



Vehicle Standard (Australian Design Rule 22/00 – Head Restraints) 2006

Compilation: 1 (up to and including Amendment 1)

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A. LEGISLATIVE PROVISIONS**A.1. NAME OF STANDARD**

- A.1.1. This Standard is the Vehicle Standard (Australian Design Rule 22/00 – Head Restraints) 2006.
- A.1.2. This Standard may also be cited as Australian Design Rule 22/00 — Head Restraints.

A.2. COMMENCEMENT

- A.2.1. This Standard commences on the day after it is registered.

A.3. REPEAL

- A.3.1. This Standard repeals each vehicle standard with the name Australian Design Rule 22/00 — Head Restraints that is:
- (a) made under section 7 of the Motor Vehicles Standard Act 1989; and
 - (b) in force at the commencement of this Standard.
- A.3.2. This Standard also repeals each instrument made under section 7 of the Motor Vehicles Standard Act 1989 that creates a vehicle standard with the name Australian Design Rule 22/00 — Head Restraints, if there are no other vehicle standards created by that instrument, or amendments to vehicle standards made by that instrument, that are still in force at the commencement of this Standard.

B. SCOPE

The function of this vehicle standard is to specify requirements for the design of ‘*Head Restraints*’ so as to limit the severity of injury in the event of rear-end impacts and to ensure that the ‘*Head Restraint*’ cannot be adjusted too low.

C. APPLICABILITY AND IMPLEMENTATION**C.1. Applicability Summary**

This vehicle standard applies to the design and construction of vehicles as set out in the table below.

- C.2. Vehicles certified to Australian Design Rule (ADR) 3/03 or a later version need not comply with this rule.

C.3. Applicability Table

Vehicle Category	ADR Category Code	UNECE Category Code	Manufactured on or After	Acceptable Prior Rules
Moped 2 wheels	LA	L1	N/A	
Moped 3 wheels	LB	L2	N/A	
Motor cycle	LC	L3	N/A	
Motor cycle and sidecar	LD	L4	N/A	
Motor tricycle	LE	L5		
	LEM		N/A	
Enclosed vehicles	LEP & LEG		1 March 1991	Nil
All vehicles	LEP & LEG		1 July 1992	Nil
Passenger car	MA	M1	1 July 1988	Nil
Forward-control passenger vehicle	MB	M1	1 July 1988	Nil
Off-road passenger vehicle	MC	M1	1 July 1988	Nil
Light omnibus	MD	M2		
up to 3.5 tonnes 'GVM' and up to 12 seats	MD1		1 July 1988	Nil
up to 3.5 tonnes 'GVM' and more than 12 seats	MD2		N/A	
over 3.5 tonnes and up to 4.5 tonnes 'GVM'	MD3		N/A	
over 4.5 tonnes and up to 5 tonnes 'GVM'	MD4		N/A	
Heavy omnibus	ME	M3	N/A	
Light goods vehicle	NA	N1	1 July 1996	Nil
Medium goods vehicle	NB	N2		
over 3.5 tonnes up to 4.5 tonnes 'GVM'	NB1		N/A	
over 4.5 tonnes up to 12 tonnes 'GVM'	NB2		N/A	
Heavy goods vehicle	NC	N3	N/A	N/A
Very light trailer	TA	O1	N/A	
Light trailer	TB	O2	N/A	
Medium trailer	TC	O3	N/A	
Heavy trailer	TD	O4	N/A	

22.1. DEFINITIONS

- 22.1.1. Refer to Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005.

22.2. PROVISION, LOCATION AND SIZE

- 22.2.1. A *'Head Restraint'* must be provided for each front *'Outboard Seating Position'*. It may be provided with vertical and lateral adjustable mounting, and may be removable without the use of tools.
- 22.2.2. The *'Head Restraint'* must be so designed that:
- 22.2.2.1. it presents an impact surface which extends between 2 planes not less than 115 mm apart and normal to the *'Torso Line'*; and
- 22.2.2.2. the upper boundary of the impact surface is not less than 700 mm above the *'Seating Reference Point'* measured along the *'Torso Line'*, for any position of adjustment which may be provided.
- 22.2.3. The width of the *'Head Restraint'* must be not less than 250 mm for use with bench *'Seats'* and not less than 170 mm for use with individual *'Seats'* when measured between heights of 585 mm and 635 mm above the *'Seating Reference Point'* and along the *'Torso Line'*.
- 22.2.4. The *'Head Restraint'* must be so constructed and contoured to decelerate horizontal movements of the head without concentrations of load on it.

22.3. TEST REQUIREMENTS

- 22.3.1. The *'Head Restraint'* must meet the conditions of either a dynamic or static test.
- 22.3.2. In the dynamic test, acceleration of the seat supporting structure of up to 8 times the acceleration due to gravity, must not produce an angular displacement of the *'Head Reference Line'* of more than 45°.
- 22.3.3. In the static test the rearmost point of the head form must not be displaced to more than 102 mm perpendicularly *'Rearward'* of the displaced extended *'Torso Line'* during the application of the load specified in clause 22.5.3 nor must the *'Head Restraint'* fail before a failure of the *'Seat'* back or alternatively before the load has reached 890 N.

22.4. DYNAMIC TEST CONDITIONS

- 22.4.1. For testing compliance with clause 22.3.2 a dummy having the mass and seated height of a *'95th Percentile Adult Male'* and with an *'Approved'* representation of a human articulated neck structure must have lines marked to represent the *'Torso Line'* and, by extension, the *'Head Reference Line'*.
- 22.4.2. A dummy meeting the requirements of clause 22.4.1 must be placed in the seating position under test and restrained by a seat belt providing upper torso restraint.

- 22.4.3. A ‘*Forward*’ acceleration must be applied to the ‘*Seat*’ supporting structure. When graphically depicted, the magnitude of the acceleration curve must not be less than that of a half-sine wave having the amplitude of 8 times the acceleration due to gravity and a duration of 80 milliseconds and not more than that of a half-sine wave having an amplitude of 9.6 times the acceleration due to gravity and a duration of 96 milliseconds.

22.5. STATIC TEST CONDITIONS

- 22.5.1. For compliance with clause 22.3.3 a test device must be selected having back pan dimensions and ‘*Torso Line*’ of the 3-dimensional manikin specified in the SAE documents “Manikins for Use in Defining and Measuring Vehicle Seating Accommodation”, November 1962 or J826 APR90- “Devices for Use in Defining and Measuring Vehicle Seating Accommodation” (provided that the back pan dimensions are as specified in J826 - November 1962).
- 22.5.2. To establish the displaced ‘*Torso Line*’, a test device must be placed in the seating position under test and a ‘*Rearward*’ moment of 370 Nm about the ‘*Seating Reference Point*’ must be applied through the back pan.
- 22.5.3. After removing the back pan, using a 165 mm diameter spherical head form or a cylindrical head form having a 165 mm diameter in plan view and a 150 mm height in profile view, apply perpendicular to the displaced extended ‘*Torso Line*’, a ‘*Rearward*’ load, at a point 635 mm along the ‘*Torso Line*’ from the ‘*Seating Reference Point*’ that will produce a 370 Nm moment about the ‘*Seating Reference Point*’.
- 22.5.4. The load must be gradually increased to 890 N or until the ‘*Seat*’ back fails, whichever occurs first.

22.6. ALTERNATIVE STANDARDS

- 22.6.1. The technical requirements of ECE R 25/01, 25/02, 25/03 or 25/04 - “Head restraints (Headrests)” and FMVSS 202-33 F.R. 15065, October 9, 1968 “Head restraints - Passenger Cars” are deemed to be equivalent to the technical requirements of this rule provided that the requirements of clauses 22.2.2, 22.2.3 and 22.2.4 are complied with.
- 22.6.2. The technical requirements of ECE R 17/03, 17/04 or 17/05 “Seats, their Anchorages and any Head Restraints” are deemed to be equivalent to the technical requirements of this rule provided that the requirements of clauses 22.2.2, 22.2.3 and 22.2.4 are complied with. For vehicles which have an ECE approval to R17, the approval must be for vehicles with ‘*seats*’ fitted with, or capable of being fitted with a ‘*head restraint*’

NOTES

This compilation of Vehicle Standard (Australian Design Rule 22/00 - Head Restraints) 2006 includes all the instruments set out in the Table of Instruments. The Table of Amendments provides a history of clauses that have been amended, inserted or deleted.

Table of Instruments

Name of Instrument	Registration Date	Commencement Date
Vehicle Standard (Australian Design Rule 22/00 - Head Restraints) 2006	11/05/2006	12/05/2006
Vehicle Standard (Australian Design Rule 22/00 - Head Restraints) 2006 Amendment 1	11/05/2006	12/05/2006

Table of Amendments

Clause affected	How affected	Amending instrument
C2. (former)	C2 → C3	Vehicle Standard (Australian Design Rule 22/00 - Head Restraints) 2006 Amendment 1
C2.	ad	Vehicle Standard (Australian Design Rule 22/00 - Head Restraints) 2006 Amendment 1

ad = added or inserted

am = amended

del = deleted or removed

rr = removed and replaced

→ = clause renumbered. This takes the format of old no. → new no.