

Requirements for Rail Trailer-Trolleys Accessing and Operating on the Adelaide Tram Network

Engineering
Standard

ENG-ENS-NIL-0028

Document Control

Table 1: Torrens Connect Document Control

V	Date	Description of Change	Review	Accountable	Endorse
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Definitions

Table 2: Definitions

Term	Definitions
ATN	Adelaide Tram Network
DC	Direct Current
DIT	Department of Infrastructure and Transport
EMC	Electromagnetic compatibility
MGTP	Modified Glenelg Tramline Profile
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
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

Term	Definitions
	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.
TC	Torrens Connect
Tram	The standard gauge tram tracks between Glenelg and Hindmarsh.
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.
Term	Definition

¹ RISSB National Guideline Glossary of Railway Terminology



1 Introduction

Torrens Connect (TC) operates and maintains the Adelaide Tram Network (ATN) on behalf of The Department of Infrastructure and Transport (DIT) under its Rail Accreditation. This standard is intended to ensure that the introduction of rail trolleys and trailers onto the ATN 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 TC owned and Contractor supplied rail trolleys and trailers accessing and operating on the ATN under TC Rail Accreditation. Where an Access Agreement is in place, enabling a third party to undertake work on the ATN 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, TC Rail Access Procedure and all relevant standards.

This standard provides the minimum requirements for rail trolleys and trailers to operate on the ATN. 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 ATN. Approval may be granted by TC, under specified conditions, for a rail trolley and trailer to access the ATN 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 ATN.

3 Scope

This standard applies to all rail trolleys and trailers accessing and operating on the ATN standard gauge (1435mm) mainlines, depot, sidings, and worksites.

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

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

Refer to *ENG-ENS-NIL-0023 Requirements for Road-Rail Vehicles Accessing and Operating on the Adelaide Tram Network* for certification of road-rail vehicles on the ATN.

Refer to *ENG-ENS-NIL-0041 Requirements for Track Machines Accessing and Operating on the Adelaide Tram Network*.

4 References

- Rail Safety National Law (SA) Act 2012
- Rail Safety National Law National Regulations 2012
- AS 7509.4 Railway Rolling Stock - Dynamic Behaviour - 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
- RS2-DRG-300000 MGTP Wheel Profile for Tram line
- ENG-ENS-NIL-0026 Tram Car Wheel Inspection and Defects Standard
- ENG-ENS-NIL-0023 Requirements for Road Rail Vehicles accessing and operating on the Adelaide Rail and Tram Network
- ENG-ENS-NIL-0041 Requirements for Track Machines Accessing and Operating on the *Adelaide Tram Network*
- ENG-ENS-NIL-0007 Structural Clearances (Tram)
- ENG-PRO-NIL-0002 Static Twist Test for Rolling Stock

5 Roles and Responsibilities

5.1 General

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

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

For construction and maintenance works it is the responsibility of the TC 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 ATN.

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

For TC owned rail trolleys and trailers the TC Head of Assets is responsible for ensuring that all rail trolleys and trailers are certified before accessing and operating on the ATN.

5.2 TC Project Manager / Person Responsible for the Works (PM/PRW)

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

- Ensure that completed *ENG-FRM-RSG-0005 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) is obtained and forwarded to the Rolling Stock Engineer;
- Ensure all required supporting documentation in accordance with *ENG-FRM-RSG-0010 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) is obtained and forwarded to the Approving Engineer for review;
- Ensure that completed *ENG-FRM-RSG-0010 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) and all supporting documentation are obtained and forwarded to the Rolling Stock Engineer;
- Ensure that completed *ENG-FRM-RSG-0003 Assessment for On Track Plant in 600V OHW Areas* (Appendix 5) is obtained and forwarded to the Infrastructure Engineer for review;
- Ensure that the rail trolley or trailer to undergo the general condition examination by an approved Rolling Stock Examiner and ensure *ENG-FRM-RSG-0007 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) is completed and forwarded to the Rolling Stock Engineer;
- Ensure that completed *ENG-FRM-RSG-0002 Infrastructure Maintenance Rolling Stock Annual Confirmation* (Appendix 7) is obtained and forwarded to the Rolling Stock Engineer; and
- Ensure that any issues arising from the document review and general condition examination are addressed.

5.3 Applicant/Owner

For planned construction and maintenance works the application form *ENG-FRM-RSG-0005 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) and *ENG-FRM-RSG-0002 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 DIT owned rail trolleys and trailers both the application form and annual confirmation are to be completed by the TC Head of Assets.

5.4 TC Head of Assets

It is the responsibility of the TC Head of Assets to obtain all of the documentation and information required for certification and:

- Ensure that *ENG-FRM-RSG-0005 Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form* (Appendix 1) is completed and forwarded to the Rolling Stock Engineer;
- Ensure all required supporting documentation in accordance with *ENG-FRM-RSG-0010 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) is obtained and forwarded to the Approving Engineer for review;
- Ensure that completed *ENG-FRM-RSG-0010 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2) and all supporting documentation are obtained and forwarded to the Rolling Stock Engineer;
- Ensure that completed *ENG-FRM-RSG-0003 Assessment for On Track Plant in 600V OHW Areas* (Appendix 5) is obtained and forwarded to the Infrastructure Engineer for review;
- Ensure that the rail trolley or trailer to undergo the general condition examination by an approved Rolling Stock Examiner and ensure *ENG-FRM-RSG-0007 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) is completed and forwarded to the Rolling Stock Engineer;
- Ensure that *ENG-FRM-RSG-0002 Infrastructure Maintenance Rolling Stock Annual Confirmation* (Appendix 7) is completed and forwarded to the Rolling Stock Engineer; and
- Ensure that any issues arising from the document review and general condition examination are addressed.

5.5 Approving Engineer

An Approving Engineer shall be appointed jointly by the Rolling Stock Engineer and Infrastructure Engineer. The Approving Engineer is responsible for carrying out the assessment of documentation in accordance with *ENG-FRM-RSG-0010 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; and
- Knowledge of risk management.

It is the responsibility of the Approving Engineer to review the documentation provided by the PM/PRW or TC Head of Assets against the requirements of this standard and complete *ENG-FRM-RSG-0010 Rail Trolley and Trailer Documents Review Checklist* (Appendix 2). For documentation relating to track engineering the Approving Engineer shall consult with the Infrastructure Engineer.

If the Approving Engineer determines that the documentation provided is not satisfactory the PM/PRW or TC Head of Assets 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 Engineer. The Approving Engineer shall provide recommendations on restrictions or limitations for the operation of rail trolleys and trailers on the ATN.

5.6 Rolling Stock Engineer / Infrastructure Engineer

It is the responsibility of the Rolling Stock Engineer and the Infrastructure Engineer 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 Engineer or delegate shall:

- Receive the application pack for the certification or re-certification of rail trolleys and trailers via rolling stock engineering mailbox: RS_Eng@torrensconnect.com.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 TC Head of Assets;
- 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

5.7 Infrastructure Engineer

It is the responsibility of the Infrastructure Engineer to:

- Ensure that all applications for certification of rail trolleys and trailers are assessed for operation under 600V electrified tram lines in accordance with Section 10.1 of this standard;
- Review and sign the assessment form *ENG-FRM-RSG-0003 Assessment for On Track Plant in 600V OHW Areas* (Appendix 5) and provide the conditions under which a rail trolley and trailer may access and operate under live 600V tram lines;
- Ensure that the signed form is forwarded to the Rolling Stock Engineer 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 600V electrified tram lines

5.8 Head of HSQE

The Head of HSQE 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 ATN under this standard

5.9 Rolling Stock Examiner

The Rolling Stock Examiner is responsible for carrying out the general condition examination in accordance with *ENG-FRM-RSG-0007 Rail Trolley and Trailer General Condition Examination Checklist* (Appendix 3) and assessment in accordance with *ENG-FRM-RSG-0003 Assessment for On Track Plant in 600V OHW Areas*.

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

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

6 General

6.1 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

6.2 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 ATN 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 TC. The total load on a rail trailer, including tare, shall not exceed the towing capacity of the towing vehicle at any time

7 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:

- A TC Tram Rolling Stock Outline drawing is still 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 *ENG-ENS-NIL-0007: Structural Clearances for Tram*. The kinematic envelope 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 behaviour of the rail trolley or trailer

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

8 Wheels

The following wheel profiles are used on the ATN:

- 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 *ENG-ENS-NIL-0026: Tram wheel inspection and defects standard*.

9 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 have electrical isolation between the wheels on adjacent rails to ensure that it cannot activate track circuits and associated signals. Evidence shall be provided that the isolation will be effective and that the direct current (DC) electrical resistance between the wheels on the same axle is 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 'tram operating under signal indication'.

10 Operation on Electrified Tram Lines

10.1 Operation on Live 600V Electrified Tram Lines

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

- 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

- 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

11 Twist Test

11.1 Rail Trolley

A twist test is not required for rail trolleys.

11.2 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 *ENG-PRO-NIL-0002 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 ATN. Permission to operate may be granted, under restricted conditions, following a detailed assessment

12 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.

12.1 Track Forces and Stresses

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

13 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.

14 Brakes

14.1 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.

14.2 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 TC document *ENG-ENS-NIL-0023: Requirements for road rail vehicles accessing and operating on the Adelaide 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.

15 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.

16 Lifting on and off track

16.1 Rail Trolley

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

16.2 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.

17 Stability

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

18 Certification and Re-certification

18.1 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 *ENG-FRM-RSG-0005 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), *600V Assessment* (See Appendix 5) and all associated test documentations shall be provided by the PM/PRW or TC Head of Assets. 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 ATN.

If elements of the required evidence are missing the PM/PRW or TC Head of Assets will be requested to supply the missing information for further review.

Once certified the rail trolley or trailer shall be issued with a certificate, *ENG-FRM-RSG-0001 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 Engineer. Any restrictions or limitation on the certificate are applied by Rolling Stock Engineer and/or Infrastructure Engineer following the recommendations provided by an Approving Engineer.

TC 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 Engineer. 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 18.3. 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. TC reserves the right to request the certificate and/or label for audit purposes at any time.

18.1.1 Certification of Gauge Convertible Rail Trolleys and Trailers

Any advice must be sought from Rolling Stock Engineer for the application of the certification of gauge convertible rail trolleys and trailers.

18.2 General Condition Examination

The general condition examination in accordance with *ENG-FRM-RSG-0007 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 TC 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 TC Head of Assets in the document review. The examination is primarily visual in nature, with some checking, measuring and testing of critical functions and structural elements.

18.2.1 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.

18.2.2 TC Owned Rail Trolleys and Trailers

TC 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 Engineer and the Infrastructure Engineer shall determine the requirement for a general condition assessment.

18.2.3 Rolling Stock Examiner

Only Companies approved by TC 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 TC'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.

18.3 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, *ENG-FRM-RSG-0002 Infrastructure Maintenance Rolling Stock Annual Confirmation* (Appendix 7), to 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 be carried over for a further 1 year or period determined by the Rolling Stock Engineer and the rail trolley and trailer applicant/owner advised accordingly. A 4-week 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 ATN. Unless directed otherwise by the Rolling Stock Engineer 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 recertification 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 18.1.

The rail trolley or trailer may be de-certified at any time at the discretion of TC. 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 TC.

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 ATN.

Following a safety incident (e.g. runaway, collision), a rail trolley or trailer shall be removed from the ATN 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 ATN.

18.4 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 ATN. All defects noted during the inspection must be recorded, reported and rectified before work commences.

TC 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 ATN.

18.5 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 ATN. Where there is doubt as to the whether the modifications are substantial clarification shall be sought from the Rolling Stock Engineer.

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 TC for assessment.

18.6 Submission Time Frame

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

RS_Eng@torrensconnect.com.au

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

19 Associated Documents

Table 3: Associated Documents

Document ID	Title
ENG-FRM-RSG-0005	Road-Rail Vehicle and Rail Trolley & Trailer Certification Application Form
ENG-FRM-RSG-0001	Infrastructure Maintenance Rolling Stock Certificate Template
ENG-FRM-RSG-0010	Rail Trolley and Trailer Documents Review Checklist
ENG-FRM-RSG-0003	Assessment for On Track Plant in 600V OHW Areas
ENG-FRM-RSG-0007	Rail Trolley and Trailer General Condition Examination Checklist
ENG-REG-NIL-0002	Infrastructure Maintenance Rolling Stock Register
	Rolling Stock Examiners Register (Internal Use Only)
	Approving Engineers Register (Internal Use Only)
ENG-FRM-RSG-0002	Infrastructure Maintenance Rolling Stock Annual Confirmation

I. Appendix A

Rail Trolley and Trailer Certification Application Form



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:	
	<input type="checkbox"/> Crane <input type="checkbox"/> EWP <input type="checkbox"/> Excavator <input type="checkbox"/> Backhoe <input type="checkbox"/> Front End Loader		
	Number of Axles:	Ade Spacing (mm):	
	<input type="checkbox"/> Insulated <input type="checkbox"/> Non-Insulated <input type="checkbox"/> Both (Adjustable)		
	Road-Rail Manufacturer:	Road-Rail Serial Number: (E)	(R)
Vehicle Dimensions (mm)	Height:	Width:	Length:
Vehicle Maximum Speed (km/hr)		Vehicle Mass (tonnes)	
Vehicle Owner (If different to Applicant)			
Vehicle Owner Contact Details			
Reason for Accessing AMPRN	<input type="checkbox"/> Electrified Network <input type="checkbox"/> Non-Electrified Network <input type="checkbox"/> Both		
Vehicle Gauge	<input type="checkbox"/> Standard (1435 mm) <input type="checkbox"/> Gauge Convertible		
Certification Type	<input type="checkbox"/> New Certification <input type="checkbox"/> Recertification		
Vehicle Type	<input type="checkbox"/> 1 Self-Powered Traction and braking directly on rail wheels	<input type="checkbox"/> 2 High Ride Traction and braking on road wheels, in contact with rail wheels. Use of Friction drums or roller (Not Preferred)	<input type="checkbox"/> 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 TC document <i>ENG-ENS-NIL-0023 Requirements for Road-Rail Vehicles Accessing and Operating on the Adelaide Tram Network</i> , or document <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> .			
Name			
Signature		Date	
Contact Details			
Acknowledged by TC Project Manager / Person Responsible for the Works	Name:	Title:	
	Signature:	Date:	

II. Appendix B

Rail Trolley and Trailer Document Review Checklist

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2	Does the drawbar have a current engineering report and certificate demonstrating the structural integrity of the drawbar? (For Trailers only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3	Is there evidence that issues resulted in the failure of a previous application for certification have been addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	Is there evidence provided that the rail trolley or trailer has been approved for use in other railway networks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	Has the rail trolley or trailer/drawbar been subject to substantial modification from the original design since last being certified on the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6	Is there evidence provided that the modification has been the subject of an engineering report?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7	Is the modification compatible with the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Maintenance Records		✓	x	✓		
8	Is there evidence provided of a valid maintenance regime for the rail trolley or trailer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9	Is there evidence provided that the rail trolley or trailer is being maintained to that regime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
10	Are the maintenance records up to date?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
11	Is there any deferred work that may affect the operation of the rail trolley or trailer on the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
12	Is there evidence of a pre-work inspection regime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Vehicle Outline		✓	x	✓		
13	Is there evidence provided that the static vehicle outline complies with Section 7 of <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
14	Is there evidence provided that the kinematic vehicle outline complies with Section 7 of <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> ? (For Trailers only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rail Guidance System		✓	x	✓		
15	Is there evidence that the rail trolley or trailer wheels complies with Section 8 of <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
16	Is there evidence that the wheel profile is compatible with the <i>Adelaide Tram Network's</i> infrastructure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
17	For insulated rail trolley or trailer is there evidence that the rail trolley or trailer has effective isolation in accordance with Section 10 of <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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 10 of <i>ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network</i> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
19	Is there evidence of a static weigh test (tare weight)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

20	Is there evidence that the rail trolley or trailer will not introduce unacceptable track forces into the Adelaide Tram Network?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Operation on Live Electrified Lines		✓	x	✓		
21	Is there evidence provided in accordance with Section 10 of ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Maximum Rated Load		✓	x	✓		
22	Is there evidence that the maximum rated load complies with the manufacturer's recommendations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Braking		✓	x	✓		
23	Is there evidence that the braking system complies with Section 14 of ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Stability		✓	x	✓		
24	Is there evidence (Engineer's report) that the rail trolley or trailer will be stable under all operating conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Controls and Lights		✓				
25	Is there evidence that the rail trailer is fitted with complaint lighting compatible with the towing vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
26	Is there evidence that the rail trailer is fitted with an approved safety chain in addition to an approved drawbar?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
General			x	✓		
27	Are rail trolleys or trailers' photographs provided in accordance with Section 18 of ENG-ENS-NIL-0047 Requirements for Rail Trolleys and Trailers Accessing and Operating on the Adelaide Tram Network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Sample Only

The documentation supplied by the applicant has been reviewed against the requirements detailed in the checklist.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory		
Approving Engineer			
Name	Signature	Date	
Contact Details			
Comments - List all special operational conditions or restrictions			

III. Appendix C

Rail Trolley and Trailer General Condition Examination



Rail Trolley and Trailer General Condition Examination Checklist

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

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

IV. Appendix D

Rail Trolley and Trailer Certificate Template



Infrastructure Maintenance Rolling Stock Certificate

Criteria	Details
Applicant Name	
Applicant Contact Details	
Vehicle Name / Type	
Vehicle Registration Number	
Vehicle Owner (if different to applicant)	
Vehicle Owner Details	
Access Track Gauge	<input type="checkbox"/> Standard (1435 mm)
Allowed to access track under live overhead	<input type="checkbox"/> Yes (See electrical labels for <u>conditions</u>) <input type="checkbox"/> No
Insulation Status	<input type="checkbox"/> Insulated <input type="checkbox"/> Non-Insulated <input type="checkbox"/> Switchable

Any Restrictions / Constraints:

Infrastructure Manager		
Name:	Signature:	Date:
Rolling Stock Reliability Engineer		
Name:	Signature:	Date:

EXPIRY DATE:

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

Certificate Number:



V. Appendix E

Assessment for On Track Plant in 600V OHW Areas



Assessment for On-Track Plant in 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	<input type="checkbox"/>	<input type="checkbox"/>		
Electromagnetic Compatibility	<input type="checkbox"/>	<input type="checkbox"/>		
Protection from Overhead Line Equipment	<input type="checkbox"/>	<input type="checkbox"/>		
Working and Travelling under Live Overhead Equipment	<input type="checkbox"/>	<input type="checkbox"/>		
On and Off Tracking Vehicles	<input type="checkbox"/>	<input type="checkbox"/>		
Sign Off				
Name:		Title:		
Company Details:				
Signature:		Date:		

Approval Conditions – by TC Infrastructure Engineer				
Conditions / Limitations	Yes	No	N/A	Comments
Prohibited from 600V OHW areas unless Isolated, Earthed and Certificate of Isolation issued to PRES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permitted to Travel in live 600V OHW areas with Restrictions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permitted to Travel in live 600V OHW areas without Restrictions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permitted to Work in live 600V OHW areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permitted to <u>On</u> /Off Tracking in live 600V OHW areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sign Off				
Name:		Title:		
Signature:		Date:		
Valid Until:				

VI. Appendix F

Certification Label

ADELAIDE TRAM NETWORK CERTIFIED


VEHICLE ID.....

VALID UNTIL.....

RESTRICTIONS.....

.....

STANDARD GAUGE


Torrens Connect[®]

VII. Appendix G

Annual Certificate Confirmation Form



Infrastructure Maintenance Rolling Stock Annual Certificate

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

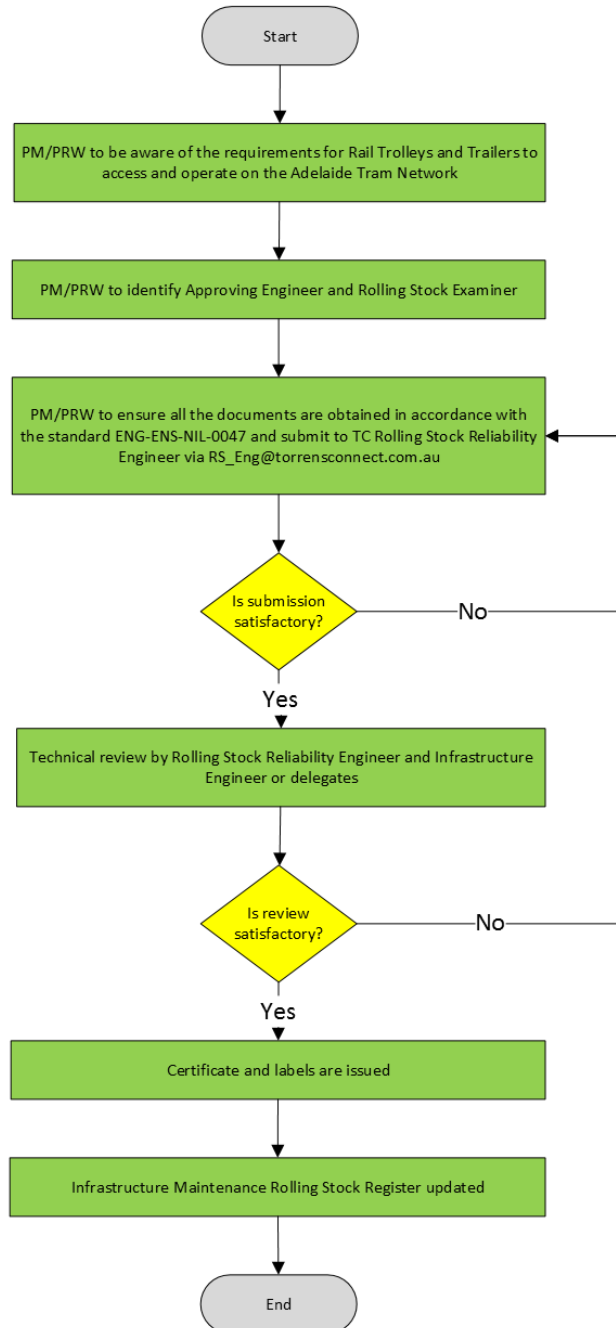
I / We confirm the following:

Item No.		Pass	Fail
		✓	✗
1	That regular servicing has been carried out and includes <u>all</u> of the check items detailed in the <i>General Condition Examination form</i> used at the initial certification.	<input type="checkbox"/>	<input type="checkbox"/>
2	No modifications have been undertaken to the vehicle since the initial certification.	<input type="checkbox"/>	<input type="checkbox"/>
3	The vehicle has not been involved in any accidents or incidents since the initial certification.	<input type="checkbox"/>	<input type="checkbox"/>
4	Twist test has been carried out annually since the initial certification.	<input type="checkbox"/>	<input type="checkbox"/>
5	Crack testing of the sub axle has been carried out annually since the initial certification. (Only for road-rail vehicles)	<input type="checkbox"/>	<input type="checkbox"/>
6	Equipotential bonding testing has been carried out annually since the initial certification.	<input type="checkbox"/>	<input type="checkbox"/>
7	All records are available for audit.	<input type="checkbox"/>	<input type="checkbox"/>
8	The vehicle is fit for purpose.	<input type="checkbox"/>	<input type="checkbox"/>

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

VIII. Appendix H

Certification and Approval Process Flow Chart



- ENG-FRM-RSG-0005 Certification and Application Form - **Applicant/Owner**
- ENG-FRM-RSG-0010 Documents Review Checklist - **Approving Engineer (appointed by TC)**
- ENG-FRM-RSG-0007 General Condition Examination - **Rolling Stock Examiner (approved by TC)**
- ENG-FRM-RSG-0003 Assessment for 600V OHW Areas - **Rolling Stock Examiner (approved by TC)**
- ENG-FRM-RSG-0002 Annual Confirmation - **Applicant/Owner**
- ENG-FRM-RSG-0001 Certificate - **Rolling Stock Reliability Engineer**