COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 20
FOR
SAFETY RIMS

As Endorsed by the
Australian Transport Advisory Council

The intention of this Australian Design Rule is to specify wheel rims that will retain a deflated tyre in the event of a rapid loss of inflation pressure.

The Australian Transport Advisory Council has recommended to Commonwealth, State and Territory Governments that all motor vehicles specified below shall be equipped with safety rims complying with Australian Design Rule 20 - Safety Rims.

VEHICLE CATEGORY	RULE / AMENDMENT MANUFACTURED ON OR AFTER		
	20		
Passenger Cars			
Forward Control Passenger Vehicles up to 8 seats	1 Jan 1985		
9 seats	1 Jan 1986		
Other Passenger Cars	1 July 1970		
Passenger Car Derivatives	1 July 1970		
Multi-Purpose Passenger Cars	1 Jan 1973		
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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20.1 Requirement

20.1.1 When the rapid loss of tyre inflation pressure occurs with the vehicle travelling in a straight line at a road speed of at least 60 miles per hour or 80% of the maximum speed of the vehicle, whichever is the lower, the rim shall retain the deflated tyre until the vehicle can be stopped by the service brakes.

20.1.2 Test shall be conducted in accordance with the following procedure or other approved procedure.

20.2 Vehicle Preparation for Testing

20.2.1 Use only fully processed wheels and tyres which are representative of wheels and tyres intended for the vehicles.

20.2.2 The test wheel shall be a new, production finished, painted, clean wheel.

20.2.3 Wash and then dry a new tyre, which shall be within the tyre manufacturer's production tolerance, at the two beads.

20.2.4 Fit the tyre properly to the wheel, without the use of lubricant (other than water, if necessary). If water is used the tyre must be dry before testing. Inflate the tyre to the pressures specified for the manufacturers maximum weight for the vehicle.

20.2.5 Inflate all other tyres to pressures specified for the manufacturers maximum weight for the vehicle.

20.3 Test Conditions

20.3.1 Passenger Cars including station wagons shall be tested complete with all equipment, full capacity of fuel or their equivalent weight and full capacities of coolant and lubricant. In addition, a load of 150 lb shall be added in each unoccupied seating position. Other vehicles, including utilities and panel vans, shall be tested at the gross vehicle weight.

20.3.2 For each nominal rim size at least one test is required for each combination of tyre construction type and nominal size.

Tests shall be conducted for each combination on a front and a rear wheel position unless it can be shown that the tests on one of these wheel positions is representative of the other.

One means of showing this for a particular vehicle would be to distribute tests approximately equally between front and rear wheel positions subject to at least six tests being conducted.

20.3.3 The method of rapidly deflating the tyre is not critical provided that the deflation occurs within 3 seconds.

20.3.4 The test track shall be substantially flat, dry, solid and free from loose materials.

20.3.5 The device used for observing speed shall be verified so that the true speed achieved in each test is not less than the required test speed.

20.3.6 The deceleration of the vehicle shall not be less than 0.2g. This may be determined with the aid of a decelerometer or by calculation from the stopping distance determined with the use of equipment such as a brake operated chalk gun.

20.3.7 The accuracy of measurements of weights shall be ±2% and pressure shall be ±5% and the accuracy of the measuring devices for speed and deceleration shall be reported at read out points concerned in the test.

20.4 Test Procedures

20.4.1 Set the device for inducing deflation.

20.4.2 Accelerate the vehicle to at least the prescribed speed.

20.4.3 Induce tyre deflation.

20.4.4 As soon as deflation is obvious to the driver the vehicle shall be brought to rest by the use of the service brakes. The driver shall endeavour to maintain a straight course.