Extract taken from: In-service certification (WoF and CoF) > Heavy vehicles > Towing connections > Heavy vehicle fifth wheel or ball coupling (for towing a semi-trailer)

12-5 Heavy vehicle fifth wheel or ball coupling (for towing a semi-trailer)

Reasons for rejection

Mandatory equipment

1. A fifth wheel is not designed to fit a 50mm or 90mm kingpin.

2. A fifth wheel or ball-type coupling fitted to a heavy vehicle does not have evidence of certification (unless excepted in Table 12-5-1), ie:

    a) the coupling was fitted before the last CoF inspection, and after 1 January 1997, and no LANDATA record has been entered,

    Note Before 1 January 1997 certification was required but for inspection purposes the LANDATA record need not be checked

    or

    b) the coupling was fitted after the last CoF inspection and

        i. a valid LT400 form has not been presented, or

        ii. the HVS certifier was not of category HVET or HMTD.

3. A 50mm-diameter fifth wheel, other than a rigid fifth wheel, has not been:

    a) certified to NZS 5450: 1989, or

    b) certified to all of the following:

        i. Australian/New Zealand Standard 4968.1-2003, and

        ii. Australian/New Zealand Standard 4968.2-2003, and

        iii. Australian Standard 2174-2006, or

    c) fitted by the vehicle manufacturer in compliance with UN/ECE Regulation 55 (if fitted to an **imported** vehicle).

4. A 90mm-diameter fifth wheel, other than a rigid fifth wheel, has not been certified to one of the following:

    a) if fitted before 1 April 2005, NZS 5450

    b) if fitted on or after 1 April 2005, both AS 2174 and AS/NZS 4968 (Note 1).

5. A rigid fifth wheel has not been certified to manufacturer's specifications.

6. A vehicle that is fitted with a 90mm-diameter fifth wheel does not have '90mm fifth wheel', where '90' is at least 60mm high, clearly displayed in a position readily visible from the position from which the release handle of the fifth wheel is operated.

7. An ‘Operator Statement of Compliance with the Maintenance Requirements of NZS 5450: 1989’ (NZTA 4085A form) is:

a) not presented, or

b) incomplete (Note 2), or

c) not current, ie more than:

i. the time or distance specified by the fifth wheel manufacturer has elapsed or been travelled since the most recent inspection recorded on the form, or

ii. 30 days have lapsed or 15,000km has been travelled, whichever occurred sooner, since the most recent inspection recorded on the form, where manufacturer’s specifications are unavailable.

8. A vehicle is fitted with a ball-type coupling to tow a semi-trailer and:

a) is not certified to NZS 5446, or

b) does not have a valid certification label or plate attached to the vehicle as required in Table 12-5-2, or

c) is not part of a dedicated combination.

9. A required certification label or plate (ball-type couplings only):

a) is not indelible, or

b) is illegible, or

c) is not complete, or

d) is not attached to the vehicle in an easily visible position, or

e) does not match the vehicle, or

f) has obvious signs of tampering, or

g) has expired.

Condition and performance (Note 3)

10. A coupling or its mounting:

a) is not securely attached, or

b) bolt or nut is missing, significantly corroded or not suitable, or

c) is cracked, distorted or significantly corroded or has deteriorated, or

d) has corrosion damage within 150mm of the mounting points, or

e) pivot is seized, worn beyond manufacturer’s specifications, or not securely attached, or

f) is worn beyong manufacturer’s specifications.

11. The fifth wheel release mechanism:

a) is not in good condition, eg the handle is bent or damaged, or

b) does not operate freely (check only if presented without trailer attached).

12. The fifth wheel locking mechanism:

a) is not in good condition, eg jaws are worn beyond manufacturer's specifications or out of adjustment, or

b) does not operate freely (check only if presented without trailer attached).

Modification and repair (Note 4)

13. A modification or repair affects the coupling and:

a) is not excepted from the requirements for HVS certification (Table 12-5-1), or

b) the modification is not for the purpose of law enforcement or the provision of emergency services, or

c) is missing proof of HVS certification, ie vehicle has been modified or repaired, and:

i. no LANDATA record has been entered, or

ii. no valid LT400 form from an HVS certifier of category HVET or HMTD has been presented.

Note 1

AS/NZS 4968 supersedes AS 1773 and AS 1771.

Note 2

Where the service history is incomplete, the CoF inspector must note this on the CoF checksheet, but the vehicle is not required to be failed for this reason alone.

Note 3

Where a vehicle is presented in combination, the vehicles do not have to be separated, but a thorough visual inspection as far as practicable must be carried out.

Note 4

A towing connection that was certified to New Zealand standard 5446: 1987 (superseded) before November 2007 may continue to comply with and be certified to that standard until the towing connection is modified.

Note 5

While not included as an inspection item, a vehicle may not be towed using a fifth wheel coupled to another fifth wheel.

Note 6 Definitions

Fifth wheel means a device fitted to a vehicle to enable a semi-trailer to be connected to it by means of a kingpin so that the semi-trailer may be towed.

Coupling means that part of a vehicle that is specifically designed to enable it to be connected to another vehicle; it does not include a structural member of the towing or towed vehicle (eg fifth wheel, hook, pin, ball or socket type).

Dedicated combination means a combination of vehicles certified for use in combination where both vehicles are affixed with a plate clearly and indelibly marked with the VIN or chassis number of the other vehicle (the plate is fitted by the HVS certifying Eengineer).

Semi-trailer means a trailer with only one axle set that is partially superimposed on the towing vehicle so that a substantial part of the trailer and its load is borne by the towing vehicle.

Table 12-5-1. Requirements for HVS certification

HVS certification is required	HVS certification is not required
1. Fitting of a coupling, other than a direct bolt-on replacement. 2. Modification or repair of a coupling, except when this is not required in the right-hand column.	1. Fifth wheel or ball-type coupling that is a direct bolt-on replacement. 2. Any modification or repair likely to have been carried out before 1 January 1997 (modifications and repairs before this date required certification but for inspection purposes the LANDATA record need not be checked). 3. Any repair or modification not listed in the left-hand column unless the vehicle inspector considers that certification is required because the modification or repair has affected the vehicle's safety performance (a second opinion from an expert may be needed, eg the manufacturer's representative, or a reputable workshop). 4. A 50mm fifth wheel that complies with UN/ECE Regulation 55 fitted to an imported vehicle.

Table 12-5-2. Minimum information on certification label/plate

NZS 5446: 1987	NZS 5446: 2007 / NZS 5446: 2024
Company or agency name Certifying engineer VIN/Chassis number Maximum towed mass (kg) Expiry date (if certified on or after 1 August 1991)	Person, company or agency name Certifier ID Compliance certificate number (LT400) VIN/Chassis number Maximum towed mass Permitted static vertical load Coupling D value (minimum) Expiry date NZS 5446

Figure 12-5-1. Fifth wheels

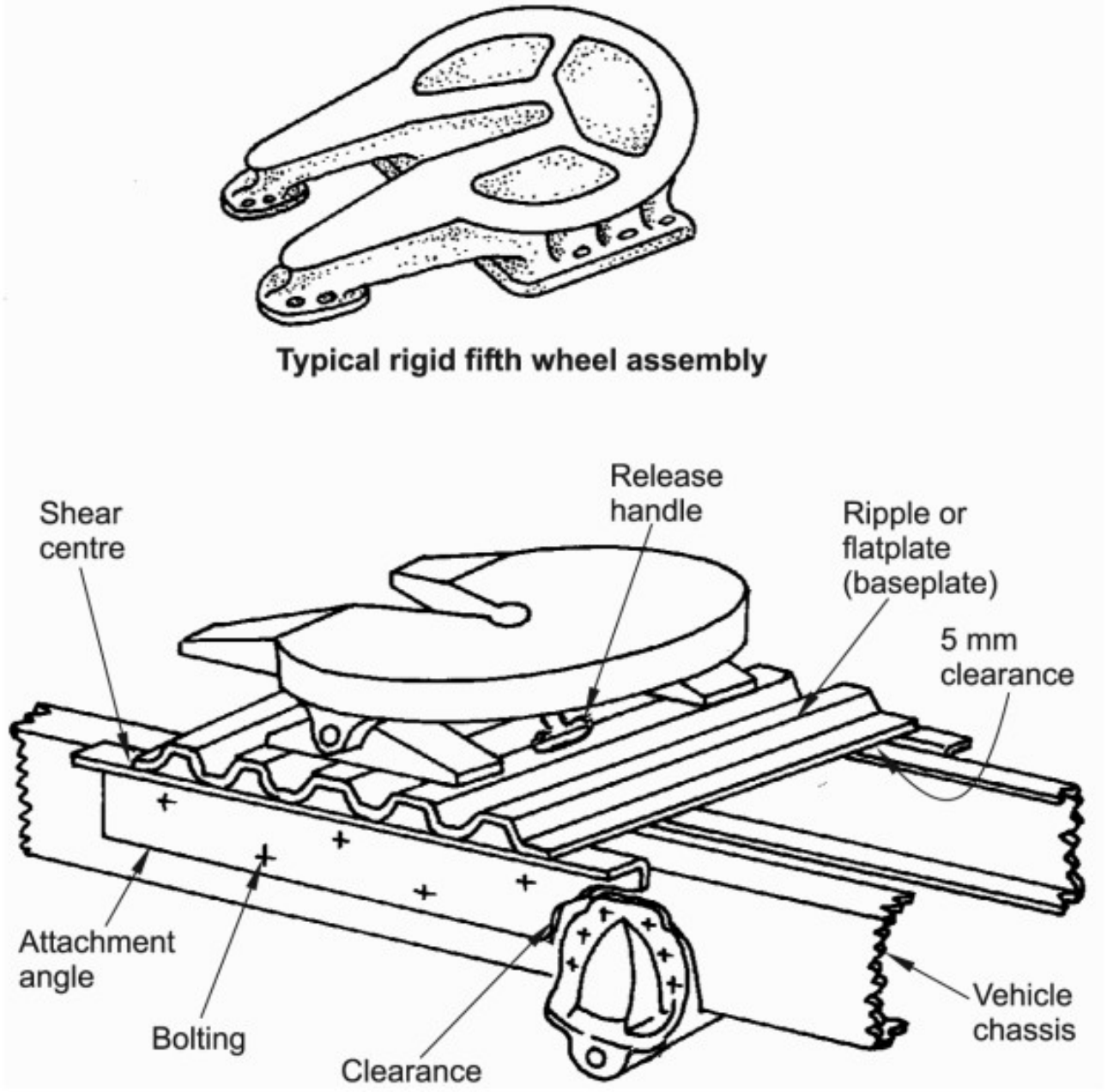
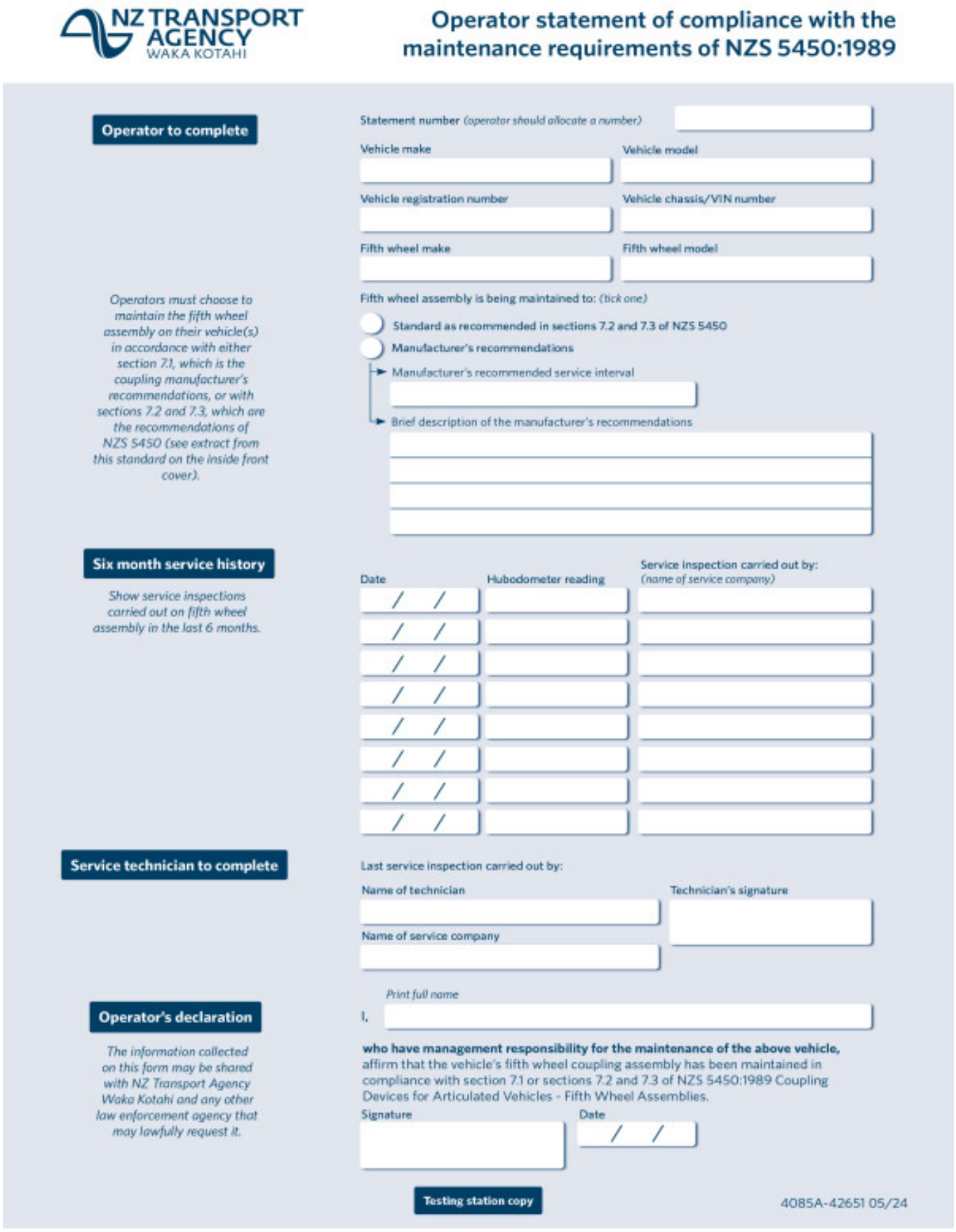


Figure 12-5-4. NZTA 4085A form (blank forms available from CoF inspecting organisations)



NZ TRANSPORT AGENCY
WAKA KOTAHI

Operator statement of compliance with the maintenance requirements of NZS 5450:1989

Operator to complete

Statement number *(operator should allocate a number)*

Vehicle make

Vehicle model

Vehicle registration number

Vehicle chassis/VIN number

Fifth wheel make

Fifth wheel model

Operators must choose to maintain the fifth wheel assembly on their vehicle(s) in accordance with either section 7.1, which is the coupling manufacturer's recommendations, or with sections 7.2 and 7.3, which are the recommendations of NZS 5450 (see extract from this standard on the inside front cover).

Fifth wheel assembly is being maintained to: *(tick one)*

- ○ Standard as recommended in sections 7.2 and 7.3 of NZS 5450
- ○ Manufacturer's recommendations
  - → Manufacturer's recommended service interval
  - → Brief description of the manufacturer's recommendations

Six month service history

Show service inspections carried out on fifth wheel assembly in the last 6 months.

Date	Hubodometer reading	Service inspection carried out by: *(name of service company)*
/ /		
/ /		
/ /		
/ /		
/ /		
/ /		
/ /		
/ /		

Service technician to complete

Last service inspection carried out by:

Name of technician

Technician's signature

Name of service company

Operator's declaration

The information collected on this form may be shared with NZ Transport Agency Waka Kotahi and any other law enforcement agency that may lawfully request it.

Print full name

I,

who have management responsibility for the maintenance of the above vehicle, affirm that the vehicle's fifth wheel coupling assembly has been maintained in compliance with section 7.1 or sections 7.2 and 7.3 of NZS 5450:1989 Coupling Devices for Articulated Vehicles - Fifth Wheel Assemblies.

Signature

Date / /

Testing station copy

4085A-42651 05/24

Summary of legislation

Applicable legislation

- Land Transport Rule: Heavy Vehicles 2004
- New Zealand Standard 5450: 1989, Coupling Devices for Articulated Vehicles – Fifth Wheel Assemblies
- Australian Standard 1773-1996: Articulated Vehicles – Fifth Wheel Assemblies
- Australian Standard 1771-1996: Installation of Fifth Wheel and Turntable Assemblies
- Australian Standard 2174-1994: Articulated Vehicles – Mechanical Coupling between Prime Movers and Semi-Trailers – Interchangeability Requirements
- Australian Standard 2174-2006:Articulated Vehicles – Mechanical coupling between prime movers and semitrailers – Interchangeability requirements
- Australian/New Zealand Standard 4968.1-2003: Heavy-road vehicles – Mechanical coupling between articulated vehicle combinations – Design criteria and selection requirements for fifth wheel, kingpin and associated equipment
- Australian/New Zealand Standard 4968.2-2003: Heavy-road vehicles – Mechanical coupling between articulated vehicle combinations – Testing and installation of fifth wheel and associated equipment
- New Zealand Standard 5446: 1987, Code of Practice for Heavy Motor Towing Connections – Drawbar Trailers
- New Zealand Standard 5446: 2007, Code of Practice for Heavy Motor Towing Connections – Drawbeams and Drawbars
- New Zealand Standard 5446:2024, On-road heavy vehicle towing connections – Drawbeams and drawbars
- UN/ECE Regulation 55:Uniform Provisions Concerning the Approval of Mechanical Coupling Components of Combinations of Vehicles E/ECE/32 4 Rev.1/Add.54/Rev.1 E/ECE/TRANS/505A.

Mandatory equipment

1. A vehicle that is constructed to tow a semi-trailer must be fitted with either:

    a) a 50mm-diameter fifth wheel, or

    b) a 90mm-diameter fifth wheel, or

    c) a ball-type coupling certified to NSZ 5446 and be operated as part of a dedicated combination.

2. A 50mm-diameter fifth wheel must comply with:

    a) New Zealand Standard 5450: 1989, or

    b) all of the following:

        i. Australian/New Zealand Standard 4968.1-2003: Heavy-road vehicles – Mechanical coupling between articulated vehicle combinations – Design criteria and selection requirements for fifth wheel, kingpin and associated equipment, and

        ii. Australian/New Zealand Standard 4968.2-2003: Heavy-road vehicles – Mechanical coupling between articulated vehicle combinations – Testing and installation of fifth wheel and associated equipment, and

        iii. Australian Standard 2174-2006: Articulated Vehicles – Mechanical coupling between prime movers and semitrailers – Interchangeability requirements, or

    c) Despite the requirements in 2b) above, an imported vehicle that is constructed to tow a semi-trailer may be fitted with a 50mm diameter fifth wheel that complies with UN/ECE Regulation 55: Uniform Provisions Concerning the Approval of Mechanical Coupling Components of Combinations of Vehicles E/ECE/32 4 Rev.1/Add.54/Rev.1 E/ECE/TRANS/505A.3. A 90mm-diameter fifth wheel installed before 1 April 2005 must comply with NZS 5450:

1989.

4. A 90mm-diameter fifth wheel installed on or after 1 April 2005 and before 29 December 2007 must comply with:

a) Australian Standard 1773-1996, and

b) Australian Standard 1771-1996, and

c) Australian Standard 2174-1994.

5. A 90mm-diameter fifth wheel installed on or after 29 December 2007 must comply with:

a) AS/NZS 4968, and

b) AS 2174.

6. A vehicle that is fitted with a 90mm-diameter fifth wheel must have, clearly displayed in a position readily visible from the position from which the release handle of the fifth wheel is operated, ‘90mm fifth wheel’ where ‘90’ must not be less than 60mm high.

7. A rigid fifth wheel fitted to a vehicle must be installed and maintained in accordance with the fifth-wheel manufacturer’s instructions.

Condition and performance

8. Towing connection components fitted to a vehicle must ensure that a secure connection can be maintained between the towing and towed vehicles under all conditions of loading and operations for which the vehicle was constructed.

Modification and repair

9. A modification or repair that affects a coupling must be inspected and certified by a HVS Certifier of category HVET or HMTD unless the vehicle:

a) excepted from the requirement for HVS certification (Table 12-5-1), and

b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Page amended **10 March 2025** (see **amendment details**)