

Vehicle Standards Bulletin 14

**NATIONAL CODE OF PRACTICE
for
LIGHT VEHICLE CONSTRUCTION
and
MODIFICATION**

INTRODUCTION

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1 BACKGROUND

1.1 GENERAL

This national code of practice titled, *National Code of Practice for Light Vehicle Construction and Modification* (VSB 14) outlines the minimum design, construction, installation and performance requirements for modifications to *light vehicles*¹, for building Individually Constructed Vehicles (ICVs) and for the *certification*² of certain imported vehicles. Compliance with VSB 14 requirements will help ensure that work undertaken satisfies the regulatory requirements of jurisdictions.

All State and Territory governments in Australia have regulations that govern vehicle modifications. The regulations require modified vehicles to be fit for use on roads and road related areas by maintaining compliance with all applicable vehicle standards, including the relevant Australian Design Rules (ADRs) and to not increase the risk of injury to the vehicle's occupants and other road users.

For the purpose of VSB 14, a light vehicle is defined as a motor vehicle with a Gross Vehicle Mass of 4.5 tonnes or less.

The requirements for some light vehicle modifications such as chassis extensions and installation of wheelchair loaders are contained in Vehicle Standards Bulletin N° 6, *Heavy Vehicle Modifications – National Code of Practice* (VSB 6).

To simplify the modification approval process sub-section 3.14 provides a list of modifications that may, in general be performed without reference to a Registration Authority, except where there is a change in the vehicle's description on the register - e.g. a change in engine number or vehicle colour. (Verification of the status of such modifications should be obtained from the local Registration Authority). These modifications are not dealt with any further in VSB 14.

VSB 14 also contains requirements for modifications that may be carried out without the requirement for certification and these are detailed in each Section of VSB 14 under the heading – *Modifications without Certification*. While these modifications do not require certification, the difference between these modifications and those listed in sub-section 3.14, is the level of complexity. To this end, the relevant Sections of VSB 14 provide advice on how these modifications should be performed.

One of the principal purposes of VSB 14 is to provide detailed requirements for modifications, conversions and construction that require certification and these are detailed in each relevant Section of VSB 14 under the heading titled *Certified Modifications*.

The administrative requirements for certification of light vehicle modification or construction are the responsibility of State and Territory jurisdictions and are separate from VSB 14.

1.2 VEHICLE CERTIFICATION/MODIFICATION SCHEMES AND SIGNATORIES

Most jurisdictions operate a scheme whereby persons, usually called *Engineering Signatories* or simply *Signatories*, are accredited to, or registered with, them for the purposes of inspecting

¹ As defined in sub-section 2.2

² As defined in sub-section 2.2

modified vehicles to determine whether the vehicle complies with the vehicle standards, including the applicable ADRs, and does not represent an increased risk to road safety. For vehicles that meet these criteria, the *Signatories* can issue a certificate for the purposes of registering the vehicle with the registration authority, subject to the Registration Authority's business rules. In addition, *Signatories* can provide advice, and their advice on more complex modifications should be obtained either before they are commenced or during the process.

Typically, *Signatories* are only entitled to assess and certify vehicles and modifications within their range of qualifications, training and experience, and most jurisdictions have a list of *Signatories* and their allocated areas of work.

Refer to your local Registration Authority in your jurisdiction for more information on *Signatories* and the vehicle certification/modification scheme in operation in your jurisdiction.

2 TERMS AND OTHER REFERENCES

2.1 NOTES, DIAGRAMS, TABLES, HEADINGS AND EXAMPLES

All notes, diagrams, tables, headings and examples included in VSB 14 and in its Guidelines form part of VSB 14 and its Guidelines respectively.

2.2 TERMS AND ABBREVIATIONS

Within the context of VSB 14, the following terms have the following meanings.

<i>May:</i>	Indicates an option.
<i>Should:</i>	Indicates a recommendation.
<i>Must:</i>	Indicates mandatory.
<i>DOM</i>	Date of Manufacture.
<i>DIT</i>	Australian Government Department of Infrastructure and Transport.
<i>VIN</i>	Vehicle Identification Number.
<i>VSB</i>	Vehicle Standards Bulletin.
<i>VSS</i>	Vehicle Safety Standards (The branch of DIT responsible for administering the Motor Vehicle Standards Act).

A *light vehicle* means a motor vehicle with a Gross Vehicle Mass of 4.5 tonnes or less.

An *Individually Constructed Vehicle* (ICV) is a vehicle that is not a *Production Vehicle* or a *Modified Production Vehicle*. (Typically an ICV is a one-off type vehicle built to an individual plan or design and includes; a vehicle constructed to the builder's own unique design, certain kit cars and certain replicas of production vehicles).

Individually Constructed Vehicle DOM means the date of manufacture determined by the appropriate Registration Authority.

Production Vehicle is a vehicle manufactured and marketed in volume for normal road use.

(Production vehicles manufactured on or after 1 January 1969 for use in Australia will normally be fitted with an *Identification Plate* (previously known as a *Compliance Plate*) or a *Personal Import Plate*).

Production Vehicle DOM means the date the vehicle is available in Australia in a condition which will enable an *Identification Plate (Compliance Plate)* issued by the Australian Government, to be lawfully affixed to the vehicle.

(This DOM will continue to apply to a Modified Production Vehicle).

A *street rod* for the purposes of VSB 14 is a vehicle manufactured in accordance with the *National Guidelines for the Construction and Modification of Street Rods in Australia (NSRG)*.

Street rods are extensively modified pre-1949 model light vehicles or are replicas of such vehicles and may be subject to special registration conditions.

Unless otherwise specified, *certification* in VSB 14 means *certification* to the requirements specified within VSB 14 and its Guidelines.

Signatory is a person who is accredited to, or registered with a Registration Authority for assessing and certifying modified vehicles for the purposes of registration.

(For the purposes of VSB 14 and its Guidelines, the term *Signatory* applies to engineers and tradespersons involved in the approval process. Wherever the term *Signatory* is used, it implies that the *Signatory* referred to is one who has the necessary qualifications and experience to assess and sign-off the matter under consideration).

Certificate is one that is issued by a *Signatory* in accordance with the vehicle certification/modification scheme administered by a Registration Authority.

Reference to a Third Edition ADR using the following abbreviation *ADR X/...*, where X is the ADR number, means all published versions of ADR X. E.g. reference to ADR 8/... means ADR 8/00 and ADR 8/01 which are the two published versions of this ADR. Which of these two versions applies is dependent on the vehicle's date of manufacture and ADR category.

Reference to a Second Edition ADR using the following abbreviation *ADR Xx*, where X is the ADR number, means all published versions of ADR X. E.g. reference to ADR 4x means ADR 4, 4A, 4B, 4C and 4D which are the published versions of this ADR. Which of these five versions applies is dependent on the vehicle's date of manufacture and ADR category.

2.3 MODIFIED PRODUCTION VEHICLE CATEGORIES

A *Modified Production Vehicle* is a *production vehicle* that has one of the categories of modification shown in Table 1:

Table 1 Modified Production Vehicle Categories

Modification Category	Description
Minor modifications to Production Vehicles	<p>These are alterations carried out on <i>Production Vehicles</i> and are accepted by jurisdictions without certification.</p> <p>Typical <i>Minor Modifications</i> include the fitting of radios, CD players, wheel trims etc.. A more comprehensive list of minor modifications is included in sub-section 3.14.</p>
Basic modifications to Production Vehicles	<p>These modifications do not require certification provided they have been carried out in accordance with the relevant sub-sections of VSB 14 titled <i>General Requirements</i> and <i>Basic Modifications Without Certification</i>.</p> <p>More information is contained in sub-section 3.15.</p>
Significant modifications to Production Vehicles, which result in, Completed Vehicles that are recognisable as the original vehicle	<p>These modifications have the potential to seriously affect the safety of the <i>Completed Vehicle</i> and may affect the <i>Completed Vehicle's</i> strength, structural integrity and road handling characteristics.</p> <p>The modifications involve major alterations to the vehicle body, engine, drive train or chassis but the vehicle retains its original identity and VIN. The <i>Production Vehicle</i> body, monocoque or chassis may be modified but each major component, whether modified or not, remains recognisable. These modifications require certification.</p>
Extensive modifications to Production Vehicles to the point where the original vehicles are unrecognisable	<p>These modifications have the potential to seriously affect the safety of the <i>Completed Vehicle</i> and may affect the <i>Completed Vehicle's</i> strength, structural integrity and road handling characteristics.</p> <p>The modifications involve major alterations such as the combination of one or more major sections/components of various <i>Production Vehicles</i>. It may be difficult to determine the <i>Completed Vehicle's</i> original identity and VIN or a choice of vehicle identities may result, e.g. in the case of vehicle made up of two vehicles – some jurisdictions will retain the VIN of the chassis while others will retain the VIN of the body. These modifications require certification.</p>

3 USING THE CODE

3.1 NATIONAL RECOGNITION

VSB 14 and VSB 6 are the two principal codes of practice that are nationally recognised in Australia that provide advice for the construction and modification of road vehicles.

Under VSB 14 lie three sets of guidelines that are also nationally recognised:

- *National Guidelines for the Construction and Modification of Street Rods in Australia.* (Except for NSW, *Registration Requirements and Construction Guidelines for Street Rods in NSW*);
- *National Guidelines for the Installation of Electric Drives in Motor Vehicles; and*
- *National Guidelines for Individually Constructed LE1 Motor Tricycles (Other than Goods Vehicles) in Australia.*

Where a jurisdiction is unable to nationally recognise a code or a portion of a code, the individual differences are noted in the appropriate sub-sections or codes.

3.2 CODE DESIGNATION

In VSB 14, the character designation of all codes generally follows that of the equivalent VSB 6 codes, except for the addition of the prefix *L* signifying their application to light vehicles.

VSB 14 is divided into a number of Sections, each of which pertains to a particular category of vehicle modification, which in turn are designated a primary code. Section *LA Engine* for example, has a primary code designation *LA*. Individual codes concerning specific modification types are distinguished by the addition of a numerical identifier. For example, the *Performance Engine Installation* modification code is designated *LA2*.

3.3 CERTIFICATION CODES

VSB 14 employs two types of certification codes, one for the certification of the design of a vehicle or modification, the other for certification of the actual modification or construction. This enables the installation or fabrication of a conversion designed and certified by a *Signatory* (e.g. *Brake System Conversion - Design LG1*) to be certified by another person under the appropriate modification or construction code (e.g. *Brake System Conversion LG2*). Therefore, it is often necessary for a vehicle construction or modification to have a number of certification codes displayed on the modification plate.

3.4 CHECKLISTS

For each design, modification or construction certification code there is at least one checklist. This is to help ensure that the design and all the work are of a satisfactory standard and all relevant factors are considered.

Some modifications will require two checklists – one for the design and another for the modification itself. This approach allows for the design of a modification to be carried out by someone other than the person/organisation who performs the modification. For example an engineer may design a left hand drive conversion under code *LS1* and have it approved by the Registration Authority. This design may then be subsequently used by a number of modifiers.

In these circumstances, the checklist for the modification will demand the inclusion of the design approval reference number. In the left hand drive conversion example given above, the modifier will be required to include the approval reference number issued under the design code *LS1* in the modification checklist *LS2*.

In the case of complex modifications, a checklist will be required for each major element of the completed modification. For example, where a passenger vehicle is modified, by extending the wheelbase and removing the roof, four checklists will be required as shown below:

- roof removal design;
- vehicle stretch design;
- the corresponding checklist for the actual roof modification; and
- the corresponding checklist for the stretch modifications.

In some cases complex modifications may involve other primary code categories. If in the previous example the child restraints anchor points needed to be repositioned, a checklist covering a child restraint installation Code *LK6* would also be required.

It is therefore important that modifiers acquaint themselves with the entire VSB 14 so as to minimise the risk of having modifications rejected by the Registration Authority because of incomplete work.

Checklists are critical to the successful application of VSB 14. Checklists must be used by both *Signatories* who plate vehicles under a modification scheme and by persons who make individual submissions for approval. Standard practice requires those involved in modification schemes to retain the checklists for audit purposes.

Signatories or companies involved in the modification industry may copy or download checklists without copyright concerns and may *top and tail* the checklists with their logos, providing the published contents of the checklists are not omitted or altered in any way. The checklists may also be formatted differently.

3.5 LIMITED APPLICATION TO LIGHT COMMERCIAL VEHICLES

Some codes for *truck-like* modifications are not replicated in VSB 14 as these are already covered in VSB 6. In these cases VSB 6 may be used for the certification of modifications to light commercial vehicles or other light vehicles based on a truck chassis subject to discussion with the appropriate Registration Authority.

3.6 ADMINISTRATION

Authorities administer Codes of Practice differently and it is therefore important that the appropriate Registration Authority be contacted for information concerning business rules and the status of VSB 14 before commencing any work.

Certain Registration Authorities administer schemes that allow authorised persons or organisations to place a modification plate on a modified vehicle. Amongst other things, the plate must have stamped or engraved on it the codes applicable to the work carried out signifying that it has been carried out in accordance with VSB 14.

Checklists contained in VSB 14 are provided for the convenience of both designers and modifiers. They may be photocopied for use on more than one job.

3.7 GENERAL INFORMATION CONCERNING ICVS

An ICV is not a *production vehicle*; rather it is manufactured as a *one-off* vehicle. If 3 or more ICVs are manufactured by a person in a 12 month period VSB 14 does not apply to these vehicles. These vehicles are subject to the vehicle certification procedures under the Motor Vehicle Standards Act. Vehicles manufactured on a commercial basis are not ICVs.

An ICV may be composed of parts from one or more *Production Vehicles*. The parts do not need to be new.

ICVs include certain *kit cars* and certain production vehicle replicas that have been assembled in accordance with the production limitations mentioned above.

An ICV should comply with the ADRs applicable to its date of manufacture. Each Registration Authority will determine the date of manufacture of an ICV. It is important that prospective builders discuss this issue with the appropriate jurisdiction before commencing a project.

Alternative methods of demonstrating ADR compliance for ICVs are also acceptable. Registration Authorities may grant exemptions from compliance with ADRs that require vehicle crash testing.

An ICV is considered to be a new vehicle for registration purposes and therefore will always require a new *Vehicle Identification Number* (VIN) to be issued for it.

An ICV, being a new design, need not comply with the requirements of the Modification Codes that relate to modifications of existing *Production Vehicles* - for example, the ratios of engine size to vehicle weight requirements of Section LA- *Engine* do not apply.

3.8 STREET ROD GUIDELINES

The NSRG may be downloaded from the DIT website at the following location and by navigating to the menu selection titled, *Vehicle Standards Bulletins*:

www.infrastructure.gov.au

Currently the NSRG is located on a different web-page to the other VSB 14 documents. Each chapter is available as a separate, downloadable PDF file.

Street rods built outside of the scope of the NSRG must comply with the relevant ICV requirements as specified in VSB 14.

As an alternative to the NSRG, street rods may be built to the relevant ICV requirements as specified in VSB 14.

At the time of publication, the NSRG is not accepted by the Roads and Traffic Authority, NSW (RTA). A person building a street rod for use in NSW must comply with the *Registration Requirements and Construction Guidelines for Street Rods in NSW*.

Note: As the States and Territories administer these Guidelines, any queries concerning the Guidelines must be directed to the appropriate department within the jurisdiction in which the vehicle will be registered or principally used – please do not contact Vehicle Standards of the DIT for street rod construction or registration queries.

3.9 WRITTEN-OFF AND IMPORTED VEHICLES

The use of major structural components such as a body or chassis from a written-off or imported vehicle may be prohibited by legislation and may even constitute an offence. It is important that individuals or persons involved in this industry discuss this issue with the appropriate jurisdiction before commencing a project.

3.10 ALTERNATIVE METHODS OF DEMONSTRATING COMPLIANCE WITH VSB 14

As a general rule the level of evidence required for proof of compliance with an ADR is that specified in the *Registered Automotive Workshop Scheme (RAWS) Guidelines* as published by the DIT.

More information can be found on the following website:

http://raws.infrastructure.gov.au/raws_online_guide.htm

Work performed to the RAWS standards and guidelines is therefore an acceptable alternative method of demonstrating compliance to an ADR for the purposes of VSB 14.

Refer to Section LZ *Appendices Appendix E Proof of Compliance Utilising RAWS Guidelines and Procedures* for further information about using RAWS standards and guidelines.

3.11 ISSUES THAT ARE NOT THE SOLE RESPONSIBILITY OF REGISTRATION AUTHORITIES

Not all vehicle standards regulations fall within the single control of the Registration Authorities. For example the installation of an LPG fuel system may be governed by two or more Departments within a single jurisdiction. In these cases VSB 14 provides guidance on issues related primarily to vehicle safety. Modifiers and *Signatories* should acquaint themselves with all the regulations and standards applicable to these modifications.

Similarly, vehicle emissions are not the sole responsibility of the Registration Authority in some jurisdictions and as a consequence differences in standards may be noted within VSB 14 to accommodate for these differences.

3.12 PRODUCTS OFFERED FOR SALE MUST BE FIT FOR PURPOSE AND OF MERCHANTABLE QUALITY

Individuals and organisations who offer products for sale must ensure their products are fit for purpose and of merchantable quality. The *Trade Practices Act 1974* together with consumer protection Acts and Regulations administered by States and Territories codify these requirements.

All work done or products offered for sale under VSB 14 must therefore be in conformity with these provisions.

Persons buying products for use in a modified vehicle or an ICV must ensure the products are fit for purpose and of appropriate quality.

3.13 SECTION LZ APPENDICES

This Section provides information that is applicable to all Sections and the individual certification codes within each Section. Having this information in one place reduces repetition, improves consistency and aids in keeping Section sizes smaller.

Since this Section contains important information it is strongly recommended that it be downloaded along with the Preface and Introduction before modification or construction work is commenced.

3.14 MINOR MODIFICATIONS TO PRODUCTION VEHICLES THAT MAY NOT REQUIRE CERTIFICATION

The following *Minor Modifications* may be performed without reference to a Registration Authority, except where there is a need to report a change in the vehicle's description on the register - e.g. engine number or vehicle colour.

All modifications or the fitting of a device must not contravene the requirements of the AVSR or any of the general safety provisions. *Compliance with the AVSR* also means compliance with the equivalent regulations of a State or Territory of Australia.

Items must also be fitted in accordance with the item manufacturer's instructions or specifications and must comply with accepted engineering standards and practices.

This list is not exhaustive and jurisdictions may allow additional modifications to those mentioned below.

Minor Modifications to Production Vehicle that do not Require Certification

- Additional lighting (e.g. driving lamps and fog lamps)
- Aerials that do not obscure drivers view
- Air conditioning
- Air horn of a single tone
- Air shock absorbers provided that the vehicle maintains its original attitude
- Alarm systems
- Rear mounted removable bicycle racks
- Mudguard flares that are flexible
- Gauges internally located on the dash
- Markings, paintings, sign writing, stripes, (prism pattern) film on bodywork that do not reflect excessive light
- Mesh stone shields for windscreen and lamps
- Radios and additional speakers
- Rear vision mirrors
- Roof racks
- Sun-visors (exterior)
- Tow bars

- Wheel chair carriers (roof top type only)

Note: The above does not apply when the modification or the fitting of any device involves structural changes to the original vehicle, encroachment into occupant protection areas or any reduction in the effectiveness of safety related areas or items. In these cases the appropriate Registration Authority must be contacted for further advice as to how the matter should be progressed.

Repairs or direct replacements are not considered to be modifications and therefore do not require reference to Registration Authorities.

3.15 BASIC MODIFICATIONS TO PRODUCTION VEHICLES THAT MAY NOT REQUIRE CERTIFICATION

Basic Modifications is another category of modification that does not require certification and may be performed without reference to a Registration Authority.

Unlike *Minor Modifications* this modification category has the standards to which the modifications must be performed specified in each Section of VSB 14.

Standards to which these modifications must be performed are specified in each Section under the sub-sections titled *General Requirements* and *Basic Modifications Without Certification*.

Note: The above does not apply when the *Basic Modifications* involve structural changes to the original vehicle, encroachment into occupant protection areas or any reduction in the effectiveness of safety related areas or items. In these cases the modifications are no longer *basic* and the modifications must be certified under the appropriate VSB 14 certification code/s. If no suitable certification code exists, the appropriate Registration Authority must be contacted for further advice as to how the matter should be progressed.

3.16 MODIFICATIONS TO VEHICLES EQUIPPED WITH ESC

Many modern vehicles are now being equipped with a safety feature known as Electronic Stability Control (ESC). (ESC is also known by other terms including Vehicle Stability Control or Dynamic Stability Control).

ESC provides motorists additional safety in terms of vehicle stability and handling, particularly in difficult situations where loss of control could otherwise occur. ESC uses computer technology to assist the driver in maintaining control in emergency situations – particularly when executing avoidance manoeuvres involving sudden swerving and in cases when the vehicle begins to slide and rotate sideways.

Braking is automatically applied to individual wheels, such as the outer front wheel to counter oversteer, or the inner rear wheel to counter understeer. Some ESC systems also reduce engine power until steering control is regained.

ESC is programmed by the vehicle manufacturer for the vehicle to which it is fitted taking into account a number of design parameters such as; brake, engine and transmission performance, tyre specifications, steering systems, suspension (type and performance characteristics), mass of the vehicle and weight distribution.

For modifications such as those to the features listed above, evidence should be obtained either from the vehicle manufacturer or through testing to determine the impact on the ESC system. To remain within the scope of VSB 14, a vehicle fitted with ESC must not be modified if the operation of the ESC is affected unless the ESC system is adjusted accordingly.

4 IMPORTANT INFORMATION FOR USERS

Users of VSB 14 need to ensure that they refer to the most recent version of the relevant Section/s when working on a job. The version is identified by the version number and date on the face page of each Section. The version number and date is also located in the footer throughout each document. On the website, each Section has the version number contained in the Section file name for easy identification and cross referencing against existing hard copies. (Refer to sub-section 5.4 *List of PDF File Names* for the filenames of all VSB 14 documents).

If not already done so, users should also download and read the *Preface and Section LZ Appendices* for study and reference.

These two Sections along with this *Introduction* provide the background information to assist users in understanding how VSB 14 is structured, and the meaning of the types of modification codes specified in VSB 14. It also provides some limited information on how Registration Authorities administer VSB 14.

Understanding these requirements is important to ensure that the correct processes are followed thereby reducing the likelihood of arguments or having work rejected by authorities.

If in doubt about any issue concerning the administration of VSB 14 or any issues contained in VSB 14, users should seek clarification from the appropriate State or Territory.

While VSB 14 provides assistance with respect to the construction of ICVs and the execution of modifications, it is not to be taken to be a design manual. Determination of component strength, performance, suitability and functionality must be either calculated or determined on a case by case basis by suitably qualified personnel experienced in each matter under consideration.

Please do not contact Vehicle Safety Standards (VSS) of the Australian Government Department of Infrastructure and Transport in Canberra about VSB 14. VSS provides the website as a service only.

5 LIST OF SECTIONS, CERTIFICATION CODES, CHECKLISTS, GUIDELINES AND FILE NOMENCLATURE

5.1 SECTIONS, CERTIFICATION CODES AND CHECKLISTS

Table 2 lists the Sections of VSB 14 together with their corresponding certification codes and checklists.

Table 2 Sections, Certification Codes and Checklists

Section		
LA	ENGINE	
	LA1	Equivalent Engine Installation and Checklist
	LA2	Performance Engine Installation and Checklist
	LA3	Supercharger/Turbocharger Installation and Checklist
	LA4	Engine Modifications and Checklist
LB	TRANSMISSION	
	LB1	Transmission Substitution and Checklist
	LB2	Rear Axle Substitution and Checklist
LG	BRAKES	
	LG1	Brake System Conversion (Design) and Checklist
	LG2	Brake System Conversion and Checklist
LH	BODY AND CHASSIS	
	LH1	Roof Conversion (Design) and Checklist
	LH2	Roof Conversion and Checklist
	LH3	Modified Wheelbase Conversion (Design) and Checklist
	LH4	Modified Wheelbase Conversion and Checklist
	LH5	Vehicle Construction (Design) and Checklist
	LH6	Vehicle Construction and Checklist
	LH7	Body/Chassis Variants Conversion and Checklist
	LH8	Not Used
	LH9	Not Used
	LH10	Not Used
	LH11	Campervan, Motorhome Conversion and Checklist

Section		
LK	SEATING AND OCCUPANT PROTECTION	
	LK1	Seat and Seatbelt Installation/Removal and Checklist
	LK2	Seat and Anchorage Certification and Checklist
	LK3-5	Not Used
	LK6	Child Restraint Anchorage Installation and Checklist
	LK7	Not Used
	LK8	Construction and Installation of One-Off Roll-bars and Roll-cages by Individuals and Checklist
	LK9	Design and Manufacture of Commercial Aftermarket Roll-bars, Roll-cages and Other Types of ROPS and Checklist
	LK10	Installation of Aftermarket Roll-bars, Roll-cages and ROPS and Checklist
LL	MOTOR CYCLES AND THREE WHEELED VEHICLES	
	LL7	Seating Capacity Alteration (This Code has now been deleted but an equivalent requirement still exists in Queensland)
LM	FUEL SYSTEMS	
	LM1	Fuel Tank Alteration and Checklist
	LM2	Installation of Liquefied Petroleum Gas (LP Gas) Fuel Systems and Gas Containers and Checklist
	LM3	Natural Gas (NG) Fuel System Installations and Modification and Checklist
LO	VEHICLE STANDARDS COMPLIANCE	
	LO1	Australian Design Rule Compliance
		Checklist LO1-1 ADR Compliance Summary (Applicable to all Third Edition ADR Category Vehicles)
		Checklist LO1-2 – ADR Second Edition Compliance (Applicable to all Second Edition ADR Category Vehicles Except Motor Cycles and Mopeds)
		Checklist LO1-3 – ICV Motor Vehicle (Applicable to MA, MB and MC ADR Category Vehicles)
		Checklist LO1-4 –ICV Motor Vehicle (Applicable to MD, NA and NB ADR Category Vehicles)

Section		
	LO2	ICV Passenger Cars and Derivatives
		(For ADR Category MA, MB and MC vehicles use LO1-1, LO1-3 Checklists)
		(For ADR Category MD, NA and NB vehicles use LO1-1, LO1-4 Checklists)
	LO3	Personally Imported Vehicle Compliance
	LO4	ICV LEM1 Tricycle (ADR Category LEM1) and Checklist
	LO5	ICV LEP1 Tricycle (ADR Category LEP1) and Checklist
	LO6	Street Rods
	LO7	ICV Motor Cycle (ADR Category LA, LB, LC and LD) and Checklist
LS	TYRES, RIMS, SUSPENSION and STEERING	
	LS1	LHD Vehicle Steering Conversion (Design) and Checklist
	LS2	LHD Vehicle Steering Conversion and Checklist
	LS3	Front Suspension and Steering Modification (Design) and Checklist
	LS4	Front Suspension and Steering Modification and Checklist
	LS5	Rear Suspension Modification (Design) and Checklist
	LS6	Rear Suspension Modification and Checklist
	LS7	High Lift - 50mm to 150mm (Design) and Checklist
	LS8	High Lift - 50mm to 150mm Modification and Checklist
LT	TEST PROCEDURES	
	LT1	Beaming and Torsion Tests, Reporting Forms and Checklist
	LT2	Lane Change Manoeuvre Test and Checklist
	LT3	Exhaust Emissions – IM240 Test and Checklist
	LT4	Noise Test and Checklist
LV	ALTERNATIVE POWER UNITS	
	LV1	Installation of Electric Drives in Motor Vehicles; Guidelines and Checklist
LZ	APPENDICES	

5.2 INDEPENDENT CHECKLISTS

The following checklists shown in Table 3 are available on the DIT website as separate PDF files and as a consequence need to be downloaded independently of the Section that references them.

Because these are relatively large documents, they have been made independent to reduce the size of the Sections that reference them and to save paper by not requiring whole Sections with their checklists to be downloaded and printed each time a checklist is required.

The *file reference* listed below appears at the beginning of each PDF file name to assist in the identification of each file.

Table 3 List of Independent Checklists

File Reference	Checklist Name and Applicability
NCOP10D	Checklist LO1-2 – Second Edition Compliance (Applicable to all Second Edition ADR Category Vehicles Except Motor Cycles and Mopeds)
NCOP10A	Checklist LO1-3 – ICV Motor Vehicle Checklist (Applicable to MA, MB and MC ADR Category Vehicles)
NCOP10B	Checklist LO1-4 - ICV Motor Vehicle Checklist (Applicable to MD, NA and NB ADR Category Vehicles)
NCOP10C	Checklist LO7 - ICV Motor Cycle Checklist (Applicable to LA, LB, LC and LD ADR Category Vehicles)
NCOP15A	Checklist LO4-LEM - ICV LEM1 Tricycle (ADR Category LEM1)
NCOP15B	Checklist LO5-LEP - ICV LEP1 Tricycle (ADR Category LEP1)

5.3 GUIDELINES

Table 4 lists the Guidelines that are currently called-up by VSB 14.

Table 4 List of Guidelines

File Reference	Name of Guidelines
NCOP14	National Guidelines for the Installation of Electric Drives in Motor Vehicles
NCOP15	National Guidelines for Individually Constructed LE1 Motor Tricycles (Other than Goods Vehicles) in Australia.
NCOP17	National Guidelines for the Construction and Modification of Street Rods in Australia

5.4 LIST OF PDF FILE NAMES

The following is a list of the file names for each VSB 14 Section as they appear on the DIT website where Vx represents the Section version number.

The *file reference* appears at the beginning of each PDF file name to assist in the identification of each file.

1. NCOP1 Preface Vx *ddMmmyy*
2. NCOP2 Introduction Vx *ddMmmyy*
3. NCOP3 Section LA Engine Vx *ddMmmyy*
4. NCOP4 Section LB Transmission Vx *ddMmmyy*
5. NCOP5 Section LG Brakes Vx *ddMmmyy*
6. NCOP6 Section LH Body Modifications Vx *ddMmmyy*
7. NCOP7 Section LK Seating and Occupant Protection Vx *ddMmmyy*
8. NCOP8 Section LL Motorcycles Vx *ddMmmyy*
9. NCOP9 Section LM Fuel Systems Vx *ddMmmyy*
10. NCOP10 Section LO ADRS ICVs Vx *ddMmmyy*
11. NCOP10A LO1-3 ICV Checklist Vx *ddMmmyy*
12. NCOP10B LO1-4 ICV Checklist Vx *ddMmmyy*
13. NCOP10C LO7 ICV Motorcycle Checklist Vx *ddMmmyy*
14. NCOP10D LO1-2 Second Edition ADRs Checklist Vx *ddMmmyy*
15. NCOP11 Section LS Suspension and Steering Vx *ddMmmyy*
16. NCOP12 Section LT Test Procedures Vx *ddMmmyy*
17. NCOP13 Section LV Alternative Power Units Vx *ddMmmyy*
18. NCOP14 Guidelines Electric Drive Vx *ddMmmyy*
19. NCOP15 Trike Guidelines Vx *ddMmmyy*
20. NCOP15A LEM Trike Checklist Vx *ddMmmyy*
21. NCOP15B LEP Trike Checklist Vx *ddMmmyy*
22. NCOP16 Section LZ Appendices Vx *ddMmmyy*

- 23. NCOPC1 Cover Page VSB14 Vx *ddMmmyy*
- 24. NCOPC2 Cover Page Guidelines Electric Drive Vx *ddMmmyy*
- 25. NCOPC3 Cover Page Guidelines Electric Drive Vx *ddMmmyy*

Legend: Vx represents the version number e.g. V2.2.
ddMmmyy expresses the date the version was published on the website in the simplified *day/Month/year* format e.g. 26May2015.