

Engineering Standard

Rolling Stock

CRN RS 007

MINIMUM OPERATING REQUIREMENTS FOR INFRASTRUCTURE MAINTENANCE TROLLEYS, TRAILERS AND PORTABLE PLANT

Version: 1.0

Issued: August, 2020

Owner: Principal Rolling Stock and Plant Engineer
Approved by: Drew Palmer
Authorised by: James Zeaiter

Disclaimer. This document was prepared for use on the CRN Network only. John Holland Rail Pty Ltd makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems or work or operation. It is the document user's sole responsibility to ensure that the copy of the document it is viewing is the current version of the document as in use by JHR. JHR accepts no liability whatsoever in relation to the use of this document by any party, and JHR excludes any liability which arises in any manner by the use of this document.

Copyright. The information in this document is protected by Copyright and no part of this document may be reproduced, altered, stored or transmitted by any person without the prior consent of JHG.

Document control

Revision	Date of Approval	Summary of change
1.0		For publication

Summary of changes from previous version

Section	Summary of change

Contents

1	Introduction.....	4
1.1	About this standard.....	4
1.2	Rolling stock standards suite.....	4
1.3	Standard development	5
1.4	Australian Standards for Railway Rolling Stock	5
1.5	Vehicle design	6
1.6	Trolleys, trailers and portable plant authorised to operate on the CRN	6
1.7	Acceptance of new trolleys, trailers and portable plant.....	7
1.8	Change of trolleys, trailers and portable plant design or operating conditions	7
1.9	Vehicle de-certification	7
1.10	Testing and certification of trolleys, trailers and portable plant	8
2	Trolleys.....	9
2.1	General.....	9
2.2	Trolley body.....	9
2.3	Wheelset back-to-back measurement.....	9
2.4	Brakes.....	9
2.5	Powered trolleys	9
2.6	Marking and identification.....	10
2.7	Lights	10
2.8	Compliance plates	10
2.9	Vehicle performance.....	11
3	Trailers.....	12
3.1	General	12
3.2	Trailer body.....	12
3.3	Rail wheels	12
3.4	Wheelset back-to-back measurement.....	12
3.5	Static vehicle twist test	12
3.6	Transferring to and from rail operation (road/rail trailers).....	12
3.7	Brakes.....	13
3.8	Drawbars	13
3.9	Maximum speed	14
3.10	Marking and identification.....	14
3.11	Lights	14
3.12	Compliance plates	15
3.13	Vehicle performance.....	15
4	Support frames.....	16
4.1	General.....	16
4.2	Certification of support frames.....	16
4.3	Brakes.....	16
4.4	Powered support frames	16
Appendix A	16

1 Introduction

1.1 About this standard

This standard is an infrastructure maintenance vehicle interface standard, covering the minimum technical requirements for the operation of trolleys, trailers and portable plant on the NSW Country Regional Rail Network (CRN).

John Holland Rail (JHR) has established interface requirements pertaining to all rail vehicles operating on the CRN. The requirements in this standard shall be read in conjunction with CRN RS 008, General Interface Requirements for Rolling Stock and CRN RS 010, Vehicle Acceptance Test and Inspection Requirements.

Users of this interface standard, be it owner/operators, designers, manufacturers, suppliers or maintainers of rail vehicles, or their component parts, are responsible for making their own enquiries in relation the applicability of this standard, as well as related national standards, guidelines and codes of practice, to their own situation or need. This standard was prepared with an awareness of known road/rail vehicle interface risks and seeks to address each of those risks, however it is the end users' duty of care, in preparing their own specifications, designs, processes and procedures, to assess the risks associated with and/or peculiar to their own situation.

When the words "shall" or "must" are used in this document, the requirements shall be read as mandatory for vehicles operating on the CRN.

When the word "should" is used in this document, the requirements shall be read as recommended.

When the word "may" is used in this document, the requirements shall be read as advisory.

The requirements of this standard will apply to all new, substantially modified trolleys, trailers and portable plant that have not operated previously on the CRN. Trolleys, trailers and portable plant that have operated on the CRN prior to 25 November 2011 and have a current rail certification at the time of proposed use will be considered as deemed to comply with this standard.

Trolleys, trailers and portable plant that do not have a current rail certification will not be permitted to operate or work on the CRN until such certification is obtained. Refer to CRN Standard CRN RS 016 Road-Rail Vehicle Certification and Recertification.

In this standard, the terms "owner", "operator" and "owner/operator" are used. They refer to the owner of the rolling stock, the operator using that rolling stock or, where both owner and operator are the one organisation.

1.2 Rolling stock standards suite

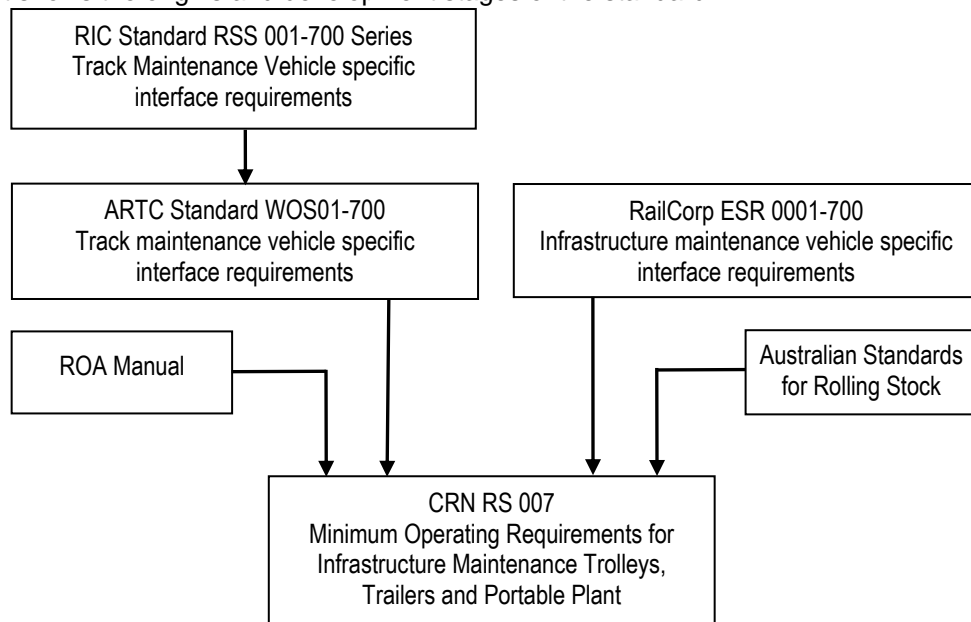
This standard is a part of a suite of rolling stock standards covering the interface between rolling stock and the CRN operating environment. The following documents form the core standards suite.

CRN RS 001	Minimum Operating Requirements for Locomotives
CRN RS 002	Minimum Operating Requirements for Freight Vehicles
CRN RS 003	Minimum Operating Requirements for Locomotives Hauled Passenger Vehicles
CRN RS 004	Minimum Operating Requirements for Multiple Unit Trains
CRN RS 005	Minimum Operating Requirements for Rail Bound Infrastructure Maintenance Vehicles
CRN RS 006	Minimum Operating Requirements for Road-Rail Infrastructure Maintenance Vehicles
CRN RS 007	Minimum Operating Requirements for Infrastructure Maintenance Trolleys, Trailers and Portable Plant (This Standard)
CRN RS 008	General Interface Requirements for Rolling Stock

CRN RS 010 Vehicle Acceptance Test and Inspection Requirements

1.3 Standard development

This CRN standard was developed from existing standards that were originally issued by the Rail Infrastructure Corporation to the ARTC for the technical management of rolling stock operating on the NSW country and defined interstate network. Those standards have been further enhanced and updated using relevant data from current RailCorp interface standards, the ROA Manual and the Australian Standards for Rolling Stock. The following flow chart shows the origins and development stages of the standard.



1.4 Australian Standards for Railway Rolling Stock

The RISSB (Rail Industry Safety and Standards Board), a part of the Australasian Railway Association, publish the AS7500 series Australian Standards for Railway Rolling Stock which will eventually supersede the Railways of Australia (ROA) Manual of Engineering Standards and Practices.

Term	Definition
On-track Trailer	A non-powered platform vehicle for operation on rail only that can be hauled by a road/rail vehicle or infrastructure maintenance vehicle.
Portable Plant	A small rail-bound infrastructure maintenance vehicle which is placed on or removed from rail by mechanised lifting equipment
Quadricycle	A small self-propelled rail bound vehicle used for conveying personnel, tools and equipment on rail
Road/Rail Vehicle	Vehicles designed essentially for operation on road but fitted with rail wheels for guidance to permit them to operate on rail.
Road-Rail Trailer	A small non-powered vehicle essentially for operation on road but fitted with rail wheels such that it can be hauled on rail by a road/rail vehicle or infrastructure maintenance vehicle.
Support Frame	A small manually operated two (2) or four (4) wheeled frame used for conveying specialised track maintenance tools on rail
Trolley	A small non-powered, hand operated, four (4) wheeled platform used for conveying tools and equipment on rail.

The current listing of Australian Standards for Railway Rolling Stock can be found on the website: www.rissb.com.au. The listed standards are categorised as being “Published”, “For Comment” or “Future”.

To obtain access to the published Australian Standards for Railway Rolling Stock, an organisation must be a full or an associate member of the Australasian Railways Association.

1.5 Vehicle design

Vehicle design must generally comply with the interface requirements of this minimum operating standard. Where the Australian Standards for Railway Rolling Stock have been published, then compliance may be required with those standards also.

The design of any infrastructure maintenance vehicle shall also take into account the requirements of the Occupational Health and Safety Act, however this standard does not specifically cover Occupational Health and Safety requirements, which fall within the responsibility of the vehicle owner/operator.

For vehicles fitted with cranes, hoists or winches, such equipment must comply with the requirements for selection, operation and maintenance as specified in AS 1418 - Cranes, Hoists and Winches and AS 2550 – Cranes, Hoists and Winches – Safe use. The lifting and/or elevating equipment manufacturer and date of manufacture must be listed on an identification plate suitably affixed to the equipment.

The design of any vehicle shall take into account and demonstrate compliance with the requirements of all environmental legislation, in particular those requirements relating to noise, vibration, exhaust emissions and waste discharge, where applicable.

Existing vehicle designs, rail certified and authorised to operate within New South Wales as at 25 November 2011, will be permitted to operate on the CRN under existing vehicle approvals.

As of 25 November 2011, newly introduced or substantially modified vehicles shall be subject to review and assessment, by the CRN Manager, for compliance with the relevant standards and legislation. Vehicle owner/operators will be required to submit the necessary documentary evidence to verify that their vehicle is compliant and rail certified.

Vehicles that do not fully comply with the standards and legislative requirements, but are rail certified, will be subject to critical review and in some cases may be permitted to operate under nominated restrictions as determined by the CRN Manager.

An Exemption Certificate may be issued for non-compliances with these standards, where the CRN Manager deems that the non-compliance is acceptable and does not compromise safety or relevant legislation.

1.6 Trolleys, trailers and portable plant authorised to operate on the CRN

Only vehicles, rail certified and approved to operate on the New South Wales rail network will be accepted by the CRN Manager for operation on the CRN.

Vehicle owner/operators shall be responsible for obtaining rail certification through an approved certifying body and vehicle acceptance from the CRN Manager.

Vehicles, to be fully accepted on to the CRN, must have their relevant operating details published in the CRN Train Operating Conditions (TOC) Manual. (For interim or conditional acceptance, see below).

Vehicles not published in the CRN Train Operating Conditions manual shall not be operated or moved on the CRN unless special approval in the form of a CRN TOC Waiver is issued. This approval is required for any movement including that of vehicles undergoing tests.

Defective Vehicles detected or known to be operating, on an adjacent rail network, shall not enter the CRN without the authority of the CRN Manager.

All vehicles must be maintained in a condition that meets or exceeds the minimum operating requirements contained in this standard. Where it is deemed that the condition of a vehicle has deteriorated below these minimum requirements, then the authority to operate that vehicle on the CRN may be withdrawn until it can be demonstrated that the vehicle roadworthiness has been reinstated.

1.7 Acceptance of new trolleys, trailers and portable plant

To apply for new vehicle acceptance the owner/operator shall complete the appropriate Vehicle Certification Request Form, CRN RF 007 in conjunction with an accredited Certification body and submit it to the CRN Manager. Refer to CRN Standard CRN RS 016 - Road-Rail Vehicle and Trailer-Trolley Certification and Recertification Appendix 4, for a listing of Accredited Certifying Bodies.

Where testing is to be conducted on the trolleys, trailers and portable plant refer to section 1.10 below.

Once a vehicle/s has been approved, details of the vehicle/s will then be published in the CRN Train Operating Conditions manual along with any special operating conditions.

Vehicle acceptance is based on each vehicle's rail operating compatibility with the CRN only, and does not warrant the structural integrity of the vehicle, based on design and/or construction. Vehicle acceptance for operation on the CRN requires that such vehicles continue to be maintained fit for purpose, in accordance with the accredited Owner/Operators' vehicle maintenance standards.

1.8 Change of trolleys, trailers and portable plant design or operating conditions

Where a vehicle has been modified or is proposed to be modified, such that the modification is going to impact on the vehicle's performance, then the owner/operator must advise the CRN Manager and apply for a vehicle re-approval.

This applies to any modifications that may affect the vehicle's on-track performance such as flexibility of the vehicle's structure, suspension stiffness, braking performance, increase in adhesion performance, loading capacity, load imbalance of the vehicle, etc.

See Clause 1.9 for trolleys, trailers and portable plant de-certification criteria.

1.9 Vehicle de-certification

Trolleys, trailers and portable plant will be de-certified under any of the following circumstances:

- Annual Inspection overdue
- Worksite (including track and off-track) incidents involving damage or potential damage to rail guidance equipment
- Unauthorised trolleys, trailers and portable plant modifications

Such vehicles must undergo the re-certification process before the vehicle certification and operating approval will be restored.

Refer to CRN Standard CRN RS 016 Road-Rail Vehicle and Trailer/Trolley Certification and Recertification.

1.10 Testing and certification of trolleys, trailers and portable plant

Testing of any trolley, trailer or portable plant on the CRN shall not be carried out without the prior approval of the CRN Manager and the issuance of an appropriate CRN TOC Waiver.

New or substantially modified vehicles shall successfully undergo inspection and testing in accordance with the guidelines and tests specified in CRN Standards CRN RS 008 and CRN RS 010, respectively, being conducted prior to acceptance, to confirm safe operation and compliance with the appropriate regulatory requirements.

Vehicles will be required to be rail certified on a 12 monthly basis for operation on the CRN. This will require owners/operators to have their vehicles tested and inspected annually, to verify that the vehicle conforms to CRN standards.

Test/inspection results are recognised only if undertaken by an Approved Certifying Company. Refer to CRN Standard CRN RS 016, Appendix 4 for a list of approved certifying companies. All re-certifications must be accompanied by a completed Road/Rail Re-certification Checklist (Refer to CRN Standard CRN RS 016, Appendix 2).

For vehicles fitted with elevating/load lifting equipment, such equipment must be registered with WorkCover.

The CRN Manager reserves the right to:

- have a representative present for each of the inspection/tests.
- request the owner/operator to conduct further testing where it is suspected that the vehicle performance has deteriorated.
- have access to all relevant raw test data (this may apply to a number of tests).

Once the CRN Manager is satisfied with the performance of the vehicle, further testing may be carried out at the discretion of the owner/operator but only with prior notification and agreement of the CRN Manager.

2 Trolleys

This section specifically covers the requirements for trolleys.

2.1 General

A trolley is usually a small non-powered infrastructure maintenance vehicle used for manually conveying tools and equipment along the track. See Clause 2.5 for reference to powered trolley applications.

The maximum gross mass of a loaded manually propelled trolley shall not exceed 500 kg. Refer to Clause 2.6 for marking and identification.

Trolleys, due to their size, can be readily removed from track by hand.

The following restrictions apply to manually operated trolleys:

- trolleys shall not be towed or pushed by other infrastructure maintenance vehicles
- It shall not be possible for manually operated trolleys to be coupled together
- trolleys shall be accompanied, at all times, by enough personnel to control and remove the vehicle from the line as required
- trolleys shall travel at walking pace (not exceeding 5 km/h)
- trolleys shall not be used to convey personnel

Refer to Clause 4 of this standard for requirements applicable to Support Frames.

2.2 Trolley body

Trolleys shall not exceed the Narrow Non-Electric rolling stock outline.

2.3 Wheelset back-to-back measurement

Wheel back to back dimensions shall fall within the range 1357 to 1360mm.

2.4 Brakes

All trolleys shall be fitted with a fail-safe brake system that shall provide a park brake and service brake function. The brake system shall require a positive action by the operator to release and hold the brake in the released position. After this positive action is released, the brake shall reapply.

The braking system shall be regularly inspected, tested and maintained in a fully operative condition.

The parking brake shall be tested with the trolley loaded at maximum capacity on a 1 in 30 grade. The brake shall hold the trolley stationary indefinitely on a 1 in 30 grade.

The trolley loaded at maximum capacity shall be able to stop from walking pace (5 km/h) within 5 metres, on a track with a 1 in 30 grade, once the brakes have been activated by any means.

2.5 Powered trolleys

Powered trolleys are permitted to assist operators in moving support frames on rail.

The maximum speed of a powered trolley shall be regulated to not exceed 5 km/h.

Application of tractive power shall require the application of a positive action, such that the operator is engaged with the vehicle at all times when applying tractive power. If the positive action is released, the tractive power shall be cut and the brakes applied.

The manual movement of the powered trolley shall not emulate the positive action.

If the brakes are applied, tractive power shall also be cut.

2.6 Marking and identification

Each trolley shall have a distinct serial or plant number clearly visible on each side of the vehicle. Lettering font size shall be a minimum of 50 mm high and contrasted with a background panel. eg white lettering on a black panel or black lettering on a white panel.

Each trolley shall be marked with the tare mass and either the maximum loaded mass or the maximum carrying capacity.

Each trolley shall have reflective tape on both sides and at each end. The side reflective tape shall be in accordance with Clause 15 of Standard CRN RS 008. Front and rear reflective tape shall be red and either yellow or orange.

Note: The requirements within this section are above and beyond any application of Australian Standard AS 7531.

2.7 Lights

Trolleys do not require lights to be fitted or displayed during daylight.

However, when operating at night, in heavy fog, or in tunnels, front and rear lights shall be displayed.

Lights, when required, shall conform to the following:

- at least one red light shall be fitted at both front and rear ends of the trolley
- lights shall not flash
- light intensity shall be a minimum of 60 cd

Note: The requirements within this section are above and beyond any application of Australian Standard AS 7531.

2.8 Compliance plates

All trolleys shall be fitted with a compliance plate.

Compliance plates shall be permanently fitted to the vehicle in a low stress area.

The compliance plates shall be embossed or stamped with the following information:

- manufacturer
- Trolley Model / Version No.
- serial number/VIN
- date manufactured
- tare mass
- either maximum loaded mass or maximum carrying capacity
- date vehicle inspected and crack tested (NDT)

A sample compliance plate is shown in Figure 1 below.

Trolley Compliance Plate

Manufacturer:

Model Number:

Serial Number/VIN:

Date Manufacturing:

Tare Mass (kg):

Max Loaded Mass (kg):

Date NDT:

Figure 1 - Sample trolley compliance plate

If a trolley has been operating but is not fitted with a compliance plate, a compliance plate shall be fitted and embossed or stamped with the following information:

- manufacturer (if known)
- Trolley Model / Version No
- serial number/VIN (generate a number if necessary)
- date manufactured (if known)
- tare mass
- either maximum loaded mass or maximum carrying capacity
- date vehicle inspected and crack tested (NDT)

If the date of fitment is not known, the date is deemed to be greater than 10 years, and a 10 year crack test shall be conducted and stamped as having been conducted on the compliance plate.

2.9 Vehicle performance

Refer to CRN Standards CRN RS 008 and CRN RS 010 for vehicle acceptance test requirements.

3 Trailers

This section specifically covers the requirements for on-track trailers and road/rail trailers.

3.1 General

A trailer is a small non-driven infrastructure maintenance vehicle used for conveying tools and equipment along the track. Such vehicles are usually hauled or propelled using a solid draw or towbar.

Trailers, depending on size, may be readily placed on or removed from track by hand however large trailers may need mechanised lifting equipment to perform the same tasks. Small manageable trailers are identified and published as note T9 in Section 12 of the CRN *Train Operating Conditions (TOC) Manual – General Instructions*.

A trailer shall have one or more nominated and approved towing vehicle type(s) and the allowable maximum mass of the trailer shall be stencilled on the towing vehicle.

A four (4) wheeled trailer not attached to a motorised vehicle is to be treated as a trolley, provided there is adequate operator control of the braking system. In this case refer Clause 2 above.

The following restrictions apply to trailers:

- trailers shall not be used to carry personnel
- a trailer, when disconnected from the towing vehicle, shall be accompanied, at all times, by enough personnel or other means to control and remove the vehicle from the track, as required
- The combined gross vehicle masses (GVM) of both trailer and towing vehicle shall not exceed the towing vehicle's gross combined weight rating (GCWR).

Rail guidance wheels shall be laterally centred with respect to the vehicle body or road wheel centrelines, by design.

Note: In practice, a maximum tolerance of ± 10 mm will be permitted between the centrelines of rail guidance wheels and vehicle body or road wheels.

3.2 Trailer body

Trailers shall not exceed the Narrow Non-Electric rolling stock outline. Refer to Standard CRN RS 006 Clause 2 for road/rail clearance limits which are also applicable to road/rail trailers.

3.3 Rail wheels

All rail wheels fitted to trailers shall meet the requirements of Standard CRN RS 006.

3.4 Wheelset back-to-back measurement

Wheel back to back dimensions shall fall within the range 1357 to 1360mm.

3.5 Static vehicle twist test

All four (4) wheeled trailers shall be designed such that they meet the twist requirements of Clause 4 of CRN RS 008.

Vehicles with only two rail wheels (one rail axle) and no road tyres contacting the rail AND a spherical type coupling is used in the towbar or drawbar shall be exempt from the twist test on the basis that the spherical type coupling have more than 6 degrees of rotational freedom.

3.6 Transferring to and from rail operation (road/rail trailers)

All road/rail trailers shall meet the requirements of Clause 3.6.5 and 3.6.6 in Standard CRN RS 006.

3.7 Brakes

All trailers shall be equipped with a fail-safe braking system that proportionally operate the trailer brakes as the brakes on the hauling vehicle are applied and released

The trailer brake system shall be designed to provide a service brake function as well as a park brake function.

3.7.1 Fail-safe requirement

The trailer brake system shall require a positive action to release and hold the brake in the released position. After this positive action is released, the brake shall reapply.

If the trailer separates from the hauling vehicle, the brakes of the trailer shall apply in a fail-safe manner. The connections and couplings used in the brake system shall be such that the braking system of the trailer is not suppressed in any way during or after separation.

Couplings and fittings such as 'Dry Break' or 'Quick Connect' that are designed to seal when hydraulic pressure is lost are not suitable for this application as they can suppress the braking system.

3.7.2 Brake performance requirements – service brakes

The brake performance testing requirements for trailers shall include the following tests:

- hauling road/rail vehicle without trailer attached
- hauling road/rail vehicle with empty trailer attached
- hauling road/rail vehicle with fully loaded trailer attached

All three (3) of the above test requirements shall meet the brake performance requirements of Clause 5.3 in Standard CRN RS 006.

When a trailer is accepted onto the CRN, it is accepted with the hauling vehicle as a combination, as specified in the operating conditions.

3.7.3 Brake performance requirements – park brakes

All trailers shall be fitted with a park brake that will hold the fully loaded trailer, with and without the braked hauling vehicle attached, indefinitely on a 1 in 30 grade.

3.8 Drawbars

Drawbars and attachments shall be used on the trailers for which they are designed for. Trailers shall have the matching drawbar ID stencilled in a prominent location or the matching drawbar attached.

As part of the trailer engineering assessment, drawbars and their connections shall have engineering certification detailing the safe working load.

Each drawbar shall be fitted with a compliance plate detailing the following:

- manufacturer
- serial or model number
- date manufactured
- engineering certificate number (unless the drawbar serial or model number is included in the engineering report)
- maximum safe hauling load
- date inspected and crack tested (NDT)

A sample drawbar compliance plate is shown in Figure 2 on next page.

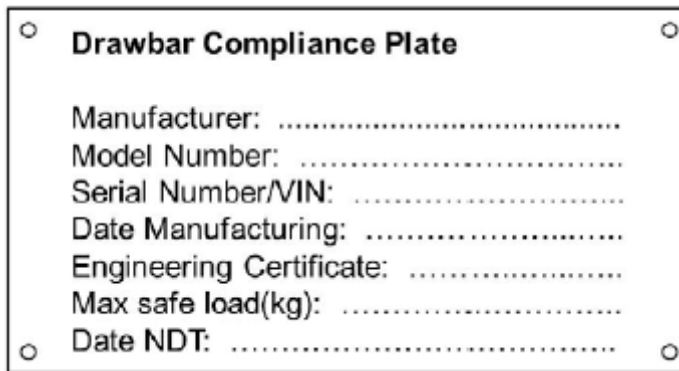


Figure 2 - Sample drawbar compliance plate

3.9 Maximum speed

The maximum speed of a trailer will be determined based on the maximum speed of the specified towing vehicle, the result of the twist test and compliance with the Narrow Non-Electric rolling stock outline.

No trailer will be permitted to exceed 50 km/h when on rail, and any trailers exceeding 15 km/h will require a ride performance test. Refer to Clause 8 in Standard CRN RS 008 for ride performance test requirements.

The maximum speed for any vehicle operating within a worksite is 15 km/h.

3.10 Marking and identification

Each trailer shall have a distinct serial or plant number clearly visible on each side of the vehicle. Lettering font size shall be a minimum of 50 mm high and contrasted with a background panel. eg white lettering on a black panel or black lettering on a white panel.

Each trailer shall be marked with the tare mass and either the maximum loaded mass or the maximum carrying capacity.

All trailers shall be marked with the accepted hauling vehicle’s plant, registration, or VIN numbers. This will be determined following brake tests.

All trailers shall have reflective tape on both sides and at the trailing end. The side reflective tape shall be reflective zebra striping and shall be as detailed in Clause 15 of Standard CRN RS 008. Reflective tape at the trailing end shall be red and either yellow or orange reflective zebra striping.

AS 7531 does not specify markings on trailers, however this is a requirement for the CRN.

3.11 Lights

A trailer shall be fitted with automotive tail and stoplights compatible with the towing vehicle and in accordance with ADR49, comprising two tail and two stoplights, arranged at the trailing end and on either side of the vehicle.

The tail-lights shall function at all times when the vehicle is in rail mode, and the stoplights shall function as the brake is applied when in rail mode.

3.12 Compliance plates

All trailers shall be fitted with a compliance plate.

Compliance plates shall be permanently fitted to the vehicle in a low stress area.

The compliance plates shall be embossed or stamped with the following information:

- manufacturer
- Trailer Model / Version No (if applicable)
- serial number or VIN
- date manufactured
- tare mass
- maximum loaded mass
- approved hauling vehicle plant or registration number or VIN
- date vehicle inspected and crack tested (NDT test)

A sample compliance plate is shown in Figure 3 below.

Trailer Compliance Plate
Manufacturer:
Model Number:
Serial Number/VIN:
Date Manufacturing:
Tare Mass (kg):
Max Loaded Mass (kg):
Hauling vehicle:
Date NDT:

Figure 3 - Sample trailer compliance plate

If a trailer has been operating but is not fitted with a compliance plate, a compliance plate shall be fitted and embossed or stamped with the following information:

- manufacturer (if known)
- Trailer Model / Version No(if applicable)
- serial number or vehicle identification number (VIN) (generate a number if necessary)
- date manufactured (if known)
- tare mass
- maximum loaded mass
- date vehicle inspected and crack tested (NDT test)
- approved hauling vehicle plant or registration number or VIN

If the date of fitment is not known, the date is deemed to be greater than 10 years, and therefore a 10 year crack test shall be conducted and marked on the compliance plate as having been conducted.

3.13 Vehicle performance

Refer to CRN Standards CRN RS 008 and CRN RS 010 for vehicle acceptance test requirements.

4 Support frames

This section specifically details the requirements for support frames.

Support frames, due to their size, can be readily placed on or removed from track manually.

4.1 General

A support frame is a lightweight frame, with flanged rail wheels, used to support a piece of “Specialised Equipment” such as clippers and clip removers, drills and borers, grinders, spike drivers and pullers, global positioning system (GPS) units, etc.

- The support frame and supported machinery is moved along the track manually, however some units may be power assisted.
- Support frames shall travel at walking pace (not exceeding 5 km/h).
- Support frames shall not convey personnel.
- A support frame may additionally be considered to be a trolley if used to move items not included as part of the “Specialised Equipment” that it is designed to be used with
- A support frame is normally lifted onto track prior to the machinery being fitted to the frame.
- a support frame shall be accompanied, at all times, by enough personnel or other means to control and remove the vehicle from the track, as required

4.2 Certification of support frames

Support frames, by design, are a relatively simple structure and therefore do not necessarily require a formal certification or recertification. For operation on the CRN a support frame only needs to undergo a pre-work safety inspection to ensure frame integrity and correct brake operation.

4.3 Brakes

All support frames shall be fitted with a fail-safe braking system.

The brake system shall require a positive action by the operator to release and hold the brake in the released position. After the positive action is released, the brake shall reapply.

This braking system shall be operational with the support frame on rail alone and with machinery mounted on the support frame.

The braking system shall be regularly inspected, tested and maintained in a fully operative condition.

4.3.1 Brake performance requirements

The braking system shall be able to hold a fully loaded support frame (with the heaviest machinery and maximum mass added to the tool tray) indefinitely on a 1 in 30 grade.

The braking system shall be able to bring a fully loaded support frame (with the heaviest machinery and maximum mass added to the tool tray) to a stop from walking pace (5 km/h) within 5 metres on a track with a 1 in 30 grade, once the operator activates the braking system.

4.4 Powered support frames

Powered support frames are permitted to assist operators in moving support frames on rail.

The maximum speed of the powered support frame shall not exceed 5 km/h.

Application of tractive power shall require the application of a positive action, such that the operator is engaged with the vehicle at all times when applying tractive power. If the positive action is released, the tractive power shall be cut.

If the brakes are applied, tractive power shall be cut.

Appendix 1 CRN Rolling Stock Glossary

This appendix defines words that are used in the CRN Rolling Stock Standards

Agreed	Agreed between the Owner/Operator and the CRN Manager.
Approved	Approved by the CRN Manager.
Authorised person	Person authorised to travel in the cab of an infrastructure maintenance vehicle/train and stop the vehicle/train in the event of an emergency.
Cant deficiency	<p>The difference in superelevation between:</p> <ul style="list-style-type: none">- that required to balance the actual vehicle centrifugal force due to curve negotiation such that there is equal wheel loading on the high and low rail, (equilibrium or balancing speed), and- the actual superelevation existing in the curve. <p>Cant deficiency is a function of superelevation, curve radius and vehicle speed.</p>
Continuous tractive effort	The tangential force that can be applied at the wheel/rail interface by a self powered vehicle for an indefinite period without causing wheel spin or overheating of the traction equipment.
Curved wheel web	Wheel web or plate which is domed such that its cross section is curved.
Design speed	The maximum speed at which a vehicle is expected to operate on the CRN.
Flat top trolley or trailer	A small non-powered infrastructure maintenance vehicle which is used for conveying tools and equipment along the track and which can be easily removed from the track.
Freight Train	A train predominantly consisting of freight vehicles.
Full supplies, Fully provisioned	Locomotive with all equipment and full of fuel, oil, water, coolant and sand.
Handbrake	<p>A mechanical device provided on a train/vehicle in order to secure the train or an individual vehicle so as to prevent it from moving.</p> <p>Note: Where the term “handbrake” is used, it will also mean “parking brake”.</p>
Heritage vehicle	Locomotive, passenger vehicle, freight vehicle or trolley that has historical significance and/or is not used in regular revenue service but used in special interest operations, such as steam tours.
Infrastructure maintenance vehicle	A rail bound self propelled vehicle which is used to carry out inspection and/or maintenance on railway infrastructure. Some of these vehicles may be removed from the railway track by the use of special take-offs or portable turnouts.
Light locomotive	One or more locomotives coupled together without hauled vehicles attached.
Locomotive	A self propelled vehicle, powered by any form of energy, which does not convey passengers or freight but which is used to move one or more other vehicles thus forming a train.
Multiple unit train	A distributed power train made up of similar electric or diesel powered vehicles and non-powered vehicles operating as a unit.

Net brake ratio	The ratio of the sum of the actual measured brake block forces divided by the total vehicle weight.
On-track infrastructure maintenance vehicle	Any infrastructure maintenance vehicle which operates exclusively on railway track.
Overhead wiring vehicle	An infrastructure maintenance vehicle with an elevating platform or equipped for maintenance of the overhead traction wiring system.
Power car	A self propelled vehicle, which may or may not convey passengers and/or freight, and operates in conjunction with similar vehicles in a multiple unit consist.
Quadricycle	A small self propelled rail-bound track vehicle which can be easily removed from the track.
Qualified worker	A worker certified as competent to carry out the relevant task.
Rail-bound infrastructure maintenance vehicle	An on-track infrastructure maintenance vehicle that cannot be removed from track without the use of a heavy crane. These vehicles are transferred around the network by rail.
Road/rail vehicle	Any type of track vehicle which can travel on either road or rail and can readily transfer from one mode of operation to the other.
Rolling Stock Exemption Certificate	A Certificate issued to a vehicle owner/operator covering vehicle non-conformances which are technically acceptable. These certificates remain in place for the life of the vehicle.
Rolling Stock Standards Waiver	A Waiver issued for a vehicle covering non-conformances that are deemed acceptable for a limited time period, until corrected.
Starting tractive effort	The tangential force applied at the wheel/rail interface that can be applied by self powered vehicle, to move itself and its trailing load from a stationary state without causing excessive wheel slip.
Straight wheel web	Wheel web consisting of a flat plate with no curvature such that its cross section is straight. Used primarily with wheel cheek mounted disc brakes
S-plate wheel	Wheel with a web such that its cross section forms an S shape, designed to provide low wheel rim stresses
Substantially modified vehicle	Vehicle modified to accommodate its use for a different purpose. Vehicle undergoing major refurbishment with updated equipment which can alter the braking, traction or suspension system performance. Vehicle being moved with equipment removed resulting in a reduction of vehicle mass that could alter the vehicle performance. Vehicle modified such that it may be incompatible with the infrastructure.
TOC Waiver	An authority issued for the movement of a vehicle for which there are no published operating conditions, or for which the operating conditions are different from those published in the CRN Train operating Conditions Manual.
Track maintenance vehicle	Infrastructure maintenance vehicle used for the maintenance, construction or inspection of track.
Train	One or more rail vehicles operating singularly or coupled together, hauled or self powered and capable of operating track signal circuits