

# National Heavy Vehicle Inspection Manual

## Amendment Summary

### Version 2.1 (February 2016) to Version 2.2 (July 2017)

The Manual has been updated to align with amendments to the *Heavy Vehicle National Law* and Regulations effective from 1 July 2017 and to include other minor corrections.

Section 2 Brakes	Summary of changes						
<b>Version 2.2 July 2017</b>							
2.13 Brake testing with a roller brake tester	<p>Amended reason for rejection (b) to refer to the performance standards in Table 2.1. This change also included a minor amendment to the text at the start of section 2.13.</p> <p>Deleted reason for rejection (c)</p> <p><i>c) With all brakes released, the brake drag at any axle exceeds the performance requirement specified in Table 2.4</i></p> <p>Subsequent criteria re-lettered accordingly.</p> <p>Deleted Table 2.3 Brake Force, including following note. The performance levels will instead be referenced back to table 2.1 (performance in m/s/s and %g). This is being done to simplify the units of measure used for brake testing (kN/t is only used for roller testing) and to remove a rounding / conversion error that existed when using kN/t.</p> <p><i>Table 2.3 — Brake force</i></p> <table border="1"> <thead> <tr> <th>Type of vehicle</th> <th>Minimum peak (kN/tonne of GVM)</th> <th>Average (kN/tonne of GVM)</th> </tr> </thead> <tbody> <tr> <td>GVM exceeding 4.5 tonnes</td> <td>4.5</td> <td>3.0</td> </tr> </tbody> </table> <p><i>Note: The minimum brake efficiency (kN/tonne) is determined by:</i></p> <ul style="list-style-type: none"> <li><i>— Step 1. Adding the brake force for each axle</i></li> <li><i>— Step 2. Dividing Step 1 by the vehicle mass:</i></li> </ul>	Type of vehicle	Minimum peak (kN/tonne of GVM)	Average (kN/tonne of GVM)	GVM exceeding 4.5 tonnes	4.5	3.0
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	<p>Deleted Table 2.4 Maximum brake drag</p> <p><i>Table 2.4 — Maximum brake drag</i></p> <table border="1"> <thead> <tr> <th>Axle type</th> <th>kN (maximum)</th> </tr> </thead> <tbody> <tr> <td>Drive axle</td> <td>1.0</td> </tr> <tr> <td>Other axle</td> <td>0.5</td> </tr> </tbody> </table>	Axle type	kN (maximum)	Drive axle	1.0	Other axle	0.5
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Drive axle	1.0						
Other axle	0.5						

Section 3 Couplings	Summary of changes
<b>Version 2.2 July 2017</b>	
3.1 Check fifth wheels and turntables	Amended reason for rejection (a) to remove the reference to ADR62. a) <del>Where ADR 62 applies</del> , The fifth wheel does not display the manufacturer's name/ trademark, nominal size (e.g. 50mm) and the 'D-value' rating
	Amended reason for rejection (m) to also include wear or adjustment of the kingpin locking mechanism beyond the manufacturer's specifications. m) Kingpin locking mechanism parts are missing, <i>worn or adjusted beyond manufacturer's specifications</i> , or damaged to the extent that the kingpin is not securely held
3.3 Check towbar	Amended reason for rejection (d) to remove references to spring washers. d) Where any part of the towbar is removable (the bolts, studs, nuts etc.), fastening those parts do not have a locking device such as a U-clip, split pin, <i>spring washer</i> or nylon lock nut
Section 6 Structure and Body Condition	Summary of changes
<b>Version 2.2 July 2017</b>	
6.2 Check rear marker plates	Amended reason for rejection (a) to exclude vehicles fitted with conspicuity markings from the requirement to be fitted with rear marker plates. a) Retroreflective rear marker plates are not fitted to a vehicle with a GVM over 12 tonnes, except: <ul style="list-style-type: none"> <li>• a bus fitted with hand grips or similar equipment for standing passengers to hold</li> <li>• <i>a vehicle fitted with conspicuity markings</i></li> </ul> Amended reason for rejection (b) to refer to VSB12 as the relevant standard for rear marking plates. b) Rear marking plates are not fitted in locations specified by <del>the required standards</del> <i>VSB12</i> .
Additional information – Mudguard and Mudflap requirements	To assist in understanding, a minor amendment has been made to the final paragraph of this information sheet. <i>Notwithstanding the requirements specified above, the mudguard, including a mudflap (if fitted), does not need to come any lower <del>not be less</del> than 230mm from the ground, or for an off-road vehicle, 300mm.</i>
Section 7 Seats and Seatbelts	Summary of changes
<b>Version 2.2 July 2017</b>	
7.1 Check seats	Deleted reason for rejection (f) as item is covered by reason for rejection (e) <del><i>f) Where the reduction or increase in seating capacity changes the vehicle's Australian Design Rule (ADR) vehicle category or affects compliance with the applicable vehicle standards:</i></del>
	Deleted note following reason for rejection (f) as VSB5 does not apply to heavy vehicles. <del><i>Note: For more detailed information on the installation of additional seats, refer to VSB5. A copy of the bulletin may be obtained from the website of the Commonwealth Department of Infrastructure and Regional Development at <a href="http://www.infrastructure.gov.au">www.infrastructure.gov.au</a></i></del>
	Deleted note following reason for rejection (f) as there is no longer any reference to ADR vehicle categories in this section. <del><i>Refer to Appendix A – Vehicle Category Codes and ADR Applicability Tables for definitions:</i></del>

Section 8 Lights and Reflectors	Summary of changes
<b>Version 2.2 July 2017</b>	
8.1 Check lights and reflectors	<p>Added new reason for rejection (c) to provide reasons for rejection for reflectors.</p> <p><i>c) Any reflector on the vehicle, other than conspicuity markings:</i></p> <ul style="list-style-type: none"> <li>• <i>show white to the side or rear</i></li> <li>• <i>show red to the side or front</i></li> </ul> <p><i>Note: The rearmost side reflector can be red if it is grouped with the rear position lamp, the rear end-outline marker light, the rear fog light, the stop light, the red rearmost side-marker light or the rear retro-reflector.</i></p> <ul style="list-style-type: none"> <li>• <i>show yellow to the front or rear</i></li> <li>• <i>show a colour other than red, yellow or white.</i></li> </ul> <p>Current reason for rejection (c) renumbered as (d).</p>
	<p>Current reason for rejection (d) renumbered as (h).</p> <p>Subsequent reasons for rejection renumbered accordingly.</p> <p>Added new reasons for rejection (e), (f) and (g) to provide for the installation of daytime running lights.</p> <p><i>e) More than two daytime running lights are fitted</i></p> <p><i>f) Daytime running lights fitted to a vehicle built from 1 October 1991:</i></p> <ul style="list-style-type: none"> <li>• <i>are not white</i></li> <li>• <i>are less than 250mm or more than 1500mm from the ground, or</i></li> <li>• <i>on a vehicle that is at least 1300mm wide, the distance between the inner edge of the lights is not at least 600mm, or</i></li> <li>• <i>on a vehicle that is less than 1300mm wide, the distance between the inner edge of the lights is not at least 400mm</i></li> </ul> <p><i>g) Daytime running lights fitted to a vehicle built prior to 1 October 1991:</i></p> <ul style="list-style-type: none"> <li>• <i>Are not white or yellow</i></li> <li>• <i>are installed so the centre of light is more than 510mm from the nearer side of the vehicle</i></li> <li>• <i>on a vehicle that is at least 1300mm wide, the distance between the inner edge of the lights is not at least 600mm</i></li> <li>• <i>on a vehicle that is less than 1300mm wide, the distance between the inner edge of the lights is not at least 400mm</i></li> </ul> <p>Subsequent reasons for rejection renumbered accordingly.</p>
	<p>Added new reason for rejection (s):</p> <p><i>s) Driving lights or additional headlights are not installed symmetrically about the centre of the vehicle</i></p> <p>Subsequent reasons for rejection renumbered accordingly.</p>

Section 8 Lights and Reflectors	Summary of changes
8.5 Check conspicuity markings	<p>Added new section relating to conspicuity markings, if fitted.</p> <p><b>8.4 Check conspicuity markings</b></p> <p><i>Conspicuity markings are optional reflective markings that can be fitted to a heavy vehicle intended to improve visibility of the vehicle.</i></p> <p><b>Reasons for rejection</b></p> <p>a) <i>Reflective material used for conspicuity markings:</i></p> <ul style="list-style-type: none"> <li>• <i>shows white to the rear</i></li> <li>• <i>shows red to the side or front</i></li> <li>• <i>shows yellow to the front</i></li> <li>• <i>shows a colour other than red, yellow or white.</i></li> </ul> <p>b) <i>Markings do not continue for at least 80% of the length or width of the vehicle</i></p> <p>c) <i>Markings on the side of the vehicle do not come within at least 600mm of the front or rear of the vehicle</i></p> <p><i>Note: The markings do not need to continue in the gap between the cabin and the body</i></p> <p>d) <i>The lowest part of the markings is less than 250mm or more than 1500mm from the ground</i></p> <p><i>Note: Where the design of a vehicles does not allow for fitting with 1500mm, the marking may be fitted up to 2100mm from the ground</i></p> <p>e) <i>For full or partial contour markings that are fitted to the side of the vehicle, markings at the top are more than 400mm from the upper extremity of vehicle</i></p> <p>f) <i>For full or partial contour markings that are fitted to the rear of the vehicle, markings:</i></p> <ul style="list-style-type: none"> <li>• <i>on the sides of the vehicle are more than 400mm from the outer edge of the vehicle</i></li> <li>• <i>at the top of the vehicle are more than 400mm from the upper extremity of vehicle</i></li> </ul> <p>g) <i>Markings do not comply with Australian Design Rule 13/..</i></p> <p><i>For additional information regarding conspicuity markings, refer to the Australian Trucking Association's Technical Advisory Procedure on Heavy Vehicle Visibility.</i></p>
Additional Information – Headlight Testing Screens	<p>The note following section 2.1 has been amended to correct a typographical error:</p> <p><b>Note:</b> All lines to be black except centre vertical which is to be red. The thickness of all lines is to be as small as possible and consistent with good visibility for an observer at a distance</p> <p>of 8 metres from the screen during test of headlights. The heights of the horizontal lines above the level of surface upon which vehicle is standing during test are to be clearly marked with black figures, as shown, of a size to ensure good visibility for an observer at a distance of 8 metres from the screen during test of headlights.</p>

Section 10 Windscreens and Windows

Summary of changes

Version 2.2 July 2017

10.2 Test the light transmittance level of the windscreen, side and rear windows

Additional information added to the introduction to this section to clarify that both tinting films and tinted glass are considered to be tinting for the manual.

*In this section, the term tinting refers to both a film applied to glazing to reduce the luminous transmittance and 'tinted glass' where the glazing is manufactured with tinting material between the layers of glass.*


Table 10.1 heading updated to refer to 'Light transmittance requirements' and amendments made to the table to provide transmittance requirements for the 4 sub-types of windows.

Table 10.1 Light transmittance requirements


Glazing	Minimum light transmittance	Vehicles NOT TO BE REJECTED until meter readings are LESS than
Windscreen	70%	65%
All other windows (no tinting)	70%	65%
All other windows level with or forward of the drivers seated position (with tinting)	35%	30%
<i>All other windows (with tinting)</i>	<i>0%</i>	<i>0%</i>

Figure 10.3 amended for clarity

Trucks



Buses - 10 or more seating positions



- ★ **Windscreen**
  - No film at all allowed on the lower part of the windscreen
  - Minimum 70% VLT
  - Tinted or opaque band allowed at the top of the windscreen. It is not to extend below the portion swept by the wipers or 10% of the depth of the windscreen
- **Windows**
  - Minimum 35% VLT
  - Must be no more than 10% reflective
  - Film must not be damaged, bubbled or discoloured
- **Windows rearward of driver**
  - No minimum VLT specified for rear windows
  - Must be no more than 10% reflective

Section 13 Buses

Summary of changes

Version 2.2 July 2017

13.12 Engine and fuel system

Note added after reason for rejection (b) to clarify requirements for separating the fuel system from the engine compartment.

*Note: A fuel tank is considered to be separated from the engine compartment if it is separated by a chassis rail or by a fuel resistant partition.*

*A filler pipe, including the filler inlet, is considered to be separated from the engine compartment if it is separated by:*

- *a fuel resistant partition; or*
- *by a distance not less than 900 mm, so that they are not exposed to excessive heat and that in the event of any fuel spillage during filling operations or leaks from the filler cap connection, fuel cannot fall on to the engine or exhaust system.*

Section 14 Trailers	Summary of changes
<b>Version 2.2 July 2017</b>	
14.2 Check trailer brakes and breakaway protection	Amended reason for rejection (b) to correct a typographical error. <ul style="list-style-type: none"> <li>b) A trailer's service brakes <i>do not</i> apply automatically when any trailer service hose coupling or connection is disconnected or the operating pressure falls below the recommended operating level</li> </ul>
14.4 Check towing attachments	Added new reason for rejection (c) relating to tow coupling overhang for road train trailers: <ul style="list-style-type: none"> <li>c) <i>For a trailer designed for use in a road train, the rear coupling overhang exceeds:</i> <ul style="list-style-type: none"> <li>• <i>For a semitrailer, 30% of the distance from the point of articulation at the front of the trailer to the centre of the rear axle group; or</i></li> <li>• <i>For another type of trailer, 30% of the distance from the centre of the front axle group to the centre of the rear axle group.</i></li> </ul> </li> </ul> <p><i>Note: 'Rear coupling overhang' is the distance from the centre of the rearmost axle group to the pivot point of the coupling near the rear of the vehicle.</i></p>
14.6 Check kingpin	Amended reason for rejection (a) to remove the reference to ADR62, clarify that nominal size must be expressed in millimetres and D-value in kilonewtons. <ul style="list-style-type: none"> <li>a) <del>Where ADR 62 applies</del> <i>The kingpin does not display the manufacturer's name/ trademark, nominal size in millimeters (e.g. 50mm) and the 'D-value' rating in kilonewtons (kN).</i></li> </ul>
	Added new reason for rejection (b) providing a minimum D-value for kingpins fitted to trailers used in road trains. <ul style="list-style-type: none"> <li>b) <i>For trailers used in a road train, the kingpin is not rated to at least 162kN.</i></li> </ul> Subsequent reasons for rejection renumbered accordingly.
14.15 Check rear marker plates	Amended reasons for rejection (a) to exclude vehicles fitted with conspicuity markings from the requirement to be fitted with rear marker plates. <ul style="list-style-type: none"> <li>a) <i>Retroreflective rear marker plates are not fitted to a trailer with a GTM greater than 10 tonnes that is not fitted with conspicuity markings.</i></li> </ul>
	Amended reason for rejection (b) to refer to VSB12 as the relevant standard for rear marking plates. The note at the end of this section has also been updated to provide a correct reference to VSB12. <ul style="list-style-type: none"> <li>b) <i>Rear marking plates are not fitted in locations specified by <del>the required standards</del> VSB12.</i></li> </ul>
Additional information – Mudguard and Mudflap requirements	To assist in understanding, a minor amendment has been made to the final paragraph of this information sheet. <p><i>Notwithstanding the requirements specified above, the mudguard, including a mudflap (if fitted), does not need to come any lower <del>not be less</del> than 230mm from the ground, or for an off-road vehicle, 300mm.</i></p>
Section 15 Motorhomes, caravans and campervans	Summary of changes
<b>Version 2.2 July 2017</b>	
15.1 Visually inspect the living quarters	Amended reason for rejection (k) to correct a typographical error. <ul style="list-style-type: none"> <li>k) <i>Where mains wiring is fitted, there is no <del>an</del> electrical safety certificate showing compliance with Australian/New Zealand Standard AS/NZS 3001 Electrical installations – Transportable structures and vehicles including their site supplies</i></li> </ul> A note has also been included to guide inspectors to where the certificate or label can commonly be found. <p><i>Note: Typically compliance certificates or labels can be found in the electrical switchbox, in the owner's manual or glovebox.</i></p>
	Amended reason for rejection (o) to correct typographical errors. <ul style="list-style-type: none"> <li>o) <i>At least half the number of windows are not <del>must be</del> capable of being opened unless <del>or</del> the vehicle <del>must be</del> is provided with an alternative method of ventilation.</i></li> </ul>

Section 16 Vehicle Dimensions	Summary of changes																				
<b>Version 2.2 July 2017</b>																					
16.1 Width	<p>Amended the Note at the end of the sub-section for consistency with ADRs.</p> <p><i>Note: This is to be measured without taking into account any of the following:</i></p> <ul style="list-style-type: none"> <li>• anti-skid devices mounted on wheels</li> <li>• central tyre inflation systems</li> <li>• <i>side mounted lights and reflectors</i></li> <li>• rear vision mirrors</li> <li>• <del>reflectors</del></li> <li>• signalling devices</li> <li>• tyre pressure gauges</li> <li>• permanently fixed webbing assembly-type devices, such as curtain side devices, if the maximum width across the vehicle and including the devices, does not exceed 2.55 metres.</li> </ul>																				
16.3 Length	<p>The reasons for rejection in this section have been updated so that they are continuous, rather than restarting for each new type of trailer.</p> <table border="1"> <thead> <tr> <th>Previous reason for rejection</th> <th>Revised reason for rejection</th> </tr> </thead> <tbody> <tr> <td>Heavy motor vehicle (a)</td> <td>16.3 Length (a)</td> </tr> <tr> <td>Heavy motor vehicle (b)</td> <td>16.3 Length (b)</td> </tr> <tr> <td>Heavy motor vehicle (c)</td> <td>16.3 Length (c)</td> </tr> <tr> <td>Semitrailer and dog trailers (a)</td> <td>16.3 Length (d)</td> </tr> <tr> <td>Semitrailer and dog trailers (b)</td> <td>16.3 Length (e)</td> </tr> <tr> <td>Semitrailer and dog trailers (c)</td> <td>Included in (d) and (e)</td> </tr> <tr> <td>Semitrailer and dog trailers (d)</td> <td>16.3 Length (f)</td> </tr> <tr> <td>Semitrailer and dog trailers (e)</td> <td>16.3 Length (g)</td> </tr> <tr> <td>Pig trailers (a)</td> <td>16.3 Length (h)</td> </tr> </tbody> </table>	Previous reason for rejection	Revised reason for rejection	Heavy motor vehicle (a)	16.3 Length (a)	Heavy motor vehicle (b)	16.3 Length (b)	Heavy motor vehicle (c)	16.3 Length (c)	Semitrailer and dog trailers (a)	16.3 Length (d)	Semitrailer and dog trailers (b)	16.3 Length (e)	Semitrailer and dog trailers (c)	Included in (d) and (e)	Semitrailer and dog trailers (d)	16.3 Length (f)	Semitrailer and dog trailers (e)	16.3 Length (g)	Pig trailers (a)	16.3 Length (h)
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Semitrailer and dog trailers (e)	16.3 Length (g)																				
Pig trailers (a)	16.3 Length (h)																				
	<p>Amended reasons for rejection Semitrailer and dog trailers (a), (b) and (c) to simplify the length requirements for these types of trailers. This has combined these requirements into two reasons for rejection, (d) and (e), with (f) now omitted.</p> <p><i>d) The distance from the point of articulation to the rear overhang line exceeds:</i></p> <ul style="list-style-type: none"> <li>• <i>for a refrigerated semitrailer not used in a road train or B-double combination— 9.9 metres; or</i></li> <li>• <i>for another semitrailer or dog trailer—9.5 metres</i></li> </ul> <p><i>e) The distance from the point of articulation to the rear of a trailer exceeds:</i></p> <ul style="list-style-type: none"> <li>• <i>for a refrigerated semitrailer not used in a road train or B-double combination—13.6 metres; or</i></li> <li>• <i>for a semitrailer not used in a road train or B-double combination—13.2m; or</i></li> <li>• <i>for another semitrailer or dog trailer—12.3 metres.</i></li> </ul>																				
	<p>Amended reason for rejection Semitrailer and dog trailers (e) [renumbered 16.3 (g)] to also include converter dollies.</p> <p><i>g) For a dog trailer or converter dolly, the drawbar exceeds 5.0 metres from the centre of the coupling to the front articulation point.</i></p>																				
	<p>New reason for rejection (i) included to provide a minimum drawbar length for trailers used in road trains.</p> <p><b>Road train trailers</b></p> <p><i>i) For a trailer used in a road train, the drawbar is not at least 3.0m long from the centre of the coupling to the front articulation point.</i></p>																				