Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN

Engineering Standard

Rail Commissioner

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0	Initial Issue	May 2016	Keith Charlton	Matthew Reedman Gary Webb	Phil Agnew
1	Changes in line with RRV and track machine's certification process. Inclusion of the assessment in OHW areas.	March 2017	Kuldeep Zala Keith Charlton	Matthew Reedman Gary Webb	Phil Agnew
2	Sections 13,14 and Appendix 5 updated	May 2018	Kuldeep Zala Keith Charlton	Mark Pronk Gary Webb	Philip Agnew
3	Sections 8, 21 and Appendices 1,4,7,8 updated to align with RRV certification standard	August 2019	Kuldeep Zala	Keith Charlton Mark Pronk	Gary Webb

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1. Introduction

The Department of Planning, Transport and Infrastructure (DPTI) operates and maintains the Adelaide Metropolitan Passenger Rail Network (AMPRN) under the Rail Accreditation assigned to the Rail Commissioner. This standard is intended to ensure that the introduction of rail trolleys and trailers onto the AMPRN does not create any risks not deemed to meet the So Far As Is Reasonably Practicable (SFAIRP) principles under Rail Safety National Law (RSNL).

The requirements are applicable to DPTI owned and Contractor supplied rail trolleys and trailers accessing and operating on the AMPRN under the DPTI Rail Accreditation. Where an Access Agreement is in place, enabling a third party to undertake work on the AMPRN under their own rail accreditation, the third party is fully responsible for ensuring that any rail trolley or trailer used on the work complies with all applicable legislative requirements, DPTI Rail Access Procedure and all relevant standards.

This standard provides the minimum requirements for rail trolleys and trailers to operate on the AMPRN. It does not obviate the need for a site specific Safety Management Plan or Work Instruction to ensure that the rail trolley or trailer can undertake its work tasks safely at a particular worksite.

Rail trolleys and trailers that do not meet the minimum requirements in this document are not permitted to operate on the AMPRN. Approval may be granted by DPTI, under specified conditions, for a rail trolley and trailer to access the AMPRN for the purposes of examination and testing.

2. Purpose

The purpose of this standard is to specify the minimum certification requirements for rail trolleys and trailers accessing and operating on the AMPRN.

3. Scope

This standard applies to all rail trolleys and trailers accessing and operating on the AMPRN broad gauge (1600mm) and standard gauge (1435mm) mainlines, depots, sidings and worksites.

This standard does not cover road-rail trailers. Separate approval to operate a road-rail trailer is required.

This standard is not intended to provide the requirements for designing and manufacturing rail trolleys and trailers.

Refer to *PTS-MS-10-RS-GUD-00000095 Requirements for Road-Rail Vehicles Accessing and Operating on the AMPRN* for certification of road-rail vehicles on the AMPRN.

Refer to *RS4-DOC-000885 Requirements for Track Machines Accessing and Operating on the AMPRN.*

4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form	FO-RC-OE-897 (KNet # 9053676)
Infrastructure Maintenance Rolling Stock Certificate Template	FO-RC-OE-666 (KNet # 7068833)
Rail Trolley and Trailer Documents Review Checklist	FO-RC-OE-851

	(KNet # 10324875)
Rail Trolley and Trailer General Condition Examination Checklist	FO-RC-OE-869 KNet # 10324959
Assessment for On Track Plant in 25kV/600V OHW Areas	FO-AM-GE-898 (KNet # 9380110)
DPTI Infrastructure Maintenance Rolling Stock Register	KNet # 7068447
DPTI Rolling Stock Examiners Register (Internal Use Only)	KNet # 10790167
DPTI Approving Engineers Register (Internal Use Only)	KNet # 12942824
Warning Stickers for Vehicles in a 25kV Overhead Wiring System	TP4-DRG-000025 (KNet # 9464438)
Infrastructure Maintenance Rolling Stock Annual Confirmation	FO-RC-OE-975 (KNet # 10712235)

5. References

- Rail Safety National Law (SA) Act 2012
- Rail Safety National Law National Regulations 2012
- AS 7509.4 Railway Rolling Stock - Dynamic Behavior - Part 4 - Infrastructure Maintenance Rolling Stock
- AS 7508 Track Forces and Stresses
- AS 7505 Signalling Detection Interface
- AS 1906 Retroreflective materials and devices for road traffic control purposes
- EN13309 Construction Machinery – Electromagnetic Compatibility of Machines with Internal Power Supply
- EN50121-3-1 Railway Applications – Electromagnetic Compatibility – Part 3-1: Rolling Stock – Train and Complete Vehicle
- EN50121-3-2 Railway Applications – Electromagnetic Compatibility – Part 3-2: Rolling Stock – Apparatus
- GM/RT2304 Equipotential Bonding of Rail Vehicles to Running Rail Potential
- GM/RC2514 Recommendations for Equipotential Bonding of Rail Vehicles to Running Rail Potential
- ISO11451 Series Road Vehicles – Vehicle Test Methods for Electrical Disturbances from Narrowband Radiated Electromagnetic Energy
- ISO11452 Series Road Vehicles – Component Test Methods for Electrical Disturbances From Narrowband Radiated Electromagnetic Energy
- European Automotive EMC Directive 2004/104/EC
- RISSB Glossary of Railway Terminology - Guideline
- 243-A3-96-054 MP2 Tread Profile for 2000/3000/4000 series
- RS2-DRG-300000 MGTP Wheel Profile for Tram line
- PTS-MS-10-XM-STD-00000084 Rail Car Wheel Inspection and Defects Standard
- PTS-MS-10-XM-STD-00000092 Tram Car Wheel Inspection and Defects Standard
- PTS-MS-10-TR-STD-00000047 Structural Clearances - Design and Rating - Train
- PTS-MS-10-RS-GUD-00000095 Requirements for Road rail Vehicles accessing and operating on the Adelaide Rail and Tram Network (KNet # 7097710)
- RS4-DOC-000885 Requirements for Track Machines Accessing and Operating on the AMPRN (KNet # 10609126)
- CP-TS-975 Structural Clearances (Tram)
- 200-A3-82-1658 Maximum Outline for Metropolitan Rolling Stock and Equipment - 1600 mm Gauge
- RS4-DOC-001299 Static Twist Test for Rolling Stock (KNet # 12545472)

6. Acronyms

ACRONYM	FULL NAME
AMPRN	Adelaide Metropolitan Passenger Rail Network
DC	Direct Current
DPTI	Department of Planning, Transport and Infrastructure
EMC	Electromagnetic compatibility
MGTP	Modified Glenelg Tramline Profile
MP2	Modified Profile 2
NDT	Non Destructive Testing
OHW	Overhead Wiring
PM	Project Manager
PRW	Person Responsible for the Works
PRES	Person Responsible for Electrical safety
RISSB	Railway Industry Safety Standards Board
SWMS	Safe Work Method Statement

7. Definitions

TERM	DEFINITION
Infrastructure Maintenance Rolling Stock[1]	Track machines and road-rail vehicles. Also known as on 'track vehicles'.
Maximum Rated Load	Total of vehicle's tare mass and any additional loading for material or equipment etc., which is not to be exceeded.
Rail Trailer	Rail trailers are non-powered infrastructure maintenance vehicles fitted with rail wheels and hauled by a road-rail vehicle or other approved powered vehicle using an approved drawbar. They are used by maintenance and construction staff to transfer material and equipment or move inspection devices along the railway line.
Rail Trolley	Rail trolleys are non-powered infrastructure maintenance vehicles that are moved on and off track by hand and are used by maintenance and construction staff to transfer material and equipment along the railway line.
Road-Rail Trailer	Road-Rail trailers are small non-powered vehicles essentially for operation on road but fitted with rail wheels such that they can be hauled on rail by a road/rail vehicle or infrastructure maintenance vehicle. Road-rail trailers are not covered by this document – separate assessment and approval is required.
Tare Mass[1]	The mass of the vehicle in the lightest condition under which it will be operated.
Tram	The standard gauge tram tracks between Glenelg and Hindmarsh.
Train	The broad gauge tracks on the AMPRN.
Travel Mode	Where the rail trolley or trailer is travelling to and from the worksite.
Work Mode	Where the rail trolley or trailer is performing its work function within the worksite and under an authorised work possession/authority.

[1] RISSB National Guideline Glossary of Railway Terminology

8. Roles and Responsibilities

8.1. General

There are generally two ways in which a rail trolley or trailer can be introduced onto the AMPRN:

- Through planned construction or maintenance works where an external contractor, who owns or hires a rail trolley or trailer, is engaged by DPTI for the works.
- Purchasing and maintaining of a new or modified DPTI owned rail trolley or trailer by DPTI Rail Maintenance.

For construction and maintenance works it is the responsibility of the DPTI Project Manager (PM) or Person Responsible for the Works (PRW) to ensure that all rail trolleys and trailers to be used for their works are certified before accessing and operating on the AMPRN.

It is not intended that external contractors apply directly to DPTI to have their rail trolleys and trailers certified in anticipation of work on the AMPRN.

For DPTI owned rail trolleys and trailers the DPTI Rail Fleet Manager/Maintainer is responsible for ensuring that all rail trolleys and trailers are certified before accessing and operating on the AMPRN.

8.2. DPTI Project Manager / Person Responsible for the Works (PM/PRW)

It is the responsibility of the DPTI PM/PRW to obtain all of the documentation and information for certification from the Applicant/Owner, follow the process described in Appendix 8 and:

- ensure that completed *FO-RC-OE-897 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) is obtained and forwarded to the Rolling Stock Engineering Group;
- ensure all required supporting documentation in accordance with *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) is obtained and forwarded to the Approving Engineer for review;
- ensure that completed *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) and all supporting documentation are obtained and forwarded to the Rolling Stock Engineering Group;
- ensure that completed *FO-AM-GE-898 Assessment for On Track Plant in 25kV/600V OHW Areas* (Appendix 5) is obtained and forwarded to the OHW Electrical Engineer for review;
- ensure that the rail trolley or trailer to undergo the general condition examination by an approved Rolling Stock Examiner and ensure *FO-RC-OE-869 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) is completed and forwarded to the Rolling Stock Engineering Group;
- ensure that completed *FO-RC-OE-975 Infrastructure Maintenance Rolling Stock Annual Confirmation (Appendix 7)* is obtained and forwarded to the DPTI Rolling Stock Engineering Group; and
- ensure that any issues arising from the document review and general condition examination are addressed.

8.3. Applicant/Owner

For planned construction and maintenance works the application form *FO-RC-OE-897 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) and *FO-RC-OE-975 Infrastructure Maintenance Rolling Stock Annual Confirmation (Appendix 7)* is to be completed by the external contractor engaged for the works and forwarded to PM/PRW. The form has provision for supply of the rail trolley or trailer owner details where the contractor is hiring the machine.

For DPTI owned rail trolleys and trailers both the application form and annual confirmation are to be completed by the DPTI Rail Fleet Manger/Maintainer.

8.4. DPTI Rail Fleet Manager/Maintainer

It is the responsibility of the DPTI Rail Fleet Manager/Maintainer to obtain all of the documentation and information required for certification and:

- ensure that *FO-RC-OE-897 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) is completed and forwarded to the Rolling Stock Engineering Group;
- ensure all required supporting documentation in accordance with *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) is obtained and forwarded to the Approving Engineer for review;
- Ensure that completed *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) and all supporting documentation are obtained and forwarded to the Rolling Stock Engineering Group;
- ensure that completed *FO-AM-GE-898 Assessment for On Track Plant in 25kV/600V OHW Areas* (Appendix 5) is obtained and forwarded to the OHW Electrical Engineer for review;
- ensure that the rail trolley or trailer to undergo the general condition examination by an approved Rolling Stock Examiner and ensure *FO-RC-OE-869 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) is completed and forwarded to the Rolling Stock Engineering Group;
- ensure that *FO-RC-OE-975 Infrastructure Maintenance Rolling Stock Annual Confirmation (Appendix 7)* is completed and forwarded to the DPTI Rolling Stock Engineering Group; and
- ensure that any issues arising from the document review and general condition examination are addressed.

8.5. Approving Engineer

An Approving Engineer shall be appointed jointly by the Rolling Stock Engineering Manager and Manager, Track & Civil Engineering. The Approving Engineer is responsible for carrying out the assessment of documentation in accordance with *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2). The Approving Engineer shall have:

- Experience in assessing rolling stock against standards;
- Demonstrated knowledge and experience of the RISSB (*AS7500* series) rolling stock standards;

- Demonstrated knowledge and experience of the Rail Safety National Law (SA) Act 2012;
- No undeclared conflicts of interest;
- Knowledge of risk management.

The Approving Engineer may be from the DPTI Rolling Stock Engineering Team as nominated by the Rolling Stock Engineering Manager.

It is the responsibility of the Approving Engineer to review the documentation provided by the PM/PRW or DPTI Fleet Manager/Maintainer against the requirements of this standard and complete *FO-RC-OE-851 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2). For documentation relating to track engineering the Approving Engineer shall consult with the Manager Track & Civil Engineering.

If the Approving Engineer determines that the documentation provided is not satisfactory the PM/PRW or DPTI Fleet Manager/Maintainer is to be advised and requested to update and resubmit. If the documentation is satisfactory the completed checklist is to be forwarded to the Rolling Stock Engineering Group. The Approving Engineer shall provide recommendations on restrictions or limitations for the operation of rail trolleys and trailers on the AMPRN.

8.6. Rolling Stock Engineering Manager / Manager, Track & Civil Engineering

It is the responsibility of the Rolling Stock Engineering and the Manager Track & Civil Engineering to:

- jointly ensure all applications for certification of rail trolleys and trailers are assessed in accordance with this standard;
- jointly appoint an Approving Engineer;
- jointly sign all of the approval certificates with any restrictions or limitations;

The Rolling Stock Engineering Manager or delegate shall:

- receive the application pack for the certification or re-certification of rail trolleys and trailers via rolling stock engineering mail box: DPTI.RollingstockEngineering@sa.gov.au
- approve the appointment of the Rolling Stock Examiners undertaking the general condition examination;
- select an Approving Engineer from the Register;
- determine the expiry date and inserting expiry date on the certificate;
- ensure that the certificate is prepared and arrangements made for the certificate and labels to be displayed on the rail trolley or trailer; a copy of certificate is to be forwarded to the PM/PRW or DPTI Fleet Manager/Maintainer;
- maintain a register of all Infrastructure Maintenance Rolling Stock, this register shall contain details of rolling stock type, owner, certification/recertification dates;

- ensure that the Infrastructure Maintenance Rolling Stock Register is updated at every new certification or re-certification; and

- maintain a register of all Rolling Stock Examiners and Approving Engineers

8.7. OHW Electrical Engineer

It is the responsibility of the OHW Electrical Engineer to:

- Ensure that all applications for certification of rail trolleys and trailers are assessed for operation under 25kV electrified train lines and 600V electrified tram lines in accordance with Sections 13.1 and 13.2 of this standard;

- review and sign the assessment form *FO-AM-GE-898 Assessment for On Track Plant in 25kV/600V OHW Areas* (Appendix 5) and provide the conditions under which a rail trolley and trailer may access and operate under live 25kV electrified train and 600V tram lines;

- ensure that the signed form is forwarded to the Rolling Stock Engineering Group for preparation and issuing of the certificate; and

- arrange for issuing and displaying, in prominent positions on the rail trolley or trailer, of the appropriate labels that detail the conditions for operating on 25kV electrified train lines or 600V electrified tram lines

8.8. Manager Rail Technical and Operational Assurance

The Manager, Rail Technical and Operational Assurance shall:

- maintain this standard and all associated forms and checklists;

- update this standard or associated form or checklist when required;

- ensure that the current standard and all associated forms and checklists are available via intranet and internet to internal staff and external contractors; and

- advise internal staff and external contractors on interpretation of the standard and requirements for rail trolleys and trailers to access and operate on the AMPRN under this standard

8.9. Rolling Stock Examiner

The Rolling Stock Examiner is responsible for carrying out the general condition examination in accordance with *FO-RC-OE-869 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) and assessment in accordance with *FO-AM-GE-898 Assessment for On Track Plant in 25kV/600V OHW Areas.*

Only Rolling Stock Examiners approved by DPTI are permitted to undertake the general condition examination.

The roles of Rolling Stock Examiner and the Approving Engineer cannot be performed by a same person.

9. General

9.1. Rail Trolley

- Rail Trolleys are to be moved manually only and are not permitted to be towed, pushed or pulled by any powered maintenance vehicles or equipment. If trolleys are required to be towed by a road-rail vehicle or other approved powered vehicle then the trolley is to be treated as a rail trailer for certification purposes.
- Rail trolleys are to be moved at walking pace only.
- A rail trolley shall, at all times when on track, be accompanied by enough workers to control and remove the rail trolley from the track as required.
- Rail trolleys are not permitted to be used for conveying personnel.
- Rail trolleys do not require lights to be fitted.

9.2. Rail Trailer

- A rail trailer may be operated as a trolley. When operating only as a trolley, a trailer shall be treated as a trolley for certification purposes.
- Rail trailers are not permitted to be used for conveying personnel.
- A rail trailer shall, at all times when on track, be accompanied by enough workers, or other means, to control and remove the trailer from the track as required.
- The maximum speed for rail trailers on the AMPRN is 30 kph or at reduced speed under any special conditions of certification. At level crossings, facing switches, V and K crossings the speed shall be reduced to 10 km/hr.

  Notwithstanding the above all posted track speeds shall be strictly observed.
- Reversing the towing vehicle with a rail trailer attached is not permitted unless carried out at walking pace under the direct supervision of a pilot located on the ground.
- A rail trailer shall be fitted with automotive tail and stop lights compatible with the towing vehicle.
- A rail trailer shall have a safety chain in addition to a drawbar.
- A rail trailer shall only be towed by a towing vehicle that has been certified by DPTI. The total load on a rail trailer, including tare, shall not exceed the towing capacity of the towing vehicle at any time.

10. Vehicle Outline

The static profile of the rail trolley or trailer shall not exceed the limits shown in the following diagrams under any condition of loading or wear:

- 200-A3-82-1658: Maximum Outline for Metropolitan Rolling stock & Equipment – 1600mm Gauge.
- The DPTI Tram Rolling stock Outline drawing to be developed for the tram system (Flexity vehicle outline shall be used in the interim).

The above profiles do not take account of the dynamic and kinematic effects associated with the movement of a rail trolley or trailer and reference should be made to PTS-MS-10-TR-STD-00000047: Structural Clearances – Design and Rating – Train and CP-TS-975: Structural Clearances for Tram. The kinematic envelop of the rail trolley or trailer can be determined using the one of the following methods:

- Full application of the above standards
- A combination of the application of the above standard and, where applicable, actual performance and measurements of the dynamic behavior of the rail trolley or trailer.

Details of the rail trolley or trailer kinematic envelope shall be provided.

11. Wheels

The following wheel profiles are used on the AMPRN:

- Train – Modified Profile 2 (MP2)
- Tram – Modified Glenelg Tramline Profile (MGTP)

The use of wheel profiles other than the above may be acceptable but details shall be provided prior to certification.

The rail wheels on the rail trolley or trailer shall comply with all of the defects requirements of PTS-MS-10-XM-STD-00000084: Rail car wheel inspection and defects standard for train and PTS-MS-10-XM-STD-00000092: Tram wheel inspection and defects standard for the tramline.

12. Signal Detection Interface

A rail trolley or trailer has much lower wheel loads than conventional rolling stock which makes their ability to ‘short circuit or ‘shunt’ track circuits unreliable and introduces the risk that they will not consistently activate signals or level crossings or show up on the network control system.

Accordingly it is preferred for non-electrified lines that the rail trolley and trailer has electrical isolation between the wheels on adjacent rails to ensure that it cannot activate track circuits and associated signals. Evidence shall be provided that resistance between the wheels on the same axle shall be greater than 20,000 ohms in accordance with *AS 7505 Signalling Detection Interface*.

For non-insulated rail trolleys or trailers evidence shall be provided that resistance between the wheels on the same axle is less than 1 milliohm (0.001 ohm) at 1 volt in accordance with *AS 7505 Signalling Detection Interface.*

Both insulated and non-insulated rail trolleys and trailers are only allowed to operate under appropriate track possession authorities and are not permitted to run as a ‘train’ operating under signal indication.

13. Operation on Electrified Train and Tram Lines

13.1. Operation on 25kV Electrified Train Lines

This section sets out the requirements for rail trolley and trailer to operate on live 25kV electrified lines on the AMPRN, for the purpose of:

- Reducing the risk of electric shock;
- Controlling any current flow through mechanical components to ensure safety.

13.1.1. Equipotential Bonding

Rail trolley or trailer must be correctly bonded if they are to travel under live 25kV OHW. This is to prevent the dangers of touch potential to personnel from different voltages and to provide a suitable short circuit path in the event of contact with live OHW equipment.

Any rail trolley or trailer not correctly bonded is not permitted to travel or work under 25kV OHW unless:

- OHW equipment is Isolated and Earthed;
- a Person Responsible for Electrical Safety (PRES) accompanies the rail trolley or trailer and holds an Electrical Work Permit; and
- a Warning Notice (*TP4-DRG-000025*) stating this restriction shall be placed at all access points to the rail trolley or trailer.

Rail wheel axles shall not be insulated if a rail trolley or trailer is travelling or working under live 25kV OHW equipment.

Rail trolley or trailer shall be equipotentially bonded in accordance with the requirements of Group Standard *GM/RT2304* Equipotential Bonding of Rail Vehicles to Running Rail Potential.

Group Standard *GM/RC2514 Recommendations for Equipotential Bonding of Rail Vehicles to Running Rail Potential* sets out good practice for compliance with *GM/RT2304* in this area. The accepted figures for non-insulation are listed below:

- A maximum r.m.s. fault current of 15kA for 1 second, and a peak current of 37.5kA in the first half cycle.
- The strategy for re-closing of the traction supply circuit breakers after a fault has occurred is firstly immediate re-closure, followed by an investigation if further tripping occurs.

13.1.1.1. Testing

The safety bond continuity tests shall be carried out on each rail trolley or trailer to check a conductive path exists between all external conductive parts of the vehicle and each rail. The maximum impedance between any such part of the rail trolley or trailer and each rail shall not exceed 0.15 ohms. This testing will be carried out annually as part of the rail trolley or trailers maintenance and servicing regime.

The maximum impedance between any external conductive part of the rail trolley or trailer and each rail should be such that no dangerous touch potentials exist in the event of an electrical fault on the rail trolley and trailer or a fault where live OHW comes into contact with the rail trolley or trailer.

13.1.2. Electromagnetic Compatibility

Rail trolley and trailer can be affected by the electromagnetic interference produced by OHW equipment. Likewise electrical equipment fitted to rail

trolley or trailer can generate electromagnetic interference that could affect railway signalling and communication equipment including that of other adjacent railway infrastructure owners i.e. ARTC.

A rail trolley or trailer not complying with the directions below is not permitted to travel or work under 25kV OHW unless the OHW equipment is isolated and earthed and a Person Responsible for Electrical Safety (PRES) accompanies the rail trolley or trailer and holds an Electrical Work Permit. A Warning Notice (*TP4-DRG-000025*) stating this restriction shall be placed at all access points to the rail trolley or trailer.

13.1.2.1. Immunity of Rail Trolleys and Trailers from an Electrified Environment

The component and sub-component parts of the rail trolley or trailer shall be assessed for susceptibility and immunity to electromagnetic induced currents. Each electrical or electronic circuit box shall be assessed for the potential to malfunction under an induced current, and the effect such a malfunction would have on safety, or intended operation of the equipment.

Any electrical or electronic circuit which is considered vulnerable to EMC shall comply with the requirements of *EN 50121-3-2 Railway Applications – Electromagnetic Compatibility – Part 3-2: Rolling Stock – Apparatus*, clause 8, tables 7, 8 and 9, or equivalent.

- If electrical equipment is added to, or removed from, an electrical system of 28V or less, then provided this equipment has already been separately tested further testing is not required.

- Where electrical equipment of 28V or less requires testing, the equipment can be tested to the *ISO 11452 Series Road Vehicles – Component Test Methods for Electrical Disturbances from Narrowband Radiated Electromagnetic Energy* of standards or the complete rail trolley or trailer tested to *ISO 11451 Series Road Vehicles – Vehicle Test Methods for Electrical Disturbances from Narrowband Radiated Electromagnetic Energy*.

- Where a previously untested rail trolley or trailer exists with an electrical system of 28V or less, then the rail trolley or trailer should be tested to automotive EMC tests set out in *ISO 11451* series.

- Where a previously untested rail trolley or trailer exists with an electrical system of greater than 28 V then the rail trolley or trailer should be tested to *EN 50121-3-1*.

- If electrical equipment of greater than 28V is to be added to an existing design, then the equipment must be tested to *EN 50121-3-2* or the complete rail trolley or trailer be tested to *EN 50121-3-1.*

- Demonstration of compliance with *EN 50121-3-1* or *EN 50121-3-2* may either be by testing or a letter of compliance signed by a technically competent electromagnetic compatibility engineer.

13.1.3. Assessment

All rail trolley and trailer documentation shall be assessed using the relevant criteria detailed in *FO-AM-GE-898 Assessment for On Track Plant in 25kV/600V OHW Areas (*Appendix 5).

13.2. Operation on Live 600V Electrified Tram Lines

Rail trolleys and trailers are only permitted to access and operate on 600V electrified tramline if:

1. The 600V electrified tram lines are isolated and earthed for the area in which the vehicle is travelling or working and is accompanied by a PRES who holds a Certificate of Isolation for the OHW.

OR

2. The rail trolley or trailer fully complies with Section 13.1 of this document and a vehicle specific Safe Work Method Statement (SWMS) is available that details how that vehicle will safely travel and work under live 600V OHW equipment.

14. Twist Test

14.1. Rail Trolley

A twist test is not required for rail trolleys.

14.2. Rail Trailer

A twist test is not required for a rail trailer with one axle fitted with rail wheels.

All other rail trailers shall be tested for torsional resilience. The twist test shall be carried out in accordance with *Engineering Instruction RS4-DOC-001299 Static Twist Test for Rolling Stock.*

- The maximum wheel unloading permitted is 60%.
- A value for wheel unloading exceeding 60% will mean the vehicle has failed the twist test and is not permitted to access or operate on the AMPRN. Permission to operate may be granted, under restricted conditions, following a detailed assessment.

15. Maximum Rated Load

The maximum rated load for a rail trolley or trailer, including tare, shall comply with the manufacturer's recommendations and shall not be exceeded under any circumstances.

15.1. Track Forces and Stresses

Vehicles with a P2 force which exceeds 100 KN per wheel shall comply with *AS 7508 Track Forces and Stresses*.

16. Marking and Identification

All rail trolleys and trailers shall be fitted with compliance plates that display the following information:

- Manufacturer
- Date manufactured
- Model/serial number/VIN
- Tare weight in kg#
- Maximum rated load in kg#

All lettering is to be clearly visible.

Items marked # above shall be displayed on both of the sides, or both ends, of the rail trolley or trailer.

For Rail Trailers only
A rail trailer shall have reflective tape on both of the sides and at each end. The colour of the tape should be white or yellow and shall contrast with the colour of the trailer.

Class 1A reflective material compliant with *AS/NZS 1906.2* or class 1W reflective material compliant with *AS/NZS 1906.1* shall be used.

17. Brakes

17.1. Rail Trolley

The rail trolley shall be fitted with a failsafe braking system that ensures that the trolley cannot run away during all stages of on and off tracking.

A brake shall be fitted that will hold a fully loaded trolley indefinitely on a 1 in 30 grade.

Brakes must be fitted to the tread of at least two wheels or on discs on at least one axle. If the trolley has more than two axles then at least 50% of the wheels (and axles) must be braked.

The brake shall require a positive action to disengage the brake and maintain the brake in the disengaged position. Once the positive action is removed the brake must automatically reapply/reengage. The system shall not be capable of being locked in the disengaged position.

The fully loaded rail trolley shall be capable of stopping within 5 metres from walking pace on dry level track.

Details of the braking system shall be provided.

17.2. Rail Trailer

All rail trailers shall have some form of brake that will automatically apply and remain applied if the trailer is not connected to, or becomes disconnected from, the towing vehicle. The system must be failsafe and would typically be air or hydraulically operated. When travelling or in operation, the rail trailer brake must be capable of being applied using a signal from the towing vehicle i.e. truck-trailer airbrake system.

A brake test for the combined loading of the rail trailer and the towing vehicle shall meet the brake test requirements detailed in DPTI document *PTS-MS-10-RS-GUD-00000095: Requirements for road rail vehicles accessing and operating on the Adelaide Rail and Tram Network*.

The rail trailer brakes must be fitted to the tread of at least two wheels or on discs on at least one axle. If the trailer has more than two axles then at least 50% of the wheels (and axles) must be braked.

Details of the braking system shall be provided.

18. Drawbars (Trailers Only)

Drawbars must have an engineer's certificate that validates the design, manufacture and any modifications that have been carried out. The validation shall ensure compliance with all relevant standards and regulations.
Drawbars shall be fitted with compliance plates that display the following information:

- Manufacturer
- Date manufactured
- Model/serial number

- Maximum safe hauling load in kg

All lettering is to be clearly visible.

19. Lifting on and off track

19.1. Rail Trolley

All rail trolleys must be able to be lifted on and off track manually in accordance with approved safe working methods.

19.2. Rail Trailer

Most but not all rail trailers will be able to be lifted on and off track manually. Where the manual method is not possible details of the mechanical means to be used shall be provided i.e. lifting points, type of crane etc. Where a crane or earth moving machine is utilised to on and off track a rail trailer they shall comply with relevant Australian Standards.

20. Stability

The rail trolley or trailer shall be stable under all conditions and evidence of this shall be incorporated in engineer's report.

21. Certification and Re-certification

21.1. Certification

In order to be certified all rail trolleys and trailers shall comply with all of the requirements of this standard. The Certification Application Form *FO-RC-OE-897 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) must be completed by the applicant/owner to enable the rail trolley or trailer to be assessed.

The process to be followed for certification of rail trolley and trailer is shown in the flow chart in Appendix 8. This flow chart is intended to specify the action to be taken by the person responsible at each stage of the process toward certification.

The Application Form (See Appendix 1), Document Review Checklist (See Appendix 2), General Condition Examination (See Appendix 3), 25kV/600V Assessment (See Appendix 5) and all associated test documentations shall be provided by the PM/PRW or DPTI Rail Fleet Manager/Maintainer. For identification purposes photographs of the front, back and sides of the rail trolley or trailer shall be provided.

A maintenance schedule and service history of a rail trolley or trailer shall be provided for any certification or re-certification application for access and operation on the AMPRN.

If elements of the required evidence are missing the PM/PRW or DPTI Rail Fleet Manager/Maintainer will be requested to supply the missing information for further review.

Once certified the rail trolley or trailer shall be issued with a certificate, *FO-RC-OE-666 Infrastructure Maintenance Rolling Stock Certificate Template* (Appendix 4), and a certification label as shown in Appendix 6. The expiry date on a certificate shall be inserted by the Rolling Stock Engineering Manager. Any restrictions or limitation on the certificate are applied by Rolling Stock Engineering Manager and/or Manager Track and Civil Engineering following the recommendations provided by an Approving Engineer.

DPTI Infrastructure Maintenance Rolling Stock Register shall be updated at every new certification or re-certification.

Rail Trolleys or trailers may be certified for a maximum 1 year period or period determined by the Rolling Stock Engineering Manager. Following the first year of certification an annual automatic renewal for a maximum of 2 further years (i.e. total 3 years including first certification year) may be granted in accordance with the Section 21.3.The label must be attached to the rail trolley or trailer in a prominent position. The rail trolley or trailer operator must follow all restrictions or conditions as shown in the certificate and/or label. DPTI reserves the right to request the certificate and/or label for audit purposes at any time.

21.1.1. Certification of Gauge Convertible Rail Trolleys and Trailers

An advice must be sought from Rolling Stock Engineering Manager for the application of the certification of gauge convertible rail trolleys and trailers.

21.2. General Condition Examination

The general condition examination in accordance with *FO-RC-OE-869 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) is not intended to be an exhaustive assessment of all of the operating systems, components and sub-components of the rail trolley or trailer. The examination enables DPTI to assess the rail trolley or trailer to determine if its general condition is consistent with the level of

compliance attributed by the PM/PRW or DPTI Rail Fleet Manager/Maintainer in the document review. The examination is primarily visual in nature, with some checking, measuring and testing of critical functions and structural elements.

21.2.1. External Contractor Supplied Rail Trolleys and Trailers

All external contractor supplied rail trolleys and trailers are required to undergo the general condition examination. Any issues arising from the examination will need to be corrected before the rail trolley or trailer can be certified.

21.2.2. DPTI Owned Rail Trolleys and Trailers

DPTI has contracted out the maintenance of its rail trolleys and trailers and it is an expectation that the contractual arrangement will include a maintenance regime that ensures that the requirement for a general condition assessment is satisfied by regular assessments and examinations. The Rolling Stock Engineering Manager and the Manager Track & Civil Engineering shall determine the requirement for a general condition assessment.

21.2.3. Rolling Stock Examiner

Only Companies approved by DPTI are permitted to carry out the general condition examination. The companies must demonstrate the following competencies:

- Qualified in a relevant trade with knowledge of the purpose and safety requirements applicable to rail trolleys and trailers.
- Complete understanding of the construction, functionality, maintenance and inspection requirements of rail specific guiding and/ or traction and braking equipment fitted to rail trolleys and trailers.
- Competent in assessing and identifying rail wheel damage and profile condition.
- Familiarity with all operating controls and safety functions installed on the vehicle.
- Familiarity with all interface requirement related to DPTI's overhead wiring system.
- Capable of competently checking the operation of the rail equipment.
- Competent in carrying out the testing requirements necessary to establish compliance with the specified acceptance criteria.

21.3. Re-certification and De-Certification

Where the certification is required to be extended past the initial 1 year period the Applicant / Owner may use form, *FO-RC-OE-975 Infrastructure Maintenance Rolling Stock Annual Confirmation* (Appendix7), confirm annually (on the initial certification anniversary) the following:

1. That servicing is up to date and being carried out in accordance with the schedule provided at the initial certification.
2. No modifications have been undertaken to the vehicle since the initial certification application.
3. The vehicle has not been involved in any accidents or incidents since the initial certification application.
4. A twist test has been carried out annually since the initial certification.
5. Crack testing of the stub axle has been carried out annually since initial certification. (Only for road-rail vehicles)

6. Equipotential bonding testing has been carried out annually since the initial certification.
7. All records are available for audit.
8. The vehicle is fit for purpose.

On receipt of the completed form the certification of the rail trolley or trailer will carried over for a further 1 year period or period determined by the Rolling Stock Engineering Manager and the rail trolley and trailer applicant/owner advised accordingly. A 4 weeks grace period may be granted for the submission of the annual confirmation following the initial expiry date. During this period the rail trolley or trailer shall not be allowed to access and operate on the AMPRN. Unless directed otherwise by the Rolling Stock Engineering Manager there is no requirement for a new Application Form, Documents Review Checklist or General Condition Examination Checklist to be submitted with the Annual Confirmation Form.

A full certification will be required at the end of the 2 automatic renewals period. Full recertification will require submission of a new Application Form, Documents Review Checklist and General Condition Examination Checklist in accordance with Section 21.1.

The rail trolley or trailer may be de-certified at any time at the discretion of DPTI. Typical circumstances where this may occur include, but are not limited to:

- Failure to provide the annual confirmation at the end of full certification period.
- A safety incident e.g. runaway, collision etc.
- Evidence of lack of maintenance.
- Substantial modification without notification to DPTI.

In the event of de-certification; the certificate and certification label shall be removed from the rail trolley or trailer and it will not be permitted to access and operate on the AMPRN.

Following a safety incident (e.g. runaway, collision), a rail trolley or trailer shall be removed from the AMPRN until an inspection has been carried out. Any identified issues shall be addressed before the rail trolley or trailer is allowed to resume access and operation on the AMPRN.

21.4. Pre-work Inspection

Evidence must be provided that there is a pre–works start checklist for the rail trolley or trailer. It is a requirement that the pre-work inspection be carried out daily or before the rail trolley or trailer commences any operation on the AMPRN. All defects noted during the inspection must be recorded, reported and rectified before work commences.

DPTI reserves the right to audit the pre–work inspection records and log books at any time the rail trolley or trailer is operating on the AMPRN.

21.5. Modifications

Where substantial modifications are made to a rail trolley or trailer it will require recertification. A modification is considered substantial if it impacts in any way on the ability of the rail trolley or trailer to operate safely on the AMPRN. Where there is doubt as to the whether the modifications are substantial clarification shall be sought from the Rolling Stock Engineering Manager.

All modifications made to the rail trolley or trailer that have the potential to affect its ability to be fit for purpose shall be notified to DPTI for assessment.

21.6. Submission Time Frame

All submissions related to certification or recertification of rail trolleys or trailers are to be emailed to the following email address:

DPTI.RollingstockEngineering@sa.gov.au

Submission of all documentation in a single emailed pack at least 10 working days prior to any planned work on the AMPRN is essential for an efficient and smooth certification process.

Appendix 1 Rail Trolley and Trailer Certification Application Form

Form

Rail Commissioner

ROAD-RAIL VEHICLE AND RAIL TROLLEY & TRAILER CERTIFICATION APPLICATION FORM

Applicant Name	
Applicant Contact Details	
Vehicle Name and Type	
Vehicle Registration Number	**Vehicle Serial Number:**
Vehicle Details	Make: Year: ☐Crane ☐EWP ☐Excavator ☐Backhoe ☐Front end loader Number of Axles: Axle Spacing (mm): ☐ Insulated ☐ Non - Insulated ☐ Both (Adjustable) Road Rail Manufacturer: Road Rail Serial Number: (F) (R)
Vehicle Dimensions (mm)	Height: Width: Length:
Vehicle Maximum Speed (km/hr)	Vehicle Mass (tonnes) — Tare: GVM:
Vehicle Owner **If different to Applicant**	
Vehicle Owner Contact Details	
Reason for Accessing AMPRN	☐Electrifi[illegible] Ne[illegible] ☐Non-Electrified Networ[illegible] ☐[illegible]
Vehicle Gauge	☐[illegible]ad [illegible] ☐St[illegible]55 mm ☐G[illegible] Convertible
Certification Type	☐New Certification ☐Recerti[illegible]
Vehicle Type	☐1 [illegible] Traction and [illegible]ng directly on rail wheels [illegible] — ☐2 High Ride: Traction and braking on road wheels, in contact with rail wheels. Use of Friction drums or roller (Not Preferred) — ☐3 Low Ride: Traction and braking on road wheels; rail wheels are for guidance only
Declaration I declare that the information submitted is correct to the best of my knowledge and complies with DPTI document *PTS-MS-10-RS-GUD-00000095 Requirements for Road-Rail Vehicles accessing and operating on Adelaide train and tram system* or document *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Rail & Tram Network.*	
Name	
Signature	**Date**
Contact Details	
Acknowledged by DPTI Project Manager / Person Responsible for the Works	Name: Title: Signature: Date:

Appendix 2 Rail Trolley and Trailer Document Review Checklist

Checklist

Rail Commissioner

RAIL TROLLEY AND TRAILER DOCUMENTS REVIEW CHECKLIST

RAIL TROLLEY AND TRAILER DETAILS			
Review Date		Vehicle Registration Number	
Vehicle Type			
Vehicle Make		Vehicle Year	
Vehicle Model / Serial No		Drawbar Model / Serial No	
Drawbar Manufacturer		Year	
Applicant / Owner			
Reviewed By	Name		Title

Item No.	Description	Compliant			Details of Supporting Evidence	Non-Compliance Details and Control
		Yes	No	N/A		
Approvals and Engineering Reports		✓	x	✓		
1	Does the rail trolley or trailer have a current engineering report and certificate demonstrating overall structural integrity?	☐	☐	☐		
2	Does the drawbar have a current engineering report and certificate demonstrating the structural integrity of the drawbar? (For Trailers only)	☐	☐	☐		
3	Is there evidence that issues resulted in the failure of a pervious application for certification have been addressed?	☐	☐	☐		
4	Is there evidence provided that the rail trolley or trailer has been approved for use in other railway networks?	☐	☐	☐		
5	Has the rail trolley or trailer/drawbar been subject to substantial modification from the original design since last being certified on the AMPRN?	☐	☐	☐		
6	Is there evidence provided that the modification has been the subject of an engineering report?	☐	☐	☐		
7	Is the modification compatible with the AMPRN?	☐	☐	☐		
Maintenance Records		✓	x	✓		
8	Is there evidence provided of a [illegible] regime for the rail trolley or trailer?	☐	☐	☐		
9	Is there evidence provided that the rail trolley or trailer is being maintained to that regime?	☐	☐	☐		
10	Are the maintenance records up to date?	☐	☐	☐		
11	Is there any deferred work that may affect the operation of the rail trolley or trailer on the AMPRN?	☐	☐	☐		
12	Is there evidence of a pre-work [illegible]?	☐	☐	☐		
Vehicle Outline		✓	x	✓		
13	Is there evidence provided that the static vehicle outline complies with section 10 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
14	Is there evidence provided that the kinematic vehicle outline complies with section 10 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?* (For Trailers only)	☐	☐	☐		
Rail Guidance System		✓	x	✓		
15	Is there evidence that the rail trolley or trailer wheels complies with section 11 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
16	Is there evidence that the wheel profile is compatible with the AMPRN's infrastructure?	☐	☐	☐		
17	For insulated rail trolley or trailer is there evidence that the rail trolley or trailer has effective isolation in accordance with section 12 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
18	For non- insulated rail trolley or trailer is there evidence that the rail trolley or trailer meets the resistance requirements in accordance with section 12 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
19	Is there evidence of a static weigh test (tare weight)?	☐	☐	☐		
20	Is there evidence that the rail trolley or trailer will not introduce unacceptable track forces into the AMPRN?	☐	☐	☐		

Operation on Live Electrified Lines		✓	×	✓		
21	Is there evidence provided in accordance with section 13 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
Maximum Rated Load		✓	×	✓		
22	Is there evidence that the maximum rated load complies with the manufacturer's recommendations?	☐	☐	☐		
Braking		✓	×	✓		
23	Is there evidence that the braking system complies with section 17 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		
Stability		✓	×	✓		
24	Is there evidence (engineer's report) that the rail trolley or trailer will be stable under all operating conditions?	☐	☐	☐		
Controls and Lights				✓		
25	Is there evidence that the rail trailer is fitted with compl… lighting compatible with the towing vehicle?			☐		
26	Is there evidence that the rail trailer is fitted … a… safety chain in addition to an appro…	☐	☐	☐		
General		✓	×	✓		
27	Are rail trolleys or trailers' photogra… provided in accordance with section 21 of *TC4-DOC-000362 Requirements for Rail Trolleys and Trailers Accessing and Operating on the AMPRN?*	☐	☐	☐		

The documentation supplied by th… …en reviewed against the requirements detailed in the chec…

☐ Satisfactory

☐ Unsatisfactory

Approving Engineer

Name (Print) **Contact Details**	**Signature**	**Date**
Comments	List all special operational conditions or restrictions	

Appendix 3 Rail Trolley and Trailer General Condition Examination

Checklist

Rail Commissioner

DPTI

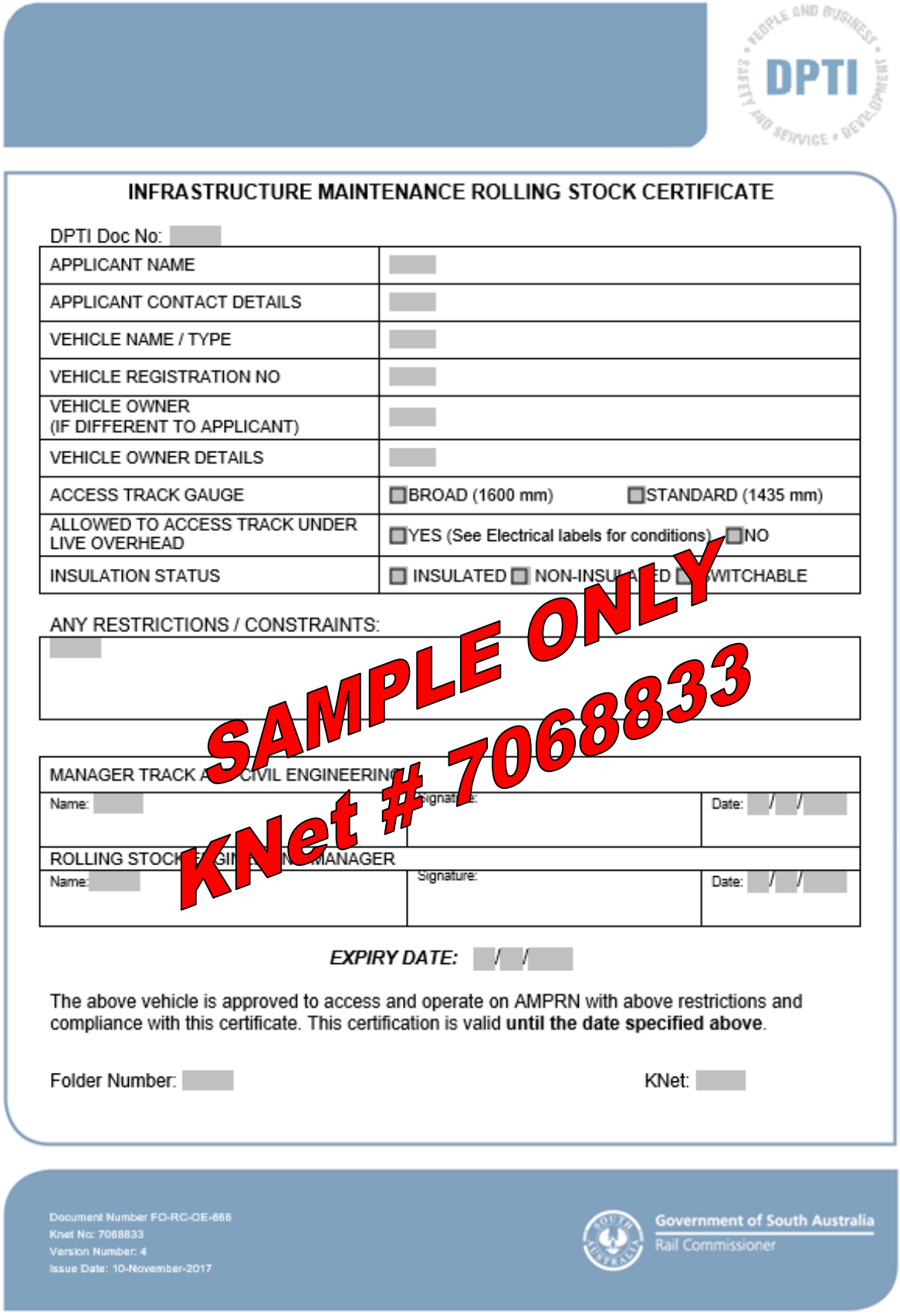
RAIL TROLLEY AND TRAILER GENERAL CONDITION EXAMINATION

Review Date	/ /	Vehicle Registration Number	
Vehicle Type			
Vehicle Make		Vehicle Year	
Vehicle Model / Serial No		Drawbar Model / Serial No	
Drawbar Manufacturer		Year	
Applicant / Owner			
Inspected by	Name:	Title:	
Company Details			

		1st Inspection		2nd Inspection		N/A
		Pass	Fail	Pass	Fail	
Item No.	**General inspection**	✓	×	✓	×	✓
1	Check maintenance inspection records for correct use and reporting of faults.	☐	☐	☐	☐	☐
2	Check vehicle is fitted with compliance plates.	☐	☐	☐	☐	☐
3	Check drawbar is fitted with a compliance plate.	☐	☐	☐	☐	☐
	Vehicle Frame and Body	✓	×	✓	×	✓
4	Check vehicle frame for cracks, wear, corrosion, lubrication and structural damage.	☐	☐	☐	☐	☐
5	Check for bolt tightness.	☐	☐	☐	☐	☐
6	Check drawbar and couplings [illegible] mechanical latches/locks etc (For Trailers only)	☐	☐	☐	☐	☐
7	Check the safety chain [illegible] wear,corrosion or damage (For Trailers only)	☐	☐	☐	☐	☐
	Hydraulic/Air System (For Trailers only)	✓	×	✓	×	✓
8	Check hydraulic/air system and associated equipment for correct function/damage	☐	☐	☐	☐	☐
9	Check valves and [illegible]	☐	☐	☐	☐	☐
	Controls/Lights (For Trailers only)	✓	×	✓	×	✓
10	Check all lighting for correct function/damage.	☐	☐	☐	☐	☐
11	Check for correct fitting and colour of reflective tapes.	☐	☐	☐	☐	☐
	Rail wheels	✓	×	✓	×	✓
12	Check rail wheels for condition and correct dimensions.	☐	☐	☐	☐	☐
13	Check wheel studs and nuts for corrosion, damage.	☐	☐	☐	☐	☐
14	Check web, flange and tread for cracks, wear, spalling and profile condition.	☐	☐	☐	☐	☐
15	Check wheel bearings for wear and damage.	☐	☐	☐	☐	☐
16	Check stub axle arrangement for wear and damage (if fitted).	☐	☐	☐	☐	☐

	Wheel Alignment				✓	×	✓	×	✓
17	Check back to back gauge of front and rear wheels. (back to back 1522 – 1525 for heavy rail and 1387-1389 for tram) Measured at the wheel/rail interface				☐	☐	☐	☐	☐
	Back to back gauge – front		Back to back gauge – rear						
	mm		mm						
18	Check the wheel alignment toe-in (3 mm is maximum limit).								☐
	Wheel	Left	Right	Difference					
	Front	mm	mm	mm	☐	☐	☐	☐	
	Rear	mm	mm	mm	☐	☐	☐	☐	
19	Conduct twist test to satisfy maximum wheel unloading requirement (For Trailers only)								☐
	Vehicle Side	Maximum % wheel unloading							
		Front rail wheel	Rear rail wheel						
	Left				☐	☐	☐	☐	
	Right				☐	☐	☐	☐	
	Brakes				✓	×	✓	×	✓
20	Test braking system for correct function of rail trailers ensure the signal mechanism used to check towing vehicle is operating correctly				☐	☐	☐	☐	☐
21	Conduct brake test to satisfy minimum requirement of stopping the fully loaded rail trailer within 5 metres.				☐	☐	☐	☐	☐
22	Test parking brake holding ability for fully loaded rail trailers or trailers on 1 in 30 grade.				☐	☐	☐	☐	☐
	Others				✓	×	✓	×	✓
23	Check the static vehicle tare				☐	☐	☐	☐	☐
This vehicle has been examined for general condition against the above checklist					☐ Satisfactory ☐ Unsatisfactory				
Comments:									
Authorised Representative of Rolling Stock Examiner									
Name (Print)		Signature		Date	/ /				
Position		Contact Details							

Appendix 4 Rail Trolley and Trailer Certificate Template



INFRASTRUCTURE MAINTENANCE ROLLING STOCK CERTIFICATE

DPTI Doc No:

APPLICANT NAME	
APPLICANT CONTACT DETAILS	
VEHICLE NAME / TYPE	
VEHICLE REGISTRATION NO	
VEHICLE OWNER (IF DIFFERENT TO APPLICANT)	
VEHICLE OWNER DETAILS	
ACCESS TRACK GAUGE	☐ BROAD (1600 mm) ☐ STANDARD (1435 mm)
ALLOWED TO ACCESS TRACK UNDER LIVE OVERHEAD	☐ YES (See Electrical labels for conditions) ☐ NO
INSULATION STATUS	☐ INSULATED ☐ NON-INSULATED ☐ SWITCHABLE

ANY RESTRICTIONS / CONSTRAINTS:

MANAGER TRACK & CIVIL ENGINEERING		
Name:	Signature:	Date: / /
ROLLING STOCK ENGINEERING MANAGER		
Name:	Signature:	Date: / /

SAMPLE ONLY
KNet # 7068833

EXPIRY DATE: / /

The above vehicle is approved to access and operate on AMPRN with above restrictions and compliance with this certificate. This certification is valid **until the date specified above**.

Folder Number: KNet:

Document Number FC-RC-OE-666
Knet No: 7068833
Version Number: 4
Issue Date: 10-November-2017

Government of South Australia
Rail Commissioner

Appendix 5 Assessment for On Track Plant in 25kV/600V OHW Areas

Form

Rail Commissioner

ASSESSMENT FOR ON TRACK PLANT IN 25kV/600V OHW AREAS

PLANT/VEHICLE DETAILS					
Vehicle Make:		Vehicle Year:		Vehicle Rego:	

ASSESSMENT CRITERIA – BY EXAMINING COMPANY				
Reference	Compliance		Evidence	Comments
	Yes	No		
Equipotential Bonding	☐	☐		
Electromagnetic Compatibility	☐	☐		
Protection from Overhead Line Equipment	☐	☐		
Working and Travelling Under Live Overhead Equipment	☐	☐		
On and Off Tracking Vehicles	☐	☐		

Sign Off			
Name:		Title:	
Company Details:			
Signature:		Date:	

APPROVAL CONDITIONS – BY PRINCIPAL ENGINEER (OHW)				
Conditions / Limitations	Yes	No	N/a	Comments
Prohibited from 25kV/600V OHW Areas unless Isolated, Earthed and Certificate of Isolation issued to PRES	☐	☐	☐	
Permitted to Travel in live 25kV/600V OHW Areas with Restrictions	☐	☐	☐	
Permitted to Travel in live 25kV/600V OHW without Restrictions	☐	☐	☐	
Permitted to Work in live 25kV/600V OHW Areas	☐	☐	☐	
Permitted to On/Off Tracking in live 25kV/600V OHW Areas	☐	☐	☐	

Sign Off			
Name:		Title:	
Signature:		Date:	
Valid Until:			

Appendix 6 Certification Label

Appendix 7 Annual Certificate Confirmation Form

Checklist

Rail Commissioner

DPTI

INFRASTRUCTURE MAINTENANCE ROLLING STOCK ANNUAL CONFIRMATION

Date: / /

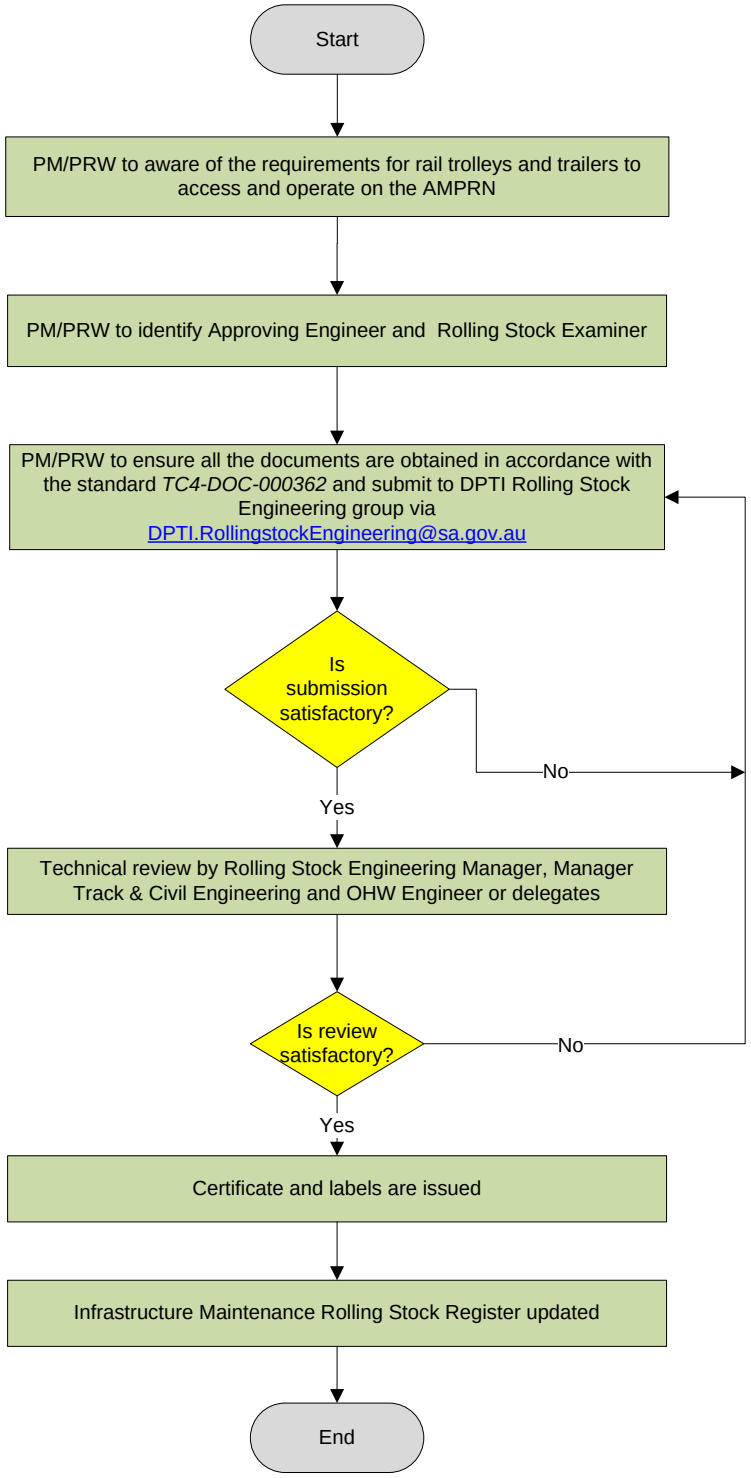
Vehicle Name/Type	
Vehicle Registration Number/Unique Identifier	
Date of Initial Certificate	

I/We confirm the following:

Item No.		Pass ✓	Fail ✗
1	That regular servicing has been carried out and includes all of the check items detailed in the *General Condition Examination form* used at the initial certification.	☐	☐
2	No modifications have been undertaken to the vehicle [illegible] certification.	☐	☐
3	The vehicle has not been involved in any accidents or incidents since the initial certification.	☐	☐
4	Twist test has been carried out annually since the initial certification.	☐	☐
5	Crack testing of the [illegible] been carried out annually since the initial certification (only for road-rail vehicles)	☐	☐
6	Equipotential bonding testing has been carried out annually since the initial certification.	☐	☐
7	All records are [illegible]	☐	☐
8	The vehicle is [illegible] for purpose.	☐	☐

Name:	Signature:	Date: / /
Company Details:		
Acknowledged by DPTI Project Manager / Person Responsible for the Works		
Name :	Signature:	Date: / /
Title :		

Appendix 8 Certification and Approval Process Flow Chart



FO-RC-OE-897 Certification Application Form - **Applicant / Owner**

FO-RC-OE-851 Documents Review Checklist - **Approving Engineer (Appointed by DPTI)**

FO-RC-OE-869 General Condition Examination - **Rolling Stock Examiner (Approved by DPTI)**

FO-AM-GE-898 Assessment for 25kV/600V OHW Areas - **Rolling Stock Examiner (Approved by DPTI)**

FO-RC-OE-975 Annual Confirmation – **Applicant / Owner**

FO-RC-OE-666 Certificate – **DPTI Rolling Stock Engineering**

Note: PM/PRW will be replaced by DPTI Rail Fleet Manager / Maintainer for DPTI internal vehicles