Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 2006 Compilation 1

Compilation:	1 (up to and including Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 2006 Amendment 1)
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Compiled by:	Vehicle Safety Standards, Department of Transport and Regional Services.

CONTENTS

A. LEGISLATIVE PROVISIONS

A.1. NAME OF STANDARD

A.1.1. This Standard is the Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 2006.

A.1.2. This Standard may also be cited as Australian Design Rule 29/00 — Side Door Strength.

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 29/00 — Side Door Strength 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 29/00 — Side Door Strength, 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 Design Rule is to specify strength and stiffness requirements for side doors of passenger cars which can be used for occupant access to reduce intrusion into the passenger compartment as a result of side impact.

C. APPLICABILITY

C.1. Applicability Summary

C.1.1 This ADR applies to the design and construction of vehicles as set out in the table hereunder.

C.1.2. For NA vehicles, applicability of this rule is limited to vehicles having two-wheel drive, which are not *'Forward Control Vehicles'*, and have front row *'Seats'* only.

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	
	LEP		1 July 1992	Nil
	LEG		N/A	
Passenger car	MA	M1	1 July 1988	Nil
Forward-control passenger vehicle	MB	M1	1 July 1996	Nil
Off-road passenger vehicle	MC	M1	1 July 1997	Nil
Light omnibus	MD	M2	N/A	
Heavy omnibus	ME	M3	N/A	
Light goods vehicle	NA1	N1**	1 July 1997*	Nil
Light goods vehicle	NA2	N1	N/A	
Medium goods vehicle	NB	N2	N/A	
Heavy goods vehicle	NC	N3	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	

* see clause C.1.2.

** up to 2.7 tonnes *'GVM'* only

29.0. DEFINITIONS

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

29.1. REQUIREMENTS

29.1.0.1. The vehicle must meet the requirements of either clauses 29.1.1 or 29.1.2 at the '*Manufacturer's*' option.

29.1.0.2. The vehicle must be so constructed that when any side door which can be used for occupant access is tested in accordance with clause 29.2, the crush resistance as determined by clause 29.3 must not be less than the following:

29.1.1. Crush Resistance with '*Seats*' Removed

29.1.1.0. With **'***Seats*' that may affect the load upon, or deflection of, the side of the vehicle body removed from the vehicle, the vehicle must meet the requirements of Clauses 29.1.1.1 to 29.1.1.3.

29.1.1.1. For initial crush resistance: 10 kN or 0.83 times the unladen weight of the vehicle, whichever is the lesser figure;

29.1.1.2. For intermediate crush resistance: 15.5 kN or 1.3 times the unladen weight of the vehicle, whichever is the lesser figure; and

29.1.1.3. For peak crush resistance: 31 kN or 2 times the unladen weight of the vehicle, whichever is the lesser figure.

29.1.2. Crush Resistance with *'Seats'* Installed

5.2.0. With '*Seats*' installed in the vehicle, and located in any horizontal or vertical position to which they can be adjusted and at any seat-back angle to which they can be adjusted, the vehicle must meet the requirements of clauses 29.1.2.1 to 29.1.2.3.

29.1.2.1. For initial crush resistance:- 10 kN or 0.83 times the unladen weight of the vehicle, whichever is the lesser figure;

29.1.2.2. For intermediate crush resistance: 19.44 kN or 1.63 times the unladen weight of the vehicle, whichever is the lesser figure; and

29.1.2.3. for peak crush resistance: 55.33 kN or 3.5 times the unladen weight of the vehicle, whichever is the lesser figure.

29.2. TEST PROCEDURE

29.2.1. Preparation

29.2.1.1. Side windows must be in the closed position and doors may be in the locked position.

29.2.1.2. The body sill of the side of the vehicle body opposite to the side being tested must be placed against a substantially rigid surface.

29.2.1.3. The vehicle body must be fixed in position by means of attachments located at or in front of the front wheel centreline and at or to the rear of the rear wheel centreline.

29.2.2. Loading Device

29.2.2.1. The loading device must consist of a substantially rigid cylinder or semi-cylinder 305 mm ± 5 mm in diameter, with edge radii of 12 mm ± 1 mm.

29.2.2.2. The loading device must be of such a length that when set up in accordance with the procedure specified in Clause 29.2.3, one end surface is at least 12 mm beyond the bottom edge of the door window opening, but not of a length that will cause contact with any structure, other than window glass and ventilation window sashes, beyond the bottom edge of the door window opening during the test.

29.2.2.3. The loading device must be so constrained that, during the test, it does not rotate nor is it displaced from its direction of travel.

29.2.3. Test Method

29.2.3.1. The loading device described in clause 29.2.2 must be used to apply the test load.

29.2.3.2. The loading device must be located so that:

29.2.3.2.1. its longitudinal axis is:

29.2.3.2.1.1. parallel to the vertical longitudinal plane of the vehicle; and

29.2.3.2.1.2. in the transverse vertical plane of the vehicle which passes through the midpoint of a horizontal line which is drawn across the outer surface of the door 127 mm ± 2 mm above the lowest point of the door when the vehicle is standing on a horizontal surface;

29.2.3.2.2. an end surface is not closer to the lowest point of the door than the line described in clause 29.2.3.2.1; and

29.2.3.2.3. the cylindrical face of the device is in contact with the outer surface of the door.

29.2.3.2.4. The location of the loading device is illustrated in Figure 1.

29.2.3.3. The load must be applied to the outer surface of the door in an inboard transverse direction normal to the vehicle's longitudinal centreline.

29.2.3.4. The load must be applied such that the travel rate of the loading device does not exceed 13 mm per second until the loading device has been displaced either 460 mm or, provided the peak crush resistance has been satisfied, at least 310 mm. The test must be completed within 120 seconds.

29.2.3.5. The variation of displacement of the loading device with applied load must be recorded during the test, either continuously or in increments of not more than 26 mm or 890 N for the total crush distance.

29.3. DETERMINATION OF CRUSH RESISTANCE

29.3.1. From the results recorded as specified in clause 29.2.3.5, a curve of load versus displacement must be plotted and the integral of the applied load with respect to the crush distances specified in clause 29.3.2 and clause 29.3.3 obtained. These quantities divided by the specified crush distances represent the average forces required to deflect the door over these distances.

29.3.2. The initial crush resistance is the average force required to deform the door over the initial 155 mm of crush.

29.3.3. The intermediate crush resistance is the average force required to deform the door over the initial 310 mm of crush.

29.3.4. The peak crush resistance is the largest force recorded over a total crush distance not exceeding 460 mm.

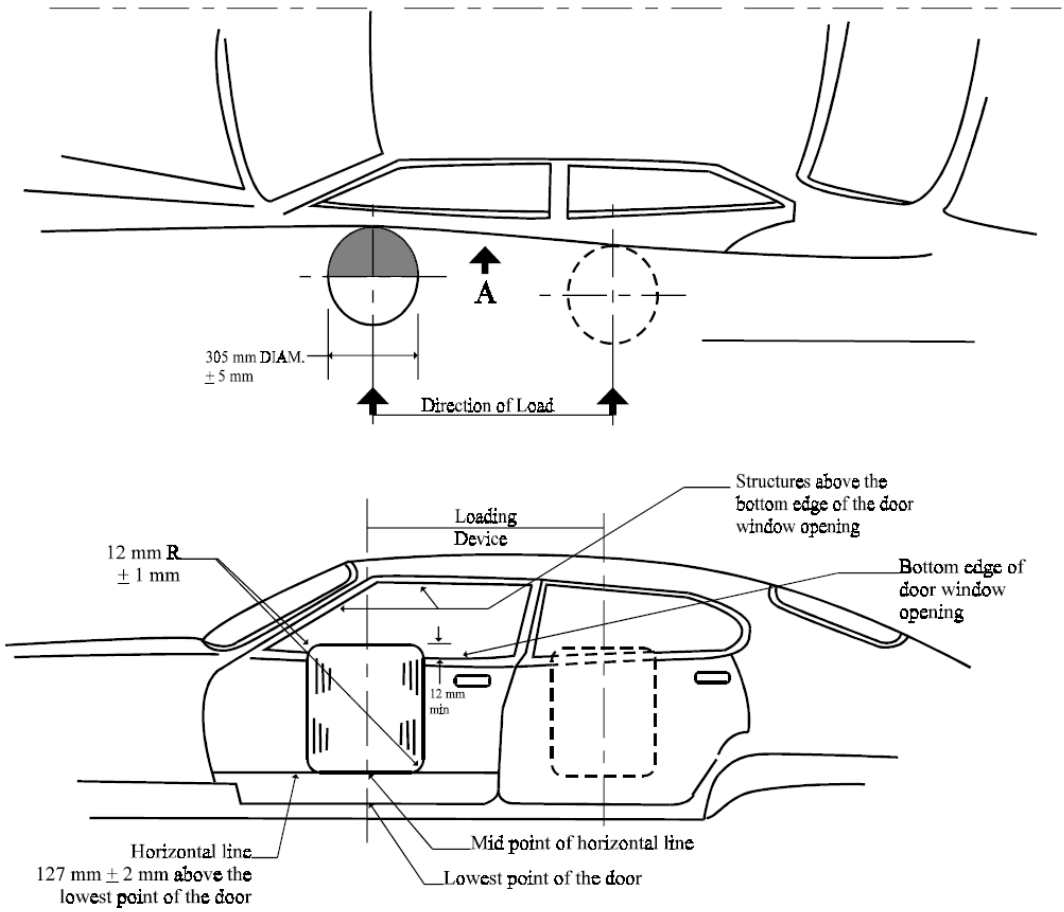
29.4. ALTERNATIVE STANDARDS

The technical requirements of S3 and S4 of FMVSS 214-35 F.R. 16801, October 30, 1970 "Side Door Strength - Passenger Cars" as amended by FMVSS 214-58 FR 14169 - are deemed to be equivalent to the technical requirements of this rule.

29.5. EXEMPTION FROM TEST REQUIREMENTS

Vehicles complying with the requirements of ADR 72/… are exempt from the requirements of this rule.

LONGITUDINAL CENTERLINE OF VEHICLE



VIEW A

LOADING DEVICE LOCATION AND APPLICATION TO THE DOOR

Figure 1

COMPILATION NOTES

This compilation of Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 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 29/00 – Side Door Strength) 2006	11/05/2006	12/05/2006
Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 2006 Amendment 1	19/09/2007	20/09/2007

Table of Amendments

Clause affected	How affected	Amending instrument
Applicability Table	rr	Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 2006 Amendment 1
Figure 1	ad	Vehicle Standard (Australian Design Rule 29/00 – Side Door Strength) 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.