Low Volume Vehicle Standard

205-00(03)
Wheels & Tyres

3rd Amendment | Effective from 1 December 2021
## Contents

**LVV Standard 205-00 Contents:**

<table>
<thead>
<tr>
<th>Approval</th>
<th>Page 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amendments</td>
<td>2</td>
</tr>
<tr>
<td>Associated information</td>
<td>3</td>
</tr>
<tr>
<td>Purpose of this standard</td>
<td>4</td>
</tr>
<tr>
<td>Section 1</td>
<td>Scope and application of this standard</td>
</tr>
<tr>
<td>1.1</td>
<td>Scope of this standard</td>
</tr>
<tr>
<td>1.2</td>
<td>Application of this standard</td>
</tr>
<tr>
<td>Section 2</td>
<td>Technical requirements of this standard</td>
</tr>
<tr>
<td>2.1</td>
<td>General safety requirements</td>
</tr>
<tr>
<td>2.2</td>
<td>Overarching technical requirements</td>
</tr>
<tr>
<td>2.3</td>
<td>Associated technical requirements</td>
</tr>
<tr>
<td>Section 3</td>
<td>Vehicles not required to be certified to this standard</td>
</tr>
<tr>
<td>3.1</td>
<td>Vehicles that do not require certification</td>
</tr>
<tr>
<td>3.2</td>
<td>Modifications that do not require certification</td>
</tr>
</tbody>
</table>

## Approval

**LVV Standard 205-00 Approval:**

Signed in accordance with clause 1.3(5) of the Low Volume Vehicle Code, on ................................................... by:

on behalf of New Zealand Transport Agency:  
…………………………………………………………………………  
on behalf of Low Volume Vehicle Technical Association:  
……………………………………………………………………………………

## Amendments

**LVV Standard 205-00 Amendment Record:**

<table>
<thead>
<tr>
<th>Detail of amendments:</th>
<th>Amendment #:</th>
<th>Issue date:</th>
<th>Effect date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial issue – original version</td>
<td>205-00(00)</td>
<td>1 September 2003</td>
<td>1 September 2003</td>
</tr>
<tr>
<td>1st Amendment</td>
<td>205-00(01)</td>
<td>1 July 2016</td>
<td>1 July 2016</td>
</tr>
<tr>
<td>2nd Amendment</td>
<td>205-00(02)</td>
<td>25 October 2016</td>
<td>25 October 2016</td>
</tr>
<tr>
<td>3rd Amendment</td>
<td>205-00(03)</td>
<td>1 November 2021</td>
<td>1 December 2021</td>
</tr>
</tbody>
</table>

**NOTE 1:** Text which is high-lit in grey shows amendments that have been made subsequent to the document’s previous version, and a grey vertical stroke to the left of the text denotes new or changed information which is important and needs to be understood.

**NOTE 2:** Printed copies of LVV Standards may become out of date, and should not be relied upon without ensuring that the version is current – visit [www.lvvta.org.nz](http://www.lvvta.org.nz) to check that this LVV Standard is the latest version before relying on the enclosed information.
# Associated information

## Publisher & Owner:

This Low Volume Vehicle Standard is published and owned by the Low Volume Vehicle Technical Association Incorporated (LVVTA). LVVTA is an incorporated society which was established in 1992, that represents a group of specialist automotive organisations (in turn representing approximately 150,000 members) 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 New Zealand 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 several decades can be of benefit to members of the New Zealand public who also wish to build or modify light motor vehicles.

LVVTA’s contact details are below:

- **Postal address:** P. O. Box 50-600, Porirua 5024, Wellington, New Zealand
- **Website:** www.lvvta.org.nz
- **E-mail address:** info@lvvta.org.nz

## 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](http://www.lvvta.org.nz)

## Disclaimer:

The author and publisher have made all reasonable efforts to provide sound and correct advice, based on the historical knowledge and best practice experiences of all parties involved in the development and production of this manual. However, no responsibility or liability is accepted by the author or the publisher for any error or omission, or any loss suffered by any person relying directly or indirectly on this manual. Any person who builds or modifies a motor vehicle accepts that there may be some associated risks, and does so in the full knowledge of this, and accepts full responsibility for their own actions.

## Legal status:

This Low Volume Vehicle Standard is incorporated by reference within *Land Transport Compliance Rule 35001*, and technically corresponds with *Land Transport Rule 32013 (Tyres and Wheels)*.

## Copyright:

The content of this document remains the property of the Low Volume Vehicle Technical Association (Inc.), and no part of it may be reproduced without the prior written consent of the copyright holder.

## Credits:

The LVVTA acknowledges the following persons and organisations for their significant contribution toward the development of this Low Volume Vehicle Standard:

- **Technical content:** LVVTA Technical Staff
- **Document development, cover artwork:** Tony Johnson
- **Cover CAD diagram:** Graham Walls
Wheels & Tyres

(205-00[03])

Purpose of this standard

The purpose of this low volume vehicle standard is to specify requirements for aftermarket, one-off, or modified wheels, wheel-related equipment, and non-original fitment tyres, that are fitted to light vehicles, in order to optimise levels of safety performance during all normal and emergency driving conditions.

This standard sets out:

• which vehicles are required to meet this standard; and
• how this standard is applied to those vehicles; and
• the technical requirements which must be met by vehicles required to comply with this standard.

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:

(a) are modified either:

(i) on or after 1 March 1999 in such a way that the vehicle’s safe operation may, directly or indirectly, be affected as a result of a wheel or tyre installation or modification; or

(ii) before 1 March 1999 in such a way that the vehicle’s safe operation may, directly or indirectly, be affected as a result of a wheel or tyre installation or modification, and have not been continuously registered since that date;

or

(b) are scratch-built either:

(i) on or after 1 March 1999; or

(ii) before 1 March 1999 and have not been continuously registered since that date.

NOTE: For the avoidance of doubt, 1.1(1) specifies that a low volume vehicle (which has been scratch-built, or modified in such a way that it’s safe operation may, directly or indirectly, be affected as a result of a wheel or tyre installation or modification) is not required to be certified to this standard only if the vehicle:

• was scratch-built or modified prior to 1 March 1999; and
• has been issued with a valid Modification Declaration Certificate; and
• has been continuously registered since 1 March 1999; and
• has not been subsequently modified.
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 or LB; 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 scratch-built or modified as in 1.1(1), becomes a low volume vehicle, and must either:

(a) in the case of a vehicle which was scratch-built or modified before 1 March 1999 and has not been continuously registered, or a vehicle which was scratch-built or modified between 1 March 1999 and 1 September 2003:

(i) be certified in accordance with the procedures specified in chapter 2 of the Low Volume Vehicle Code; and

(ii) comply with the General Safety Requirements contained in 2.1 of this standard; and

(iii) comply with those technical requirements referred to in 2.2 and 2.3 of this standard, as determined to be appropriate by a Low Volume Vehicle Certifier;

or

(b) in the case of a vehicle which was scratch-built or modified after 1 September 2003:

(i) be certified in accordance with the procedures specified in chapter 2 of the Low Volume Vehicle Code; and

(ii) comply with the General Safety Requirements contained in 2.1 of this standard, and all applicable technical requirements referred to in 2.2 and 2.3 of this standard.

NOTE 1: The date of 1 September 2003 specified in 1.2(1)(a) and 1.2(1)(b) is the implementation date of LVV Standard 205-00 (Wheels & Tyres) (original version), which introduced specific technical requirements which must be met.

NOTE 2: In the case of a low volume vehicle specified in 1.2(1)(a), an LVV Certifier must apply the applicable technical requirements referred to in 2.2 and 2.3 of this standard as a guideline upon which to base their discretionary judgement on the safety of the vehicle, taking into account the modification or construction date 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) A tyre must be of good quality and construction, fit for its purpose and maintained in a safe condition.

2.1(3) A tyre must not have worn, damaged or visible cords apparent by external examination.

2.1(4) If fitted, a unidirectional tyre must be fitted to a wheel position corresponding to its direction of rotation.

2.1(5) A tyre on a motor vehicle must have a tread pattern around the entire circumference of the tyre of not less than 1.5 mm (1/16”) in depth within all principal grooves that contain moulded tread depth indicators, or for tyres manufactured without moulded tread depth indicators, across at least three-quarters of the width of the tread and around the entire circumference of the tyre.

NOTE: The requirements specified in 2.1(2) to 2.1(5) are the applicable general safety requirements from Land Transport Rule 32013 Tyres and Wheels 2001, which are required as part of this low volume vehicle standard and are reproduced here in the interest of convenience.

2.2 Overarching technical requirements

2.2(1) Wheels fitted to a low volume vehicle must be suitable for their intended application, taking into account their size, design, and potential effects on the vehicle’s suspension and steering geometry.

2.2(2) The modification or manufacturing of wheels fitted to a low volume vehicle must incorporate good engineering principles and practice.

2.2(3) Wheels fitted to a low volume vehicle must be located and attached in such a way that the wheels remain securely fitted to the vehicle during all normal and emergency operation.

2.2(4) Any ancillary equipment associated with the attachment of wheels and tyres fitted to a low volume vehicle, such as spacers and adaptors, must be correctly designed and fitted.

2.2(5) Tyres fitted to a low volume vehicle must be suitable for their intended application, and must meet all applicable standards.

2.2(6) In order to demonstrate compliance with paragraphs 2.2(1) to 2.2(5), a low volume vehicle must comply with all relevant requirements specified in Chapter 12 Wheels & Tyres of the LVVTA New Zealand Car Construction Manual.
2.3 Associated technical requirements

2.3(1) A low volume vehicle that is required to comply with this standard must, where applicable, also comply with LVVTA Low Volume Vehicle Standard 35-40 (Braking Systems).

NOTE 1: All documents referred to in 2.3(1) can be accessed from www.lvvta.org.nz and are free of charge.

NOTE 2: Printed copies of LVV documents may become out of date, and should not be relied upon without ensuring that the version is current – visit www.lvvta.org.nz to check that the associated technical requirements referred to above are contained in the latest versions of the documents.

Section 3 Vehicles not required to be certified to this standard

3.1 Vehicles that do not require certification

3.1(1) A light vehicle is not required to be certified to this low volume vehicle standard, if the vehicle is either:

(a) modified for the purposes of law enforcement or the provision of emergency services; or

(b) 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, and is not subsequently modified.

3.2 Modifications that do not require certification

3.2(1) A modification to a vehicle is not required to be certified to the Low Volume Vehicle Code if the modification:

(a) has not compromised the safe performance of the vehicle; and

(b) is listed as a modification which does not require low volume vehicle certification, within either:

(i) the LVVTA Modification Threshold Schedule; or

(ii) a relevant Modification Table in the Vehicle Inspection Requirements Manual of the New Zealand Transport Agency.