

Low Volume Vehicle Technical Association Incorporated
Low Volume Vehicle Standard
155-40(02)
(Interior Impact)

This Low Volume Vehicle Standard corresponds with: Land Transport Rule 32002/1 (Interior Impact)

2nd Amendment – effective from: 25 October 2016

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| Signed in accordance with clause 1.5 of the Low Volume Vehicle Code, on.....by: | |
| on behalf of the New Zealand Transport Agency : | on behalf on the Low Volume Vehicle Technical Association(Inc) : |
| | |

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Note that highlighted text shows amendments that have been made subsequent to the document’s previous issue, and a grey vertical stroke to the left of the text denotes information that is of a technical (rather than a formatting) nature.

Overview

Background

The Low Volume Vehicle Technical Association Incorporated (LVVTA) represents ten specialist automotive groups who are dedicated to ensuring that vehicles, when scratch-built or modified, meet the highest practicable safety standards. The information in these standards has stemmed from work undertaken by LVVTA founding member organisations that commenced prior to 1990 and has been progressively developed as an integral part of NZ Government safety rules and regulations by agreement and in consultation with the New Zealand Transport Agency. As a result, the considerable experience in applied safety engineering built up by LVVTA and the specialist automotive groups over the past twenty years can be of benefit to members of the NZ public who also wish to build or modify light motor vehicles.

Availability of low volume vehicle standards

Low volume vehicle standards are developed by the LVVTA, in consultation with the New Zealand Transport Agency, and are printed and distributed by the LVVTA. The standards are available to the public free of charge from the LVVTA website; www.lvvta.org.nz

Further information on the availability of the low volume vehicle standards may be obtained by contacting the LVVTA at info@lvvta.org.nz.

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Associated information

Other associated information relevant to the subject matter contained in this low volume vehicle standard, which in the interest of comprehensiveness, should be read in conjunction with this standard, includes:

| Document | Page #/Section/Chapter |
|---|-------------------------------|
| <ul style="list-style-type: none"> New Zealand Car Construction Manual | Chapter 16 Interior Equipment |
| <ul style="list-style-type: none"> | |

Note that all documents referred to in this table, with the exception of the NZ Car Construction Manual, can be accessed from www.lvvta.org.nz free of charge. For information on obtaining the NZ Car Construction Manual, contact info@lvvta.org.nz

Note also that paper copies of documents can become out of date and as such should not be relied upon, therefore LVVTA advises users of this standard to check to ensure that the Associated Information listed here is current, by going to www.lvvta.org.nz/standards.html.

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Interior Impact

(155-40[02])

Purpose of this standard

The purpose of this low volume vehicle standard is to specify requirements for interior fittings, controls, and surfaces so as to minimise the level of injury to occupants who might come into contact with such items during a collision.

Section 1 Scope and application of this standard

1.1 Scope of this standard

1.1(1) This low volume vehicle standard applies to all light vehicles other than those specified in 1.1(2), that are:

- (a) modified on or after 1 January 1992 in such a way that any interior fittings, controls, or surfaces may, directly or indirectly, be affected; or
- (b) scratch-built on or after 1 January 1992.

1.1(2) This low volume vehicle standard does not apply to:

- (a) powered bicycles of Class AB; or
- (b) motorcycles and mopeds of Class LA, LB, LC, or LD; or
- (c) light trailers of Class TA or TB; or
- (d) those vehicles specified in *section 4*.

1.2 Application of this standard

1.2(1) A light vehicle that is modified or scratch-built as in 1.1(1), becomes a low volume vehicle, and must:

- (a) be certified in accordance with the procedures specified in *chapter 2* of the *Low Volume Vehicle Code*; and
- (b) unless *section 3* applies, comply with all applicable technical requirements contained in *section 2* of this standard.

NOTE: Where a light vehicle is required to be certified to the *Low Volume Vehicle Code*, but the modification date precedes the date upon which this standard takes effect (1 June 2002), an LVV Certifier must ensure that the vehicle meets the general safety requirements contained in 2.1 of this standard, and should use the applicable technical requirements of section 2 of this standard as a guideline upon which to base his judgements on the safety of the vehicle.

Section 2 **Technical requirements of this standard**

2.1 **General safety requirements**

- 2.1(1) A low volume vehicle must:
- (a) be designed and constructed using materials and components that are fit for their purpose; and
 - (b) be safe to be operated on the road.

NOTE: The requirements specified in 2.1(1) are selected from 2.3 of Part 2 of the *Low Volume Vehicle Code*, reproduced here in the interest of convenience, and are over-riding requirements which make it clear that, regardless of what technical requirements are or are not in place, every vehicle certified to the *Low Volume Vehicle Code* must be fit for its purpose, and must be safe.

- 2.1(2) The condition of interior fittings, controls, and surfaces in the passenger compartments of a motor vehicle must be maintained so that the likelihood of injury to occupants is minimised.
- 2.1(3) For a motor vehicle manufactured on or after 1 March 1998, or whose interior fittings, controls, and surfaces have been modified on or after 1 March 1998, the fittings, controls and surfaces in the passenger compartments of that vehicle must be designed, as well as maintained, so that the likelihood of injury to occupants is minimised.

NOTE: The requirements specified in 2.1(2) and 2.1(3) are the applicable general safety requirements from 2.2(1) and 2.2(2) of *Land Transport Rule Interior Impact 2001 (Rule 32002/1)* which are required as part of this low volume vehicle standard, are reproduced here in the interest of convenience.

2.2 **Defining occupant cell zones**

Defining A-Zone areas

- 2.2(1) The A-Zone of a low volume vehicle occupant cell is the area inside:

- (a) an arc swung in a forward direction from the h-point using either a LVVTA body frame, or a LVVTA H-point template as shown in diagram 2.2(1)(a) with the seat in its mid-point position if adjustable, from the seatback in a normal driving position to the seat base (see diagram 2.2(1)(a)), of:
 - (i) where web-clip retractor lap and diagonal or four-point harness seatbelts are fitted, a 700 mm radius (see diagram 2.2(1)); or
 - (ii) where seatbelts of types other than those specified in 2.2(1)(a)(i) are fitted, a 900 mm radius (see diagram 2.2(1)); and

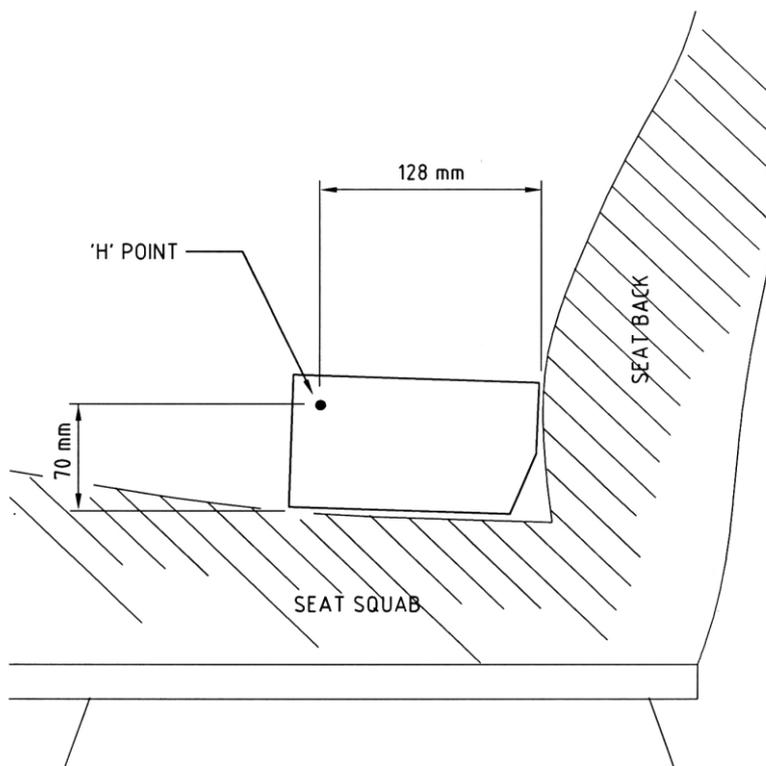
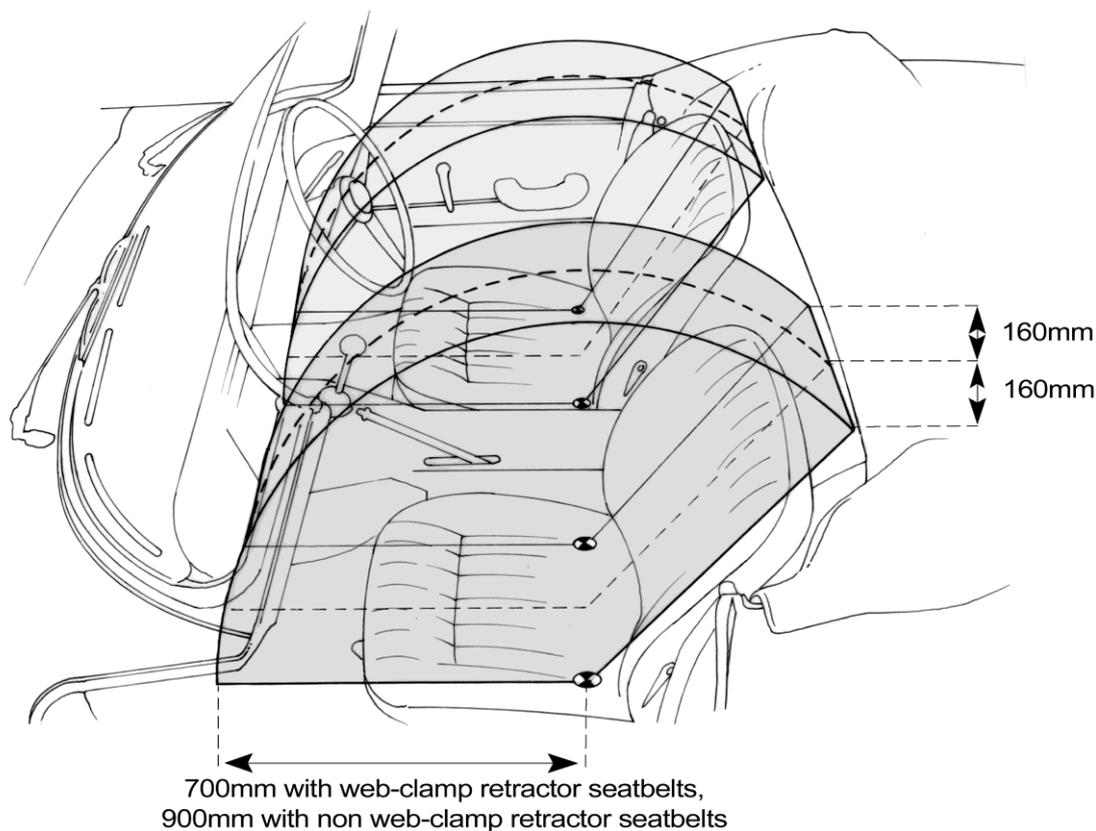


Diagram 2.2(1)(a) LVVTA H-point template

- (b) 160 mm on either side of the longitudinal centerline of each seating position (see diagram 2.2(1)); and
- (c) excludes any C-Zone areas which overlap the A-Zone (see diagram 2.2(1)).



The two 'A-Zone' areas are shown in shading

Diagram 2.2(1) Occupant cell A-zone areas

Defining B-Zone areas

2.2(2) The B-Zone of a low volume vehicle occupant cell is the remaining area within the occupant cell surrounding the A-Zone specified in 2.2(1), but does not include the C-Zone of a low volume vehicle occupant cell specified in 2.2(3).

Defining C-Zone areas

2.2(3) The C-Zone of a low volume vehicle occupant cell is:

- (a) the area:
 - (i) below the horizontal plane measured at the lowest point of the front seat cushion (see diagram 2.2(3)(a)); and
 - (ii) behind, and following a plane extending upward, parallel to the back of the backrest on the rearmost seat (see diagram 2.2(3)(a)); and

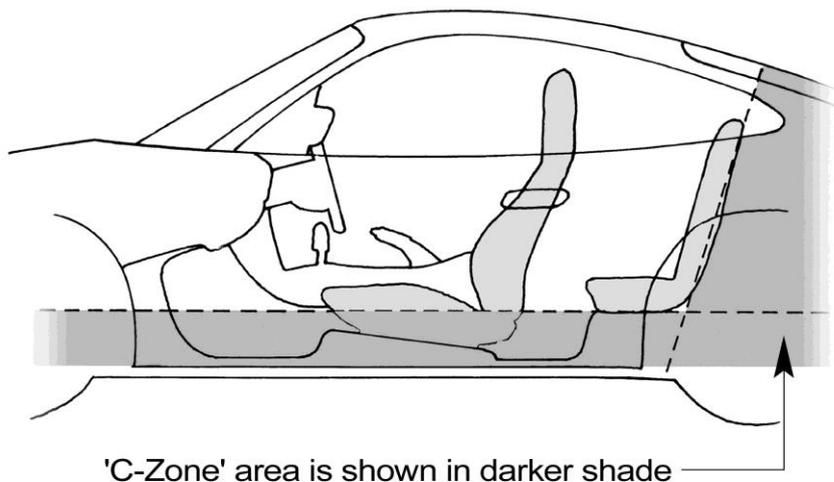


Diagram 2.2(3)(a) Below seat line C-zone area

- (b) provided that no front center seating position exists, the width of the dashboard and center console surface area, which may not exceed 140 mm on either side of the longitudinal centerline of the vehicle (see diagram 2.2(3)(b)); and:

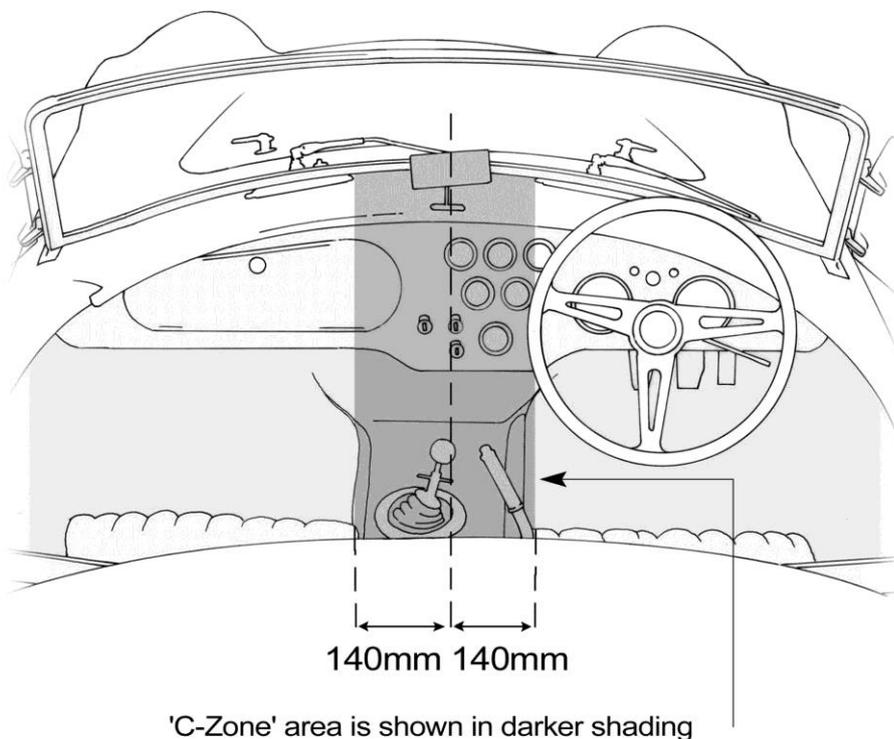


Diagram 2.2(3)(b) Dashboard and centre console C-zone area

- (c) the area forward of the steering wheel or control, defined as a forward horizontal projection of an area 400 mm across, circumscribing the uppermost end of the steering column, provided that no fittings, controls, or surfaces are positioned closer than 100 mm from the dashboard surface to the steering wheel (see diagram 2.2(3)(c)); and

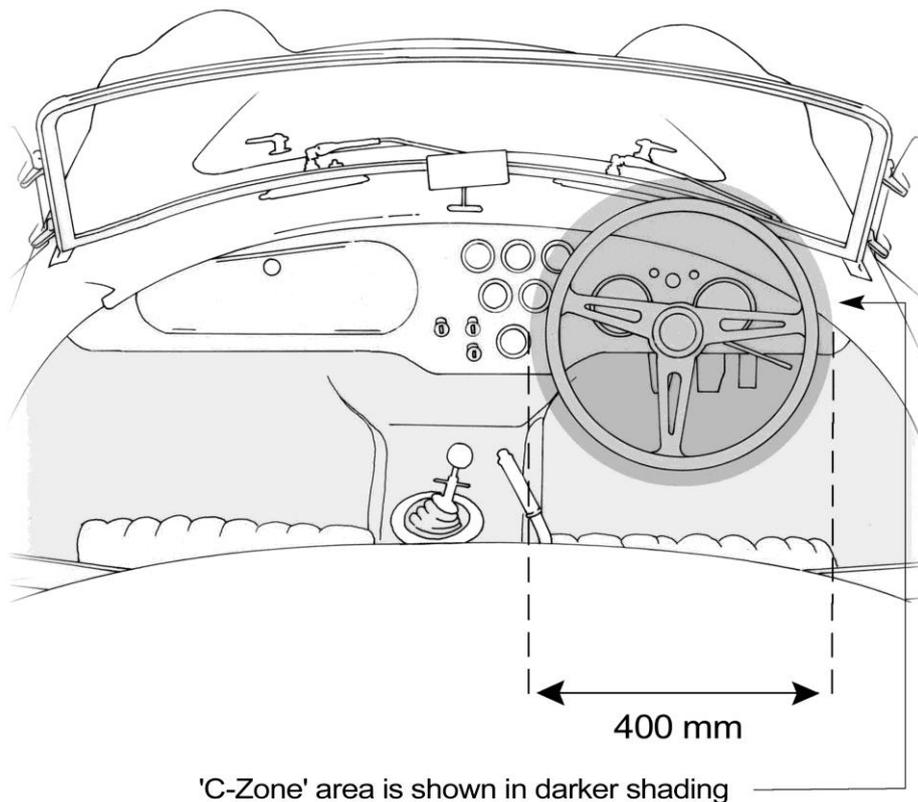


Diagram 2.2(3)(c) Steering control C-zone area

- (d) any part of the dashboard and instrument panel between the edge of the area specified in 2.3(7)(c) and the nearest inner pillar or sidewall area (see diagram 2.2(3)(d)); and
- (e) any window glass or window glass framing; and
- (f) roof bows and related components within a hood frame of a convertible vehicle; and
- (g) any area which is unable to be contacted by a 165 mm diameter head-sphere; and

- (h) any other areas which could not reasonably be expected to be contacted by an occupant in the event of a front, rear, or side impact, or a roll-over.

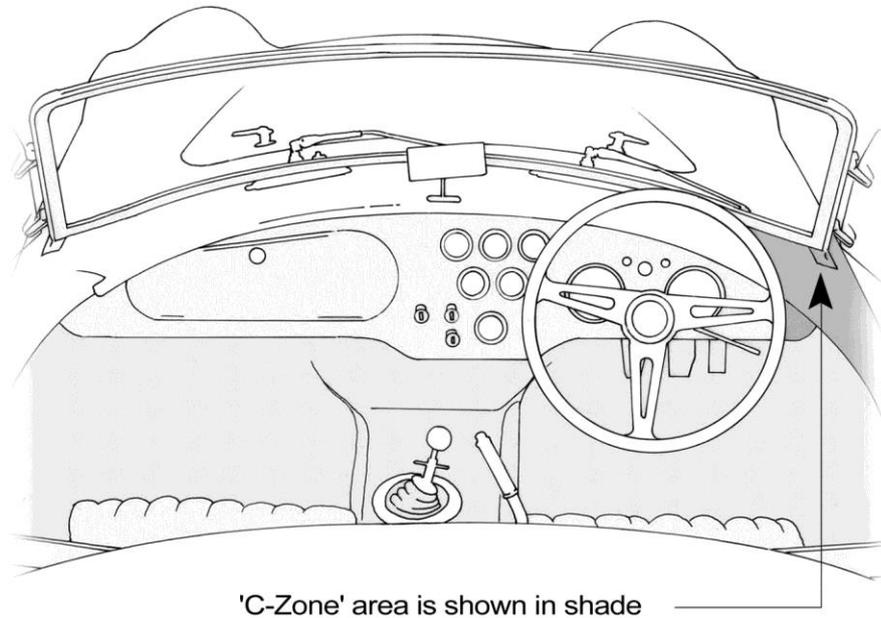


Diagram 2.2(3)(d) Steering control to nearest pillar or sidewall C-zone area

2.3 Requirements for A-zone interior fittings, controls, and surfaces

- 2.3(1) All interior fittings, controls, and surfaces within the A-Zone of a low volume vehicle occupant cell, except those specified in *section 3*, must comply with the applicable design requirements in 2.3.

Dashboard surfaces

- 2.3(2) Upper and lower surfaces of dashboard fascias, shelves, and trays fitted within the A-Zone of a low volume vehicle occupant cell must be designed and constructed so that any surfaces that face the occupants:
 - (a) have all corners and edges with a radius of no less than 5 mm; and
 - (b) either:
 - (i) absorb impact energy by collapsing, deforming, or displacing in the event of an impact, leaving no sharp projections in doing so; or

- (ii) are covered in an energy-absorbing material of no less than 10 mm thickness, protected by a rigid surface positioned beneath of the energy-absorbing material to prevent the penetration of sharp objects through the energy-absorbing material into the occupant cell.

Dashboard supporting structures

2.3(3) Any solid structure supporting any deformable upper or lower surfaces of dashboard fascias, shelves, and trays within the A-Zone of a low volume vehicle occupant cell, must:

- (a) if directly exposed to the occupant cell, have any sections of the structure that face the occupants:
 - (i) provided with a radius on all corners and edges of no less than 10 mm; and
 - (ii) be covered in an energy-absorbing material of no less than 10 mm thickness, protected by a rigid surface positioned forward of the energy-absorbing material to prevent the penetration of sharp objects through the energy-absorbing material into the occupant cell;

and

- (b) if not directly exposed to the occupant cell, but positioned within 50 mm beneath any surface that is exposed to the occupant cell and faces the occupants, either:
 - (i) the structure must have all corners and edges facing the occupant cell with a radius of no less than 10 mm, or
 - (ii) the surface of the structure facing the occupant cell must be covered by an energy-absorbing material of no less than 10 mm thickness; or
 - (iii) the surface above the structure must be covered in an energy-absorbing material of no less than 10 mm thickness, protected by a rigid surface positioned forward of the energy-absorbing material to prevent the penetration of sharp objects through the energy-absorbing material into the occupant cell.

Roll-bars and roll-cages

2.3(4) No part of any roll-bar or roll-cage may be positioned within the A-Zone of a low volume vehicle occupant cell.

Seats

- 2.3(5) Any part of a seat-back positioned within a rear seat A-Zone of a low volume vehicle occupant cell must:
- (a) have the area at the top of the seat-back covered in an energy absorbing material; and
 - (b) either
 - (i) be padded and upholstered; or
 - (ii) have the seat-back manufactured from a smooth deformable material.
- 2.3(6) In the case of a swing-out seat that is retro-fitted to a low volume vehicle to assist the entry and exit of a person with a disability, that is positioned immediately forward of an original seating position, either:
- (a) the adjacent seat must be removed, together with its associated seatbelt; or
 - (b) the swing-out seat has:
 - (i) all parts positioned within the A-zone of an adjacent seating position covered in an energy-absorbing material of not less than 10 mm thickness; and
 - (ii) a label placed in a prominent location where it is clearly visible to the occupant of the affected seating position, warning the occupant that the presence of the swing-out seat could reduce the interior impact protection originally provided by the vehicle manufacturer.

Steering column and wheel

- 2.3(7) A steering column and wheel fitted within the A-Zone of a low volume vehicle occupant cell must meet any applicable requirements specified in *LVVTA Low Volume Vehicle Standard 190-20 (Steering Systems)*.

Fittings and controls

- 2.3(8) Any fittings or controls positioned within the A-Zone of a low volume vehicle occupant cell must be mounted in such a way that upon contact by an occupant in the event of an impact, the fitting or control will collapse through the panel or surface to which it is attached, leaving no sharp edges in doing so.

- 2.3(9) A glove-box compartment door fitted within the A-Zone of a low volume vehicle occupant cell must incorporate a latching mechanism that minimizes the likelihood of the door opening in the event of an impact.

2.4 Requirements for B-zone interior fittings, controls, and surfaces

- 2.4(1) All interior fittings, controls, and surfaces within the B-Zone of a low volume vehicle occupant cell, except those specified in *section 3*, must comply with the applicable design requirements in 2.4.

Dashboard surfaces

- 2.4(2) Upper and lower surfaces of dashboard fascias, shelves, and trays fitted within the B-Zone of a low volume vehicle occupant cell, must be designed and constructed so that any surfaces that face the occupants:

- (a) have all corners and edges with a radius of no less than 5 mm; and
- (b) either:
 - (i) absorb impact energy by collapsing, deforming, or displacing in the event of an impact, leaving no sharp projections in doing so; or
 - (ii) are covered in an energy-absorbing material of no less than 10 mm thickness, protected by a rigid surface positioned beneath of the energy-absorbing material to prevent the penetration of sharp objects through the energy-absorbing material into the occupant cell.

Switches, knobs, and instruments

- 2.4(3) **Dashboard switches**, knobs, instruments, accessory equipment, and other fittings and controls fitted to a low volume vehicle which protrude from the dashboard surface by:

- (a) between 5 mm and 10 mm from the panel surface, must have a face area of no less than approximately 2 cm²; or
- (b) 10 mm or further from the panel surface, must have a face area of no less than approximately 6 cm².

- 2.4(4) All dashboard and steering column switches, knobs, instruments, accessory equipment, and other fittings and controls fitted to a low volume vehicle must be attached in such a way as to remain secure during normal vehicle operation, and either:

- (a) have all contactable edges and corners with a radius of no less than 3 mm; or
- (b) be designed so that in the event of an impact the items will collapse through the panel surface, or break off or bend, leaving no sharp edges or protrusions facing towards the occupant cell in doing so.

Handbrake levers and gear levers

2.4(5) A gear lever or handbrake lever fitted to a low volume vehicle, whilst in the fully released position, must:

- (a) be designed and constructed so as to minimize the risk of injury to occupants in the event of contact; and
- (b) not have associated linkages, flanges, mounting brackets, or shafts, protruding in such a way as to increase the risk of injury to occupants in the event of contact.

Roof and pillar sections

2.4(6) Surfaces within the roof and side pillar area of a low volume vehicle including roof bows, pillars, cant rails, and header rails which face the occupant cell must not:

- (a) have any exposed edges or corners of any solid sections with a radius of less than 3 mm; and
- (b) have any exposed handles, support brackets, or other protrusions attached to the pillars or header rails unless they:
 - (i) are constructed of, or covered by, an energy-absorbing material; and
 - (ii) have all corners and edges with a radius of no less than 3 mm.

Roll-bars and roll-cages

2.4(7) A roll-bar may be positioned within the B-Zone of a low volume vehicle occupant cell, providing that the requirements of 2.4(9) are met.

2.4(8) A roll-cage may be positioned within the B-Zone of a low volume vehicle occupant cell, provided that

- (a) the vehicle is not a modified production Class MA, with unitary body construction, which has a permanent roof structure; and

- (b) the requirements of 2.4(9) are met.

2.4(9) A low volume vehicle fitted with a roll-bar or a roll-cage, must have:

- (a) a head restraint fitted to provide protection for each occupant where a roll-bar or roll-cage section exists immediately behind a seat, positioned between the occupant seating position and the roll-bar or roll-cage section; and
- (b) no unprotected hard or sharp bracketry including a roll-bar or roll-cage mount, seatbelt mount, or fastener positioned where it would be likely to be contacted by an occupant in the event of an impact or roll-over; and
- (c) all sections of a roll-bar or a roll-cage positioned adjacent to any A-Zone must be covered in a high density energy absorbing material which:
 - (i) meets SFI specification 45.1 or another equivalent motor-sporting specification; and
 - (ii) is not less than 15 mm in thickness in the area facing the occupant cell.

NOTE: The Low Volume Vehicle Technical Association (Inc) encourages the use of externally mounted roll-bars and roll-cages as a preferred alternative method of roll-over protection for vehicles involved in hazardous commercial or recreational activities, as this design avoids the intrusion of additional solid surfaces into the occupant cell.

Sun-visors

2.4(10) A low volume vehicle must be fitted with an effective and adjustable sun-visor for the use of the driver, unless:

- (a) due to the design of the vehicle, a sun-visor cannot be practicably fitted; or
- (b) there is insufficient available interior space or windscreen height for a sun-visor to operate effectively and safely.

2.4(11) A sun-visor assembly, complete with its attachment structure, sourced from a production motor vehicle may be fitted to a low volume vehicle, provided that:

- (a) the sun-visor assembly is unmodified; and
- (b) the sun-visor assembly is mounted so as to replicate the location and installation method employed by the donor vehicle manufacturer; and

- (c) the motor vehicle to which the sun-visor assembly was originally fitted was first registered in:
 - (i) the United States of America on or after 1 January 1981; or
 - (ii) Europe or the United Kingdom on or after 1 January 1974; or
 - (iii) Japan on or after 1 January 1983; or
 - (iv) Australia on or after 1 January 1988.

2.4(12) A sun-visor assembly fitted to a low volume vehicle may be sourced elsewhere provided that any mounting brackets and fittings which incorporate hard edges or protrusions have a radius of no less than 3 mm; and:

- (a) in the case of a low volume vehicle which has a fixed roof, be made of a deformable material and have all corners and edges with a radius of no less than 3 mm; or
- (b) in the case of a low volume vehicle which does not have a fixed roof, either:
 - (i) be made of a deformable material and have all corners and edges with a radius of no less than 3 mm; or
 - (ii) be made from a non-shattering transparent material of no less than 3 mm thickness, with no sharp edges present.

Door panels and armrests

2.4(13) No door panels or other interior trim may be removed from the interior of a low volume vehicle exposing any surfaces or fittings that could increase the risk of injury to occupants in the event of contact, unless the substitution of other protective paneling occurs.

2.4(14) An armrest fitted to the interior of a low volume vehicle must:

- (a) have corners and edges with a radius of no less than 3 mm; or
- (b) be covered with an energy absorbing material of no less than 5 mm thickness.

Door and window handles

2.4(15) A handle fitted to the interior of a low volume vehicle, such as a door opener or window winder, must:

- (a) be of a design that will deflect contact; and
- (b) have a radius on all edges which face the occupant cell; and
- (c) not protrude from the door panel surface by any more than 35 mm.

Seats and seat mounts

- 2.4(16) A seat and seat mounting fitted to a low volume vehicle:
- (a) must not have sharp edges or protrusions which are likely to increase the risk of injury to occupants in the event of contact; and
 - (b) in the case of a vehicle with rear seating positions provided, must have all edges and corners of the rearward-facing sections of the front seats with a radius of no less than 5 mm.
- 2.4(17) A head restraint fitted to a seat within the A-Zone of a low volume vehicle occupant cell must meet any applicable requirements specified in *LVVTA Low Volume Vehicle Standard 185-40 (Head Restraints)*.

Rear View Mirrors

- 2.4(18) A rear view mirror fitted within the B-Zone of a low volume vehicle occupant cell must meet any applicable requirements specified in *LVVTA Low Volume Vehicle Standard 200-30 (Rear View Mirrors)*.

Windscreens

- 2.4(19) A low volume vehicle that does not have a fixed roof, and has a predominantly vertical wind deflector which terminates below a point that would enable it to be used for the driver's forward vision, must be fitted with an approved lap and diagonal seatbelt for each front seating position.

2.5 Requirements for C-zone interior fittings, controls, and surfaces

- 2.5(1) All interior fittings, controls, and surfaces within the C-Zone of a low volume vehicle occupant cell must be designed so that the likelihood of injury to occupants is minimised.

Section 3 Exclusions to this standard

3.1 Original equipment exclusions

3.1(1) Areas of a modified production low volume vehicle's surfaces or structure, which are as originally provided by the vehicle manufacturer, are not required to comply with 2.3 and 2.4.

3.1(2) Standard or optional equipment fitted by or available from the original vehicle manufacturer, when fitted to a modified production low volume vehicle for which that equipment is designed, is not required to comply with 2.3 and 2.4.

3.2 Disability equipment exclusions

3.2(1) A modification or adaptation specifically designed and carried out in order to enable the operation of a motor vehicle by a person with a disability is not required to comply with 2.3(8) or 2.4(5).

3.3 LVVTA-approved authority card exclusions

3.3(1) A low volume vehicle, for which a valid *Low Volume Vehicle Authority Card* is issued by an LVVTA-approved organisation, that specifies 'Interior Impact', is not required to comply with 2.3, 2.4, or 2.5.

NOTE 1: A low volume vehicle authority card is only available for a vehicle that is modified for a particular purpose, in order to meet the specific needs of the person nominated on the authority card. Examples of this are vehicles that are temporarily modified for a person with a disability, or to meet motor-sporting regulations.

NOTE 2: The operator of a vehicle for which a LVVTA-approved authority card is issued, must, when requested by an enforcement officer or LVV Certifier, produce the authority card for that vehicle.

Section 4 Vehicles not required to be certified to this standard

4.1 Vehicles not covered by this standard

4.1(1) A light vehicle is not required to be certified to this low volume vehicle standard, if the vehicle is modified for the purposes of law enforcement or the provision of emergency services.

4.1(2) A light vehicle is not required to be certified to this low volume vehicle standard, if the vehicle is identified as having been modified by a second-stage vehicle manufacturer, and complies with an approved overseas standard that is listed in Annex 6 of the *Low Volume Vehicle Code*.

4.2 Vehicles that pre-date legal requirements

4.2(1) A light vehicle is not required to be certified to this standard, if the vehicle was either:

- (a) modified before 1 January 1992 in such a way that any interior fittings, controls, or surfaces may, directly or indirectly, be affected, and the interior fittings, controls, or surfaces fitted to the vehicle is the same as that fitted at the time of the vehicle’s modification; or
- (b) scratch-built before 1 January 1992, and the interior fittings, controls, or surfaces is the same as that fitted at the time of the vehicle’s construction.

4.3

Modifications that do not require certification

4.3(1)

A vehicle is not required to be certified to the *Low Volume Vehicle Code*, provided that the safe performance of the vehicle is not compromised, where the only modification to the vehicle is the fitting of any one or more of the following items:

- (a) a modified accelerator pedal; and
- (b) roof and door lining replacement; and
- (c) seat carriers; and

provided that no substantial modifications have been made to the interior panel area, other than provision for the fitting of a seat belt. This is not

UPDATE

Due to recent updates to the NZTA VIRM Threshold please visit https://www.lvvta.org.nz/documents/supplementary_information/LVVTA_LVV_Cert_Threshold.pdf to confirm which modifications do not require LVV Certification

- (f) disability adapted controls; and
- (i) the hand control operates the accelerator pedal; and
- (ii) the presence of the hand control system does not increase the risk of injury to occupants in the event of a crash.

and

- (g) additional accelerator pedal fitted to the left side of the brake pedal, provided that:
 - (i) the vehicle is equipped with automatic transmission; and
 - (ii) the additional accelerator pedal does not affect the operation of the brake pedal or any other part of the brake system; and

(iii) the vehicle retains the original equipment accelerator pedal to the right of the brake pedal; and

(iv) adequate clearance is maintained between all pedals; and

(v) the accelerator system is protected from accidental application, eg by shielding the right hand accelerator pedal or ability to fold either accelerator pedal when not in use; and

...sibly visible to the driver warning that ... by the vehicle manufacturer;

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the s...

(i) stereo equipment and speakers

(i) no upper seatbelt anchorage is attached to a support bracket; and

(ii) in the case of a top tether point for a child seat attached to the rear shelf, the top tether point is not located within 150 mm of a modification to a rear parcel shelf; and

(iii) the removal of any material from the rear shelf is minimal and is unlikely to have weakened the vehicle structure to which a seatbelt anchorage is attached

and

(j) stereo equipment and speakers (if fitted to other than the rear shelf), provided that:

(i) no structural material has been removed from within 300 mm of a seatbelt anchorage; and

(ii) any material removed is minimal and is unlikely to have weakened the vehicle structure (including a seatbelt anchorage structure);

and

(k) accessory steering wheels provided that:

(i) the steering wheel is a non-OE item of a reputable brand or an OE item from another vehicle; and

(ii) the steering wheel is a direct substitute without shaft modification; and

the steering wheel does not obscure visibility of the speedometer;

airbag installed as OE; and

frontal impact

UPDATE
Due to recent updates to the NZTA VIRM Threshold please visit https://www.lvvta.org.nz/documents/supplementary_information/LVVTA_LVV_Cert_Threshold.pdf to confirm which modifications do not require LVV Certification

- NOTE: The following protection standards apply:
- class MA motor vehicles
 - class MA motor vehicles that were registered in New Zealand on or after 1 April 2002; and
 - class MB or MC motor vehicles manufactured from 1 October 2002

and

(l) roll-bar or roll-cage structures (roll protection or cosmetic), provided that:

(i) each seat is fitted with an effective head restraint; and

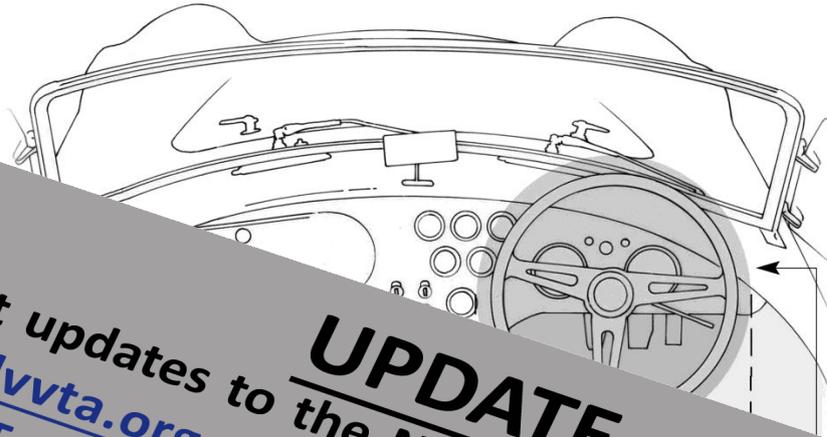
(ii) the bars are positioned:

- behind, following a plane extending upward, parallel to the back of the backrest on the rear-most seat, and
- in such a way that the head restraint would provide protection from head contact with any bar section during a crash.

and

(m) additional and substituted interior items such as instruments, switches, cell-phone installations, navigation equipment, or an OEM interior item from another vehicle, provided that the items are positioned either within:

(i) the area forward of the steering control, defined as a forward horizontal projection of an area 400 mm across, circumscribing the upper-most end of the steering column (see diagram 4.3(d)(i)); or



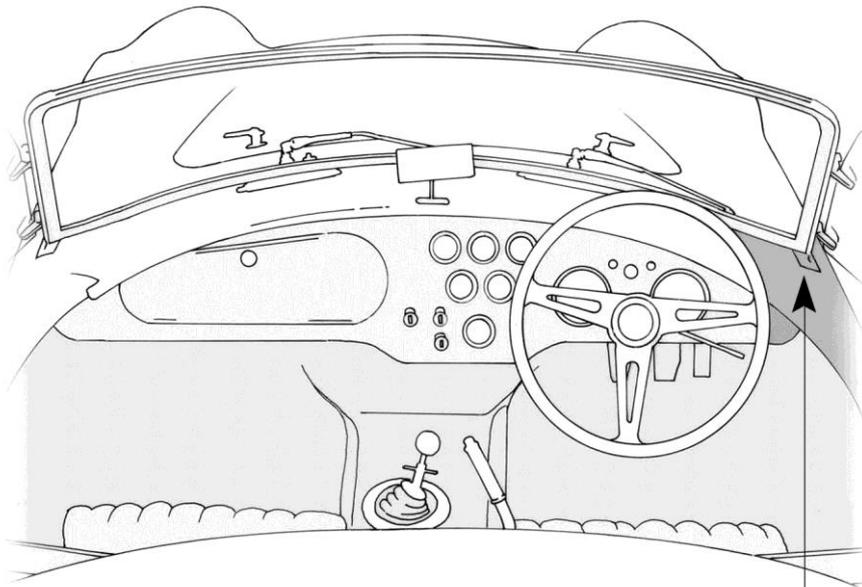
UPDATE

Due to recent updates to the NZTA VIRM Threshold please visit https://www.lvvta.org.nz/documents/supplementary_information/LVVTA_LVV_Cert_Threshold.pdf to confirm which modifications do not require LVV Certification

'C-Zone' area is shaded

Diagram 4.3(d)(i) Steering control area

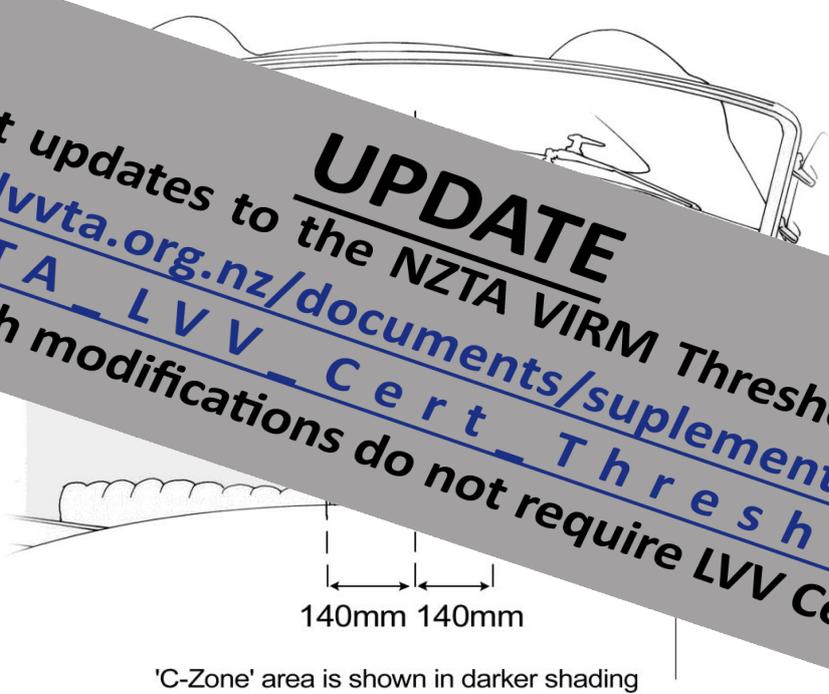
- (ii) any part of the dashboard and instrument panel or edge of the area specified in 4.3(1)(d)(i) and the nearest interior pillar or sidewall area (see diagram 4.3(d)(ii)); or



'C-Zone' area is shown in shade

Diagram 4.3(d)(ii) Steering control to nearest pillar or sidewall area

- (iii) provided that no front center seating position exists, the width of the dashboard and center console surface area, which may not exceed 140 mm on either side of the longitudinal centerline of the vehicle (see diagram 4.3(d)(iii)).



'C-Zone' area is shown in darker shading

Diagram 4.3(d)(iii) Dashboard to center console area

UPDATE
 Due to recent updates to the NZTA VIRM Threshold please visit https://www.lvvta.org.nz/documents/supplementary_information/LVVTA_LVV_Cert_Threshold.pdf to confirm which modifications do not require LVV Certification

Section 5 Terms and definitions within this standard

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|-------------------|---|
| Accessory | means equipment or components produced for use with or on motor vehicles to achieve a particular look or function that was otherwise unachievable by the vehicle in question in the form provided by the original vehicle manufacturer. |
| Cant rail | means the interior roof structure sections in a vehicle with a fixed roof which span the length of a vehicle directly above the side windows. |
| Doors | means those doors used by the driver and occupants for normal entry and exit to and from a motor vehicle. |
| Door panel | means a covering positioned on the side of the door facing the occupant cell, to protect the vehicle occupants from hazardous edges and fittings, and to conceal and protect door and window opening mechanisms. |

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| Energy-absorbing material | means a deformable high-density material that provides impact protection to vehicle occupants by absorbing energy, and preventing direct contact with any solid surfaces or objects positioned beneath the material in the event of contact. (Energy-absorbing material should not be able to be compressed by more than 30% under firm thumb pressure.) |
| Glove box | means a compartment located within the occupant cell used for the containment of loose items being carried or stored within the vehicle. |
| Header rail | means an interior roof structure section in a vehicle with a fixed roof, which spans the width of a vehicle directly above the windscreen. |
| Head restraint | means an addition or continuation to a seat assembly which is designed to support the neck and head of the seat occupant in a collision. |
| Head-sphere | means a circular object designed and constructed to replicate a human head for the purpose of identifying items which are placed in a hazardous position within the occupant cell. |
| H-point | means a reference point which indicates the hip position of an occupant in a normal seated position. |
| LVVTA body frame | means a frame which provides a means of identifying the h-point, for the purpose of serving as a reference point for various critical safety-related measurements. |
| Motor-sport | means recreational and competition activities carried out in association with motor vehicles. 'Motor-sport' and 'motor-sporting' have corresponding meanings. |
| Occupant cell | means the area within a vehicle designed by the vehicle manufacturer for the seating of passengers whilst the vehicle is in operation. |
| Parcel tray | means a tray inside a motor vehicle positioned below the dashboard surface, which is intended for the storage of parcels and items. |
| Period equipment | means optional or aftermarket equipment produced for motor vehicles either at the time of a vehicle's production, or reproduced at a later date in order to facilitate certain aesthetic or operational functions in relation to motor vehicle use. |
| Pillar | means the part of a vehicle structure which is positioned vertically extending from the floor to support the upper body or roof structure. 'Pillar' and 'side-pillar' has a corresponding meaning. |
| Roll-bars | means a transverse bar, or bars, positioned behind the front seating positions, which is attached and braced forward or rearward to the main structure of the vehicle. |

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| Roll-cages | means a roll-bar with additional members extending forward past the front seating positions to another roll-bar positioned around the top of the windscreen area. |
| Seating position | means a seat or part of a seat that is of a suitable size and shape for one person. |
| SFI | means the Snell Foundation Incorporated, which is an organisation involved in the setting of safety standards in relation to motor sport. |
| Steering column | means the mechanism in a motor vehicle by which steering control applied at the steering wheel is mechanically transferred to the steering box or steering rack and pinion assembly. |
| Steering wheel spinner | means an item which attaches to the steering wheel, to assist in the operation of turning the steering wheel. |
| Sun-visor | means an item positioned forward of the driver, or of the driver and opposite side front seat passenger, provided to shield the sun from the eyes of the driver and passenger. |
| Windscreen | means the glazed area directly forward of the driver and the front seat passengers, but does not include wind deflectors which are not used by the driver for forward vision. |
| Wind deflector | means a fixture or section of bodywork positioned below the driver's normal forward field of view, that is intended to deflect air over the occupant cell. |

NOTE: The terms and definitions found in *section 5* are limited to those terms and definitions that are unique to this low volume vehicle standard, and are not necessarily contained within the terms and definitions section of the *Low Volume Vehicle Code*.