

Low Volume Vehicle Technical Association Incorporated

Low Volume Vehicle Standard

100-30(02)

(External Projections)

This Low Volume Vehicle Standard corresponds with: Land Transport Rule 32008 (External Projections)

2nd Amendment – effective from: 25 October 2016

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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4				
5				

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
• LVVTA News June-September 2013 Issue 47	Page 6 Bonnet (Engine Hood) Removal
• LVV Information Sheet # 04-2005	LVV Certification of Weed-spraying Vehicles
• NZ Car Construction Manual	Chapter 13 Body Modification & Construction
•	
<p>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</p> <p>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</p>	

Contents

Purpose of this standard		Page 4
Section 1	Scope and application of this standard	4
1.1	Scope of this standard	4
1.2	Application of this standard	4
Section 2	Technical requirements of this standard	5
2.1	General safety requirements	5
2.2	General external projection requirements	5
2.3	Technical requirements for external projections	6
2.4	Field of vision requirements	7
2.5	Other requirements for external projections	8
Section 3	Exclusions to this standard	9
3.1	Original equipment exclusions	9
Section 4	Vehicles not required to be certified to this standard	9
4.1	Vehicles not covered by this standard	9
4.2	Vehicles that pre-date legal requirements	10
4.3	Modifications that do not require certification	10
Section 5	Terms and definitions within this standard	12

External Projections

(100-30[02])

Purpose of this standard

The purpose of this low volume vehicle standard is to specify requirements for external projections on low volume vehicles in order to minimise the likelihood of injury to pedestrians or other road users in the event of an impact.

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 March 1998 in such a way that any external projections may, directly or indirectly, be affected; or
- (b) scratch-built on or after 1 March 1998.

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 (3 April 2000), 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.

2.2 General external projection requirements

2.2(1) A low volume vehicle, except for one specified in section 3, must comply with the following general requirements:

- (a) an ornamental object or fitting must not protrude from a motor vehicle if the object or fitting is likely to injure a person; and
- (b) a protruding object or fitting that has a functional purpose must, if installed and operated on a motor vehicle that is operated on a road, be such that the risk of the object or fitting causing injury to a person is minimised; and
- (c) a protruding object or fitting must not adversely affect driver vision or driver control; and
- (d) components of a motor vehicle, including damaged, and corroded body panels must be such that their risk of hooking any vehicle, or hooking or grazing a person, is minimised.

NOTE: The requirements specified in 2.2(1) are the applicable general safety requirements from 2.2(2) of *Land Transport Rule 32008/1* which are required as part of this low volume vehicle standard, are reproduced here in the interest of convenience.

2.3 Technical requirements for external projections

All external projections

2.3(1) All external projections fitted to a low volume vehicle, except those specified in *section 3*, must comply with the applicable requirements in 2.3 and 2.4.

2.3(2) All contactable exterior sheet-metal edges on a low volume vehicle must fold back by not less than 90 degrees.

2.3(3) Any contactable exterior cosmetic or aerodynamic attachments fitted to a low volume vehicle must not extend laterally beyond the widest part of the vehicle body.

Non-functional external projections

2.3(4) A protruding external object or fitting that does not have a functional purpose may not be fitted to a low volume vehicle if it is likely to increase the risk of injury to any person, including the following three requirements for non-functional items:

- (a) an ornamental hood emblem must be designed and attached in such a way that it will fold back or break off in the event of contact, without leaving any sharp edges; and
- (b) a protruding bumper bar must have a radius on all edges and corners of no less than 3 mm; and
- (c) a wheel hub or centre which extends beyond the external line of the body of the vehicle must have a radius on any exposed edges of no less than 3 mm.

Functional external projections

2.3(5) A protruding external object or fitting that has a functional purpose, not including an item on the underside of the vehicle, may not be fitted to a low volume vehicle unless its design, construction, condition, and manner in which it is affixed to the vehicle is such that the risk of causing injury to any person is minimised, including the following five requirements for functional items:

- (a) a free-standing lamp must protrude no further from the vehicle body than is necessary for its effective operation; and
- (b) an item such as a door handle, engine hood latch, and fuel filler cap must protrude no further from the vehicle body than is necessary for its effective operation; and
- (c) an engine hood scoop or engine component protruding beyond the original external line of the engine hood or surrounding body panels which are contactable by a 165 mm head-sphere, must have a radius on all such exposed contactable edges of no less than 3 mm; and
- (d) an exposed moving mechanical object protruding beyond the original external line of the engine hood or surrounding body panels that is readily contactable from the vehicle exterior, including drive pulleys and belts must be protected by a guard or cover, and the guard or cover must have a radius on all edges and corners of no less than 3 mm; and
- (e) external exhaust systems which extend beyond the outer longitudinal extremity of the vehicle or the outer sidewall of the tyres, must:
 - (i) have a radius of no less than 3 mm on any sections facing toward the front of the vehicle; and
 - (ii) have any sections of exposed exhaust contactable from the front of the vehicle or adjacent to points of occupant entry and exit adequately heat-shielded.

2.4 Field of vision requirements

All vehicles

- 2.4(1) Cosmetic modifications must not be made to any windscreen fitted to a low volume vehicle, which effectively reduces the total area of visibility of the windscreen, unless the modifications are permitted by section 5-1 of the *Vehicle Inspection Requirements Manual (VIRM)* of the New Zealand Transport Agency.
- 2.4(2) The design and construction of a low volume vehicle must:
 - (a) provide to the driver a clear view to the front and both sides of the vehicle from the normal driving position; and

(b) incorporate front seat positioning that provides to the driver as far as practicable the best available view to the front and both sides of the vehicle; and

(c) in the case where a roll-bar or roll-cage is fitted to the vehicle, be such that the bars do not restrict the driver's forward and side vision.

Fixed-roof vehicles

2.4(3)

A low volume vehicle which has a fixed roof must not have any components or fittings forward of the firewall which protrude above a straight line from the centre-point of the windscreen measured both vertically and horizontally to:

- (a) in the case of protrusions 250 mm or less in width, a point at ground level 15 metres forward of the front of the vehicle; or
- (b) in the case of protrusions between 250 mm and 400 mm in width, a point at ground level 12 metres forward of the front of the vehicle; or
- (c) in the case of protrusions 400 mm or more in width, a point at ground level 8 metres forward of the front of the vehicle.

Open vehicles

2.4(4)

A low volume vehicle which does not have a fixed roof must not have any components or fittings forward of the firewall which protrude above a straight line measured from a point on the vehicle's longitudinal centre-line 730 mm above and 270 mm forward of the junction of the uncompressed seat base and back, with the seat in its rear-most and lowest position, to:

- (a) in the case of protrusions 250 mm or less in width, a point at ground level 15 metres forward of the front of the vehicle; or
- (b) in the case of protrusions between 250 mm and 400 mm in width, a point at ground level 12 metres forward of the front of the vehicle; or
- (c) in the case of protrusions 400 mm or more in width, a point at ground level 8 metres forward of the front of the vehicle.

2.5

Other requirements for external projections

Compliance with other standards

2.5(1)

A low volume vehicle required to comply with this standard must also comply with the relevant requirements of:

- (a) Chapters 13 (Body Modification & Construction) and 15 (Glazing & Vision) of the *New Zealand Car Construction Manual*; and
- (b) *Low Volume Vehicle Standard* 125-00 (Lighting Equipment); and
- (c) *Low Volume Vehicle Standard* 155-30 (Frontal Impact); and
- (d) *Low Volume Vehicle Standard* 155-40 (Interior Impact); and
- (e) *Low Volume Vehicle Standard* 200-30 (Rear View Mirrors).

Section 3 Exclusions to this standard

3.1 Original equipment exclusions

3.1(1) A modified production low volume vehicle originally manufactured prior to 1 March 1998 is not required to comply with 2.3(4) if fitted with either:

- (a) the original vehicle manufacturer's standard or optional equipment, or
- (b) authentic reproductions of the original vehicle manufacturer's standard or optional equipment which:
 - (i) meet the original vehicle manufacturer's specifications; and
 - (ii) are within the original vehicle manufacturer's operating limits.

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 low volume vehicle standard, if the vehicle was:

- (a) modified before 1 March 1998 in such a way that any external projections may, directly or indirectly, be affected, and the external equipment fitted to the vehicle is the same as that fitted at the time of the vehicle's modification; or
- (b) scratch-built before 1 March 1998, and the external equipment fitted to the vehicle 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, and where the only modification to the vehicle is the fitting of or modification to any one or more of the following items:

- (a) a roof-rack or trunk-rack; or
- (b) cosmetic body kits and components (including utility canopies and plastic bumper skins) provided that:
 - (i) the fitting system does not weaken the body structure; and
 - (ii) No frontal impact components have been removed where the vehicle is required to comply with a frontal impact occupant protection standard; and
 - (iii) the kit or components do not present any forward-facing external projections; and
 - (iv) the performance of any lamp is not affected as a result of the kit or components;

or

- (c) an auxiliary winch, provided that the winch either:
 - (i) does not protrude forward of the front face of the bumper; or

(ii) does project forward of the bumper line, but is fitted with 'pedestrian friendly' shrouds to reduce trapping risk and present larger forward facing surfaces;

or

(d) side racks for glass or other sheet materials, provided that;

(i) there is no doubt as to the rack's load carrying capacity; and

(ii) no forward facing pedestrian traps exist; and

(iii) the rack is designed and protected so that sharp or dangerous cargo cannot face directly forward projecting beyond the outside of the body;

or

(e) aerials; or

(f) a bumper bar (removal and change) provided that the vehicle is not required to comply with a frontal impact occupant protection standard;
or

(g) engine hood emblems or hood pins; or

(h) tow bars; or

(i) roof mounted wheelchair winches; or

(j) side steps other than retractable steps on a Passenger Service Vehicle; or

(k) auxiliary bars (including bull bars, nudge bars, and external roll cages) provided that the vehicle is not required to comply with a frontal impact occupant protection standard, or the vehicle is required to comply with a frontal impact occupant protection standard and the auxiliary bar is a vehicle manufacturer-supplied component for that vehicle, or the auxiliary bar has been certified by the auxiliary bar manufacturer as frontal impact compliant (as may be indicated by a label); or

(l) additional or substituted rear view mirrors.

Section 5 Terms and definitions within this standard

mm is an abbreviation for millimeters.

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*.
