COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 21
FOR
INSTRUMENT PANELS

As Endorsed by the
Australian Transport Advisory Council

The intention of this Australian Design Rule is to define standards for instrument panels to reduce their injury potential to occupants on impact.

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 21 - Instrument Panels.

VEHICLE CATEGORY	RULE AMENDMENT MANUFACTURED ON OR AFTER		
	21		
Passenger Cars			
Forward Control Passenger Vehicles up to 8 seats	N/A		
9 seats	N/A		
Other Passenger Cars	1 Jan 1973		*
Passenger Car Derivatives	1 Jan 1973		
Multi-Purpose Passenger Cars	N/A		
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		

N/A - Not Applicable
GROSS VEHICLE MASS - Abbreviated to 'GVM'

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AUSTRALIAN DESIGN RULE NO. 21 - INSTRUMENT PANELS

21.1 Definitions

21.1.1 Head Impact Area - All non-glazed surfaces of the interior of a vehicle that are statically contactable by a 6.5 inch diameter spherical head form of a measuring device having a pivot point to 'top of head' dimensions infinitely adjustable from 29 to 33 inches in accordance with the following procedure, or its graphic equivalent.

21.1.1.1 At each designated seating position, place the pivot point of the measuring device:

(a) For seats that are adjustable fore and aft, at the seating reference point and a point 5 inches horizontally forward of the seating reference point and vertically above the seating reference point an amount equal to the rise which results from either a 5 inch forward adjustment of the seat or 0.75 inches; and

(b) For seats that are not adjustable fore and aft, at the seating reference point.

21.1.1.2 With the pivot point to 'top of head' dimensions at each value allowed by the device and the interior dimensions of the vehicle, determine all contact points above the lower windscreen glass line and forward of the seating reference point.

21.1.1.3 With the head form at each contact point, and with the device in a vertical position if no contact point exists for a particular adjusted length, pivot the measuring device forward and downward through all arcs in the vertical planes to 90 degrees each side of the vertical longitudinal plane through the seating reference point, until the head form contacts an interior surface or until it is tangent to a horizontal plane 1 inch above the seating reference point whichever occurs first.

21.2 General Requirements

21.2.1 Except as provided in Clause 21.2.2, when the area of the instrument panel that is within the head impact area is impacted in accordance with Clause 21.2.3 by a 15 pound, 6.5 inch diameter head form at a relative velocity of 15 miles per hour, the deceleration of the head form shall not exceed 80g continuously for more than 3 miliseconds.

21.2.2 The requirements of Clause 21.2.1 do not apply to -

21.2.2.1 Console Assemblies;

21.2.2.2 Areas less than 5 inches inboard from the juncture of the instrument panel attachment to the body side inner structure.

21.2.2.3 Areas closer to the windscreen juncture than those statically contactable by the head form with the windscreen in place;

21.2.2.4 Areas outboard of my point of tangency on the instrument panel of a 6.5 inch diameter head form tangent to and inboard of a vertical longitudinal plane tangent to the inboard edge of the steering wheel; or

21.2.2.5 Areas bwlow any point at which a vertical line is tangent to the rearmost surface of the panel.

21.2.3 Test Procedures

21.2.3.1 Tests shall be performed as described in Society of Automotive Engineers Recommended Practice J921 - Instrument Panel Laboratory Impact Test Procedure, June 1965, using the specified instrumentation or instrumentation that meets the performance requirements specified in Society of Automotive Engineers Recommended Practice J977 - Instrumentation for Laboratory Impact Test, November 1966, except that:

21.2.3.1 (a) The origin of the line to the instrument panel surface shall be a point on a transverse horizontal line through a point 5 inches horizontally forward of the seating reference point of the front outboard passenger designated seating position, displaced vertically an amount equal to the rise which results from either a 5 inch forward adjustment of the seat or 0.75 inches: and

(b) Direction of impact shall be either in a vertical plane parallel to the vehicle longitudinal axis or in a plane normal to the surface at the point of contact.

21.3 Interior Compartment Doors

21.3.1 Each interior compartment door assembly located in an instrument panel shall remain closed when tested in accordance with clauses 21.3.2.1 and 21.3.2.2 or clauses 21.3.2.1. and 21.3.2.3. Additionally, any interior compartment door located in an instrument panel shall remain closed when the instrument panel is tested in accordance with Clause 21.2.3. All interior compartment door assemblies with a locking device must be tested with the locking device in an unlocked position.

21.3.2 Test Procedures

21.3.2.1 Subject the interior compartment door latch system to an inertia load of 10g in a horizontal transverse direction and an inertia load of 10g in a vertical direction in accordance with the procedure described in section 5 of SAE Recommended Practice J839b - Passenger Car Side Door Latch Systems, May 1965, or an approved equivalent.

21.3.2.2 Conduct a front end longitudinal barrier collision test at not less than 30 miles per hour in accordance with Society of Automotive Engineers Recommended Practice J850 Barrier Collision Tests, February 1963, or an approved equivalent.

21.3.2.3 Subject the interior compartment door latch system to a horizontal inertia load on 30g in a longitudinal direction in accordance with the procedure described in section 5 of SAE Recommended Practice J839b - Passenger Car Side Door Latch Systems, May 1965, or an approved equivalent.