



COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 16
FOR
WINDSCREEN WIPERS AND WASHERS

As Endorsed by the
 Australian Transport Advisory Council

The intention of this Australian Design Rule is to define requirements for windscreen wipers and washers to ensure reasonable visibility through the windscreen in inclement weather.

The Australian Transport Advisory Council has recommended to Commonwealth, State and Territory Governments that all motor vehicles specified below fitted with a windscreen shall be equipped with a device(s) complying with Australian Design Rule 16 - Windscreen Wipers and Washers.

VEHICLE CATEGORY	RULE AMENDMENT		
	MANUFACTURED ON OR AFTER		
	16		
Passenger Cars			
Forward Control Passenger Vehicles up to 8 seats	1 Jan 1985		
9 seats	1 Jan 1986		
Other Passenger Cars	1 Jan 1973		
Passenger Car Derivatives	1 Jan 1973		
Multi-Purpose Passenger Cars	1 Jan 1974		
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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16.1 Definitions

The term 'seating reference point' is substituted for the terms 'manikin H point' and 'H point' wherever either of those terms appears in any SAE Standard or SAE Recommended Practice referred to in this Standard.

- 16.1.1 'Daylight opening' means the maximum unobstructed opening through any glass aperture, including reveal or garnish mouldings adjoining the glass, according to a given direction or projection. If not specified the dimension will be the vertical projection.
- 16.1.2 'Glazing surface reference line' means the line resulting from the intersection of the glazing surface and a horizontal plane 25 inches above the seating reference point, as shown in Figure 1 of SAE Recommended Practice J903a, 'Passenger Car Windshield Wiper Systems', May 1966, or other approved practice.
- 16.1.3 'Overall width' means the maximum overall body width measured across the body, excluding hardware and applied mouldings, but including fenders when integral with body.
- 16.1.4 'Plan view reference line' means -
- (a) For vehicles with bench type seats, a line parallel to the vehicle longitudinal centreline outboard of the steering wheel centreline 0.15 times the difference between one-half of the shoulder room dimension and the steering wheel centreline-to-car-centreline dimension, as shown in Figure 2 of SAE Recommended Practice J903a, May 1966, arranged opposite hand for right hand steering, or other approved practice, or;
 - (b) For vehicles with individual-type seats, either -
 - (i) A line parallel to the vehicle longitudinal centreline which passes through the centre of the driver's designated seating position, or;
 - (ii) A line parallel to the vehicle longitudinal centreline located so that the geometric centre of the 95 percent eye range contour is positioned on the longitudinal centreline of the driver's designated seating position.
- 16.1.5 'Shoulder room dimension' means the minimum lateral dimension between the door garnish mouldings or nearest interference measured in the lateral plan through the driver's seating reference point.
- 16.1.6 '95% eye range contour' means the 95th percentile eye ellipse defined and positioned as in Recommended Practices, SAE J941 (November 1965); SAE J941a (August 1967) 'Passenger Car Driver's Eye Range'; SAE J941b (February 1969); SAE J941c (June 1972); SAE J941d (February 1975); SAE J941e (March 1977); SAE J941 (March 1981) - Motor Vehicle Driver's Eye Range or in ISO 4513 - 1978(E) - Road Vehicles - Visibility - Method for establishment of eye ellipses for driver's eye location, suitably handed for right hand steering.

* Amended February 1984

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16.2 Windscreen Wiping System

Each vehicle shall have a power-driven windscreen wiping system that meets the requirements of Clauses 16.3 and 16.4

16.3 Frequency

16.3.1 Each windscreen wiping system shall have at least two frequencies or speeds.

16.3.2 One frequency or speed shall be at least 45 cycles per minute regardless of engine load and engine speed.

16.3.3 Regardless of engine speed and engine load, the highest and one lower frequency or speed shall differ by at least 15 cycles per minute. Such lower frequency or speed shall be at least 20 cycles per minute regardless of engine speed and engine load.

16.4 Wiped Area

When tested wet and at the lowest frequency, with windscreen wiping system shall wipe at least the percentages of areas A, B and C of the windscreen that are specified in Column 2 of the applicable section of Table 1.

16.4.1 Areas A, B and C shall be established as shown in Figures 1 and 2 of SAE Recommended Practice J903a, May 1966, arranged opposite hand for right hand steering using the angles specified in Columns 3 to 6 of the applicable section of Table 1 and ignoring any area outside a perimeter line on the glazing surface one inch from the edge of the daylight opening.

16.5 Windscreen Washing System

16.5.1 Each vehicle shall have a windscreen washing system capable of meeting the following requirements:

16.5.1.1 Within 15 seconds of applying to the windscreen a film consisting of one part test dust (as described in SAE J726 'Air Cleaner Test Code', or an approved substitute) and two parts water by volume, the system shall be capable of delivering sufficient fluid to clear, in conjunction with the wiper system, 75% of that portion of the windscreen which is swept by the wiper blades, after not more than 10 wiper cycles.

16.5.1.2 The system shall be capable of withstanding for not less than 60 secs., the loads induced when the system is actuated repeatedly and the nozzles are blocked.

16.5.1.3 The system shall meet the requirements of Clause 16.5.1.1 after exposure to a temperature of not less than 175°F for a period of not less than 8 hrs.

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- 16.5.1.4 The system shall meet the requirements of Clause 16.5.1.1 after
- (a) it has been maintained at a temperature not greater than 20°F for at least 4 hours before being thawed.
 - (b) it has undergone six operations during which the water is frozen for at least 4 hours and then thawed.
- 16.5.1.5. The system shall be operative after 8000 washer activations comprising four sets each of 2000 activations at within 50°F of 75°F, 150°F, 20°F and 75°F respectively. The rate of actuation shall be 2 per minute and the duration of each shall not exceed 3 secs., except for automatic systems when the duration shall be that provided by the system. An anti-freeze additive may be used to prevent freezing of the system fluid.

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This table has been taken from the U.S. Federal Standard and has been rehanded for Australian Conditions.

TABLE IA Vehicles at less than 60 inches in overall width

Column 1 Area	Column 2 Minimum Percent to be Wiped	Column 3 Angles in Degrees				Column 6
		Left	Right	Up	Down	
		A	80	49	16	
B	94	46	13	4	3	
C	99	15	7	3	1	

TABLE IB Vehicles of 60 or more but less than 64 inches in overall width

Column 1 Area	Column 2 Minimum Percent to be Wiped	Column 3 Angles in Degrees				Column 6
		Left	Right	Up	Down	
		A	80	51	17	
B	94	49	13	4	3	
C	99	15	7	3	1	

TABLE IC Vehicles of 64 or more but less than 68 inches in overall width

Column 1 Area	Column 2 Minimum Percent to be Wiped	Column 3 Angles in Degrees				Column 6
		Left	Right	Up	Down	
		A	80	53	17	
B	94	51	14	5	3	
C	99	15	8	4	1	

TABLE ID Vehicles of 68 or more inches in overall width

Column 1 Area	Column 2 Minimum Percent to be Wiped	Column 3 Angles in Degrees				Column 6
		Left	Right	Up	Down	
		A	80	56	18	
B	94	53	14	5	3	
C	99	15	10	5	1	