximum load on the tyre, the recommended pressures shall not be less than those determined by using the formula *

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

in which P_R is the minimum recommended pressure

P_M is the specified pressure for the tyre maximum load rating

L_{RM} is the vehicle maximum load on the tyre

L_M is the tyre maximum load rating

24A.2.2.3 If pressures for operation above 120 km/h for diagonal or bias-belted or above 140 km/h for radial ply at the vehicle normal load or the vehicle maximum load are greater than the pressure or pressures displayed on the placard in compliance with the requirements of Clauses 24A.2.2.1 and 24A.2.2.2 respectively, a recommended pressure shall be displayed for each case which is not less than the minimum pressures required by Clauses 24A.2.2.1 and 24A.2.2.2 respectively increased by the pressure increments specified in Table 1 in ADR 23B appropriate to the maximum vehicle speed as defined in Clause 24A.1.1. If the resultant operating pressure exceeds the absolute maximum pressure specified in the Nominated Standard (Refer Clause 24A.2.5.6) the latter shall apply. *

Note 1: where the pressures specified for Clause 24A.2.2.1 are increased to meet the requirements of Clause 24A.2.2.2 and Clause 24A.2.2.3, such increased pressures may be expressed on the placard as an increment or increments.

Note 2: where increased pressures above those specified for Clause 24A.2.2.1 are not recommended on the placard the specified pressures must also comply with the requirements of Clause 24A.2.2.2 and Clause 24A.2.2.3.

24A.2.3 Load Rating, Load Index and Speed Category Statement:

24A.2.3.1 General

One of the statements specified in clauses 24A.2.3.2 to 24A.2.3.7 shall be displayed on the placard. Appropriate values for the range of vehicles for which the placard is applicable shall be included in the statement such that

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xxx kg is not less than the largest vehicle maximum load on the tyres

xx is the equivalent load index,

yyy kg is not less than the largest vehicle maximum load on the tyres of the front axle,

yy the equivalent load index,

zzz kg is not less than the vehicle maximum load on the tyres of the rear axle,

zz the equivalent load index, and

* is the speed category (Table 4, ADR 23B refers) appropriate for the highest maximum vehicle speed for that range of vehicles.

24A.2.3.2 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than xxx kg, or a load index of xx";

shall be displayed on the placard where the tyre size designations are the same for the front and rear axles and the maximum vehicle speed is 120 km/h or less.

24A.2.3.3 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than xxx kg, or a load index of xx and a speed category not less than *";

shall be displayed on the placard where the tyre size designations are the same for the front and rear axles and the maximum vehicle speed is greater than 120 km/h but not greater than 210 km/h.

24A.2.3.4 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than xxx kg, or a load index of xx and a speed category of V";

shall be displayed on the placard where the tyre size designations are the same for the front and rear axles and the maximum vehicle speed is greater than 210 km/h.

24A.2.3.5 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than yyy kg front and zzz kg rear or a load index of yy front and zz rear";

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shall be displayed on the placard where the tyre size designations on the front and rear axles are different and the maximum vehicle speed is 120 km/h or less.

24A.2.3.6 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than yyy kg front and zzz kg rear or a load index of yy front and zz rear and a speed category not less than *";

shall be displayed on the placard where the tyre size designations on the front and rear axles are different and the maximum vehicle speed is greater than 120 km/h but not greater than 210 km/h.

24A.2.3.7 The statement

"The tyres fitted to this vehicle shall have a maximum load rating not less than yyy kg front and zzz kg rear or a load index of yy front and zz rear and a speed category of V";

shall be displayed on the placard where the tyre size designations on the front and rear axles are different and the maximum vehicle speed is greater than 210 km/h.

24A.2.4 The tyre shall not be referred to by name of manufacturer or brand name on the placard.

24A.2.5 Choice of Tyres and Rims

24A.2.5.1 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.

24A.2.5.2 The rims on the vehicle shall be constructed to the dimensions of a rim specified in ADR 23B.

24A.2.5.3 The tyre and rim combinations on the vehicle shall be included in the recommended combinations displayed on the placard.

24A.2.5.4 The tyres on the vehicle shall have:-

- (i) maximum load rating equal to or greater than the load rating or load index shown on the placard referred to in Clause 24A.2.3;
- (ii) a speed category symbol representing a speed equal to or greater than the speed represented by the speed category shown on the placard referred to in Clause 24A.2.3.

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- 24A.2.5.4.1 Tyres which have a winter tread may have a speed category representing a lower speed than applicable to the speed category shown on the placard provided that the placard or an additional placard located in the vicinity of the placard referred to in Clause 24A.2.1 includes "When fitted with winter tread tyres, this vehicle should not be driven at speeds in excess of the tyre speed category symbol as moulded on the tyre or in absence thereof, not at high speeds".
- 24A.2.5.5 All tyre and rim combinations included on the placard (Clause 24A.2.1 refers) shall be compatible. This condition will be met if the rim alternatives are included in the Nominated Standard for the particular tyre size designation.
- 24A.2.5.6 Any recommended pressure(s) on the placard shall not exceed any absolute maximum permitted pressure specified in the Nominated Standard for each recommended tyre size designation.
- 24A.2.6 If tyres other than passenger car tyres are also recommended as suitable for fitment to the vehicle, the requirements of Clause 24A.3.1(iii) shall be met for such tyres.
- 24A.3 Requirements for Vehicles not Fitted with Passenger Car Tyres
- 24A.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 L.T. or similar if appropriate 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 this vehicle should not be driven for prolonged periods at high speeds".
- 24A.3.2 The tyre and rim combinations on the vehicle shall be consistent with the recommended combinations displayed on the placard.
- 24A.3.3 If passenger car tyres are also recommended as suitable for fitment to the vehicle, the requirements of Clause 24A.2 shall be met for such passenger car tyres.