

Rail Operating Conditions Standard

SM-18-00058177

Metro Body of Knowledge (MBoK)

Version: 5.0
Status: Final
Document owner: Executive Director, Health and Safety
System: Health and Safety
Applicable to: Sydney Metro
Issue date: 28/10/2025
Next review date: 28/10/2028

Document Approval:

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1. Introduction

Sydney Metro is an accredited rail infrastructure manager (RIM) under the *Rail Safety National Law* (RSNL) for the purpose of carrying out railway operations. Such rail operations include constructing, managing, commissioning, maintaining, repairing, modifying, installing, operating and decommissioning:

- Railway tracks and associated railway track structures.
- Railway signalling and communications systems; and
- Other rail infrastructure necessary to enable safe rail operations.

As the Rail Infrastructure Manager, Sydney Metro is responsible for ensuring the safe construction, testing and commissioning of each Metro rail asset to the required standards prior to hand over to the operator. As such, systems for managing the acceptance, placement, movement and removal of rolling stock is fundamental to ensuring safe interfaces between rail vehicles and track, along with ensuring the integrity of Sydney Metro's rail infrastructure.

2. Purpose

The purpose of this Standard is to prescribe the minimum conditions and requirements that must be achieved by all Rolling Stock Operators and those conducting rail safety work when planning, placing, moving and removing all rolling stock on rail infrastructure for which Sydney Metro is the Rail Infrastructure Manager.

3. Scope

This Standard applies to the acceptance, placement, movement and removal of all Classified Rolling Stock on rail infrastructure for which Sydney Metro is the Rail Infrastructure Manager.

This Standard does not apply to:

- Activities conducted on rail infrastructure operated by other Rail Transport Operators (RTO); or
- Rolling stock commissioned and operated for purposes of commercial passenger and freight services.

The term *Classified Rolling Stock* used herein shall mean any vehicle or plant, including trolleys and trailers, designed to operate on a railway track for purposes of constructing and maintaining rail infrastructure. This may include passenger rolling stock being tested on railway track structures for which Sydney Metro is the Rail Infrastructure Manager.

The term *rail infrastructure* used herein shall mean any rail infrastructure for which Sydney Metro is the Rail Infrastructure Manager under the *Rail Safety National Law* (RSNL) for the purpose of carrying out railway operations (Section 1).

The term *worksite* used herein shall mean a clearly defined physical location where work is carried out, and which, when within the rail corridor is protected from rolling stock by specific worksite protection arrangements.

3.1.1 Safe Working Rules

The following safe work rules must underpin all activities conducted in the Sydney Metro rail corridor:

Rule 1: All work is planned and risk assessed.

Rule 2: All persons are competent to undertake their work.

Rule 3: All persons are fit for the work they are undertaking.

Rule 4: All plant and equipment are certified and fit for use.

Rule 5: All work on or near rail infrastructure is authorised.

Rule 6: Rolling stock is separated from people and other rolling stock.

Scan the below QR code to directly access all documents referenced in this procedure.



4. Definitions

All terminology in this Standard is considered the generally accepted or dictionary definition. Other terms specific to this Standard are defined within the [Sydney Metro Glossary](#). Definitions specific to this Standard are listed below.

Definitions	
Associated Railway Track Structures	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Boundary Fence	The boundary fence secures and separates the rail site from publicly accessible areas for the full length of the Rail Corridor.
Brownfield rail site	An area or section of a railway network that is already developed and operational
Certificate of Compliance	A certificate issued by a competent body or person that certifies that a particular piece of rolling stock or plant has been tested for compliance with the appropriate interface standards and is considered safe to operate on Sydney Metro-managed infrastructure
Classified Rolling stock	Any vehicle or plant, including trolleys and trailers, designed to operate on a railway track for purposes of constructing and maintaining rail infrastructure. This may include passenger rolling stock being tested on railway track structures for which Sydney Metro is the Rail Infrastructure Manager.
Consist	An approved listed order of rolling stock items coupled together to make up a complete rail vehicle.
Construction Site	A site under construction without the potential for any rolling stock movements.
Convoy	A group of track vehicles not coupled but travelling closely together
Danger Zone	The space surrounding the tracks where workers and equipment are at risk of being struck by rolling stock, including: <ul style="list-style-type: none"> everywhere within 3 metres horizontally of the nearest rail; and any distance above or below these 3 metres unless a safe place exists or has been created.
Failed rolling stock	Self-propelled Classified Rolling Stock that has suffered a partial or complete failure such that it cannot continue to work or complete its journey under its power. It remains disabled until the failure is corrected or declared a failure and assisted from the section.
Independent Competent Person (ICP)	A person approved by Sydney Metro who has been assessed as having the necessary independence and competence to assess rolling stock against appropriate technical standards and deem it fit for use on the Sydney Metro network.
Network Access Level Crossings	Generally, permanent level crossings are provided at authorised locations for Network maintenance. Excludes public level crossings and private level crossings.
ONRSR	Office of the National Rail Safety Regulator
Operating Exemption	A document issued by a competent Sydney Metro representative authorises a piece of rolling stock or plant, based on historical compliance with pre-existing acceptance standards, for continued operation on or across Sydney Metro-managed infrastructure for a defined period.
Operating Waiver	A document issued by a competent Sydney Metro representative that authorises the one-off movement of a piece of rolling stock or plant on or across Sydney Metro managed Infrastructure, based on sufficient evidence that risk control measures are in place.
Other RTO Rail Site	A rail site managed and controlled by another accredited RTO where the Safety Management System of the other RTO applies.
Qualified Worker	A person who possesses the required level of knowledge, skills, and qualifications to perform a specific job safely and to the expected standard.
Rail Corridor	From fence-line to fence-line, or if there are no fences, everywhere within 15 metres of the outer rails.
Rail Workplace	As defined under the Rail Safety National Law (NSW) No 82a of 2012

Definitions	
Railway Operations	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Rail Infrastructure Manager (RIM)	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Rolling Stock	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Rolling Stock Register	The Sydney Metro Rolling Stock Register lists all rolling stock certified for use on Sydney Metro rail infrastructure per Sydney Metro's Rail Operating Conditions Standard and Procedure. Rail Vehicle Registration is managed by Sydney Metro using SM-20-00046300 Rolling Stock Acceptance Procedure .
RSNL	Rail Safety National Law (NSW) No 82a of 2012
Rolling Stock Operator (RSO)	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Rail Transport Operator (RTO)	As defined under the Rail Safety National Law (NSW) No 82a of 2012
Sydney Metro Site	Any physical location where work is conducted by a Sydney Metro contractor, including all offices and sites controlled by Metro Operations and Project Delivery Partners (Principal Contractors (PC's)).
Sydney Metro Local Possession Authority (SMLPA)	A written authority from Sydney Metro that: <ul style="list-style-type: none"> • Authorises the closure of a defined portion of track for a specified period. • Provides exclusive occupancy for that defined portion of track. • Is issued exclusively to a nominated Possession Protection Officer (PPO). The term 'SMLPA' can be used interchangeably to mean either a written authority or the area to be occupied under the authority (i.e. a Sydney Metro Local Possession Area), as apparent from the context in this Standard.
Train Movement Plan	A document produced by the RSO and approved by Sydney Metro before the entry of passenger rolling stock into the Sydney Metro network for testing. It should contain details of the planned movement of the rolling stock into, out of and within the Sydney Metro network, including any stabling.
Train Testing Plan	A document produced by the RSO before testing passenger rolling stock on the Sydney Metro network. It should contain details of the rolling stock testing parameters, the associated risks and proposed control measures.
Train Testing Zone	A portion of the network has been approved specifically for the dynamic testing of passenger trains. All work activities not part of train testing are prohibited in the Train Testing Zone.
Worksite	A clearly defined physical location where work is carried out, and which, when within the rail corridor is protected from rolling stock by specific worksite protection arrangements.

5. Roles and Responsibilities

Sydney Metro Executive Director, Health and Safety

The Executive Director, Health and Safety is responsible for:

- This *Rail Operating Conditions Standard* (SM-18-00058177), including approving it, monitoring its effectiveness, and formally reviewing it.
- Authorising and issuing the any Sydney Metro Local Possession Authority; and
- Authorising and issuing Safe Notices.

Rolling Stock Operators (RSO's)

Rolling Stock Operators are responsible for:

- Ensuring all Rolling Stock inspected and certified by an Independent Competent Person.
- Registering all Rolling Stock, planned for use on Sydney Metro rail infrastructure.
- Ensuring all Rolling Stock complies with technical conditions prescribed in the Minimum Rolling Stock Requirements Standard.
- Ensuring vehicle operators are issued with and understand all operating instructions and safety requirements.

Possession Protection Officer (PPO)

The Possession Protection Officer (PPO) is a *Protection Officer 4* qualified worker responsible for coordinating worksite protection and safe working arrangements under a Sydney Metro Local Possession Authority (SMLPA). The responsibilities of the PPO include:

- Authorising the placement, removal, and movement of all Classified Rolling Stock.
- Authorising the entry into and exit out of and coordinating the movement of all rolling stock within the SMLPA.

Protection Officer (PO)

The Protection Officer (PO) is a *Protection Officer Level 2 to 4* qualified worker responsible for managing the protection of individual worksites where work is conducted in the Danger Zone. The responsibilities of the PO include:

- Ensuring work does not commence until worksite protections are in place and contact with the PPO is made.
- Authorising the entry and exit of rolling stock into or out of the worksite.

Rolling Stock Drivers

Rolling Stock Drivers are responsible for:

- Conducting and recording the results of daily inspections before operation.
- Complying with speed restrictions.
- Ensuring the loads on Classified Rolling Stock are secured movement during transit is prevented.

6. Standard

6.1 Classified Rolling Stock Registration

All Rail Transport Operators planning to operate rolling stock on Sydney Metro rail infrastructure must apply for and gain registration using the Sydney Metro *Application for Rolling Stock Assessment Form*.

Sydney Metro shall assess each application for registration in accordance with the [Rolling Stock Acceptance Procedure \(SM-20-00046300\)](#) and with reference to the technical conditions prescribed in the [Minimum Rolling Stock Requirements Standard \(SM-20-00046618\)](#).

Registration of all Classified Rolling stock shall only be permitted following inspection and certification by an Independent Competent Person (ICP).

Once registered, the rolling stock shall be recorded on the Sydney Metro Accepted Rolling Stock Register, along with any listed limitations or restrictions.

A vehicle will be automatically de-registered in any of the following circumstances:

- Derailment, collision or other nominated safety incident.
- Change in vehicle ownership.
- Modification that could affect the vehicles performance.
- An audit that identifies deficiencies in the vehicle's maintenance records.
- Failure to carry out the required pre-operation inspection.
- Where the pre-operation inspection identifies deficiencies that are deemed to make the vehicle unsafe or not suitable for operation.
- After the annual registration expiry date.

The de-registration must remain in place until the vehicle owner can demonstrate, through re-application, inspection and testing or documentation submitted by an ICP, that the vehicle meets the acceptance requirements and is safe to operate.

Non-registered Classified Rolling stock cannot operate on Sydney Metro rail infrastructure unless covered by an operating waiver authorised by the Sydney Metro Deputy Executive Director of Engineering & Design or their nominated representative.

Where infrastructure maintenance vehicles have been confirmed as meeting the requirements for registration, approved and accepted for operation on other rail networks, those vehicles may be accepted, at Sydney Metro's discretion, and be registered to operate under an operating exemption. The Deputy Executive Director of Engineering & Design or their nominated representative must only issue operating exemptions.

Exemptions will be granted for a defined period, after which the exemption will lapse. If the exemption is still required, a further exemption must be applied.

A documented maintenance regime must cover all Classified Rolling stock proposed for operation on Sydney Metro rail infrastructure to ensure operating safety and reliability. Registration is conditional on having maintenance standards in place and that vehicles are maintained to those standards.

6.2 Operating Instructions

Before travelling or operating on Sydney Metro rail infrastructure, vehicle operators must be issued with operating instructions which specify the technical and safety requirements that are to be followed by the accredited RSO accountable for the movement. Any specified technical or safety requirements must, as a minimum, address any requirements specified by Sydney Metro as the accredited RIM.

During the possession planning, these operating instructions are determined before the possession. Operators will be advised of special requirements and operating constraints during the pre-possession briefing by the Possession Protection Officer (PPO).

Before testing passenger rolling stock, the RSO must prepare and submit a Train Testing Plan to Sydney Metro, which addresses all technical and safety requirements. This is to include a Train Movement Plan.

6.2.1 Placement, Removal and Movement of Classified Rolling Stock

The placement, removal and movement of all Classified Rolling Stock must be authorised by the PPO or a competent person delegated by the PPO. Before Classified Rolling Stock travels or operates on Sydney Metro rail infrastructure, the rolling stock must, as a minimum, comply with this Standard.

6.2.2 Classified Rolling Stock occupying a portion of the track

Rolling stock movement is to be performed under the protection of a Sydney Metro Local Possession Authority (SMLPA). Classified rolling stock may occupy a portion of the track only with the authority of the PPO responsible for the SMLPA and within the limits of the SMLPA.

6.2.3 Radio Communication

All self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure must be equipped with radio communication sufficient to allow radio communications between the Operator and the PPO or competent person delegated by the PPO.



If the radio communication provided on the self-propelled Classified Rolling Stock is found or reported to be defective while operating on Sydney Metro rail infrastructure, the Operator must report the failure as soon as possible to the PPO and not move until the PPO has given authority to move.

6.2.4 Headlights and Warning Lights

All self-propelled Classified Rolling Stock that operates or travels on Sydney Metro rail infrastructure must be fitted with the following:

- A headlight, and tail and marker lights.
- An orange flashing light or hazard light that must be switched on and operating when:
 - The vehicle brakes are applied.
 - The horn (whistle) is operated.
 - The vehicle reverses.
 - As otherwise required for safety reasons.

All trailers that operate or travel on Sydney Metro rail infrastructure must be fitted with and display suitable front and rear lights.




If the headlight, tail and marker lights of self-propelled Classified Rolling Stock are suspected or reported to be defective during operation or travel, the vehicle must be removed

OR if agreed by the PPO, the defective headlight tail or marker lights may be repaired or replaced whilst remaining on Sydney Metro rail infrastructure after it has stopped operation or travel and has been appropriately protected by the PPO or a Protection Officer (PO).

6.2.5 Classified Rolling Stock Audibility


All self-propelled Classified Rolling Stock operating on or across Sydney Metro rail infrastructure must be equipped with a device such as a bell, whistle, siren, horn or hooter to give an audible warning.

	<p>If the audible warning equipment provided on self-propelled Classified Rolling Stock becomes defective during operation or travel, the vehicle must be removed from Sydney Metro rail infrastructure</p> <p>OR if agreed by the PPO, the audible warning equipment may be repaired or replaced whilst remaining on Sydney Metro rail infrastructure after it has stopped operation or travel and has been appropriately protected by the PPO or a PO.</p>
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6.2.6 Emergency Equipment

Self-propelled Classified Rolling Stock must carry the minimum following emergency equipment:

- Working two-way radio communication.

	<p>There may be additional project or site-specific emergency equipment requirements</p>
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6.3 Operation of Classified Rolling Stock within a Consist

Some infrastructure maintenance vehicles/plant can be coupled together and operated as a single consist. In this case, the Operator in the leading vehicle must have complete control of the brakes for all vehicles in the vehicle consist.

Before coupling vehicles into a consist, the entire consist must be registered for use (as per Section 6.1). If the consist is approved, it will be included in the Sydney Metro Rolling Stock Register. The consist can only be formed and operated using the approved vehicles in the nominated sequence.

6.3.1 Detaching and or Attaching Classified Rolling Stock

When it is necessary to detach or attach vehicles, a competent person must perform the task in consultation with the PPO or a competent person delegated by the PPO. The PPO or a competent person delegated by the PPO must ensure that all unrelated personnel are kept safe from operations.

6.3.2 Classified Rolling Stock Restricted Operations

Several track maintenance vehicles are subject to certification restrictions and can only operate within protected worksites. These vehicles are identified within the Sydney Metro Accepted Rolling Stock Register in AQUIPA.

No other vehicles must be permitted to pass these vehicles on any adjacent lines until these vehicles have come to a stand and are confirmed to be clear of the adjacent line by the PPO or a competent person delegated by the PPO.

6.3.3 Operation of Trolleys and Trailers

Trolleys are small non-powered, flat-top track vehicles that convey tools and equipment along the track. They can be readily removed from the track. A trolley is a manually powered vehicle that must be accompanied by enough personnel to control and remove the vehicle from the track, as required. The trolley must not:

- Travel faster than walking pace.
- Be used to convey personnel.
- Be towed or pushed by any other vehicle.

All trolleys must be fitted with a spring-applied brake system that will stop and hold the fully loaded trolley indefinitely on all grades in the worksite. The brake system will require a positive hand action to release and hold the brake in the released position. Once this positive hand action is released, the brake must automatically re-apply. The brake release system must be configured not to be latched in the released position.

The Operator must ensure that brakes operate correctly before commencing operation each day.

Trailers are vehicles towed or propelled by a road rail vehicle while the road rail vehicle is in rail mode. If trailers are used, the following must be considered when establishing safe operations:

- The maximum expected trailing/pushing load.
- Breakaway systems.
- Suitability of the road rail vehicle structure to safely haul the total load.
- Compatibility of coupling systems.
- Effect of a trailer on:
 - Road rail vehicle braking.
 - The field of view; and
 - The ability of persons to hear audible warning devices, including reversing alarms.

6.3.4 Parking Brake or Handbrake Requirements

Self-propelled Classified Rolling Stock travelling or operating on Sydney Metro rail infrastructure must be fitted with an operative parking brake capable of fully loading the vehicle on gradients of at least 1 in 22.


If an automatic air brake is fitted, it must not be relied upon to hold a vehicle stationary on a grade for periods exceeding 10 minutes unless the vehicle is fitted with a pressure-maintaining brake valve and the valve is switched on and operating.

The parking or hand brakes must be applied per Table 1 below when a vehicle is parked or unattended.

Table 1: Handbrake Requirement

Vehicles or majority of trains on the gradient	Minimum number of Parking Brakes/Handbrakes
Level to 1 in 100	3 in 10 (30%)
1 in 99 to 1 in 50	5 in 10 (50%)
1 in 49 to 1 in 33	8 in 10 (80%)
Steeper than 1 in 33	All (100%)

When a vehicle is parked or unattended on a grade greater than 1 in 40, in addition to applying handbrakes, approved wheel chocks must be used to chock, on the downgrade side, the wheels of an adequate number of vehicles to secure them from unintentional movement.

	<p>Where the required percentages of available parking brakes/handbrakes in a train cannot be met, additional brakes must be applied, e.g. three parking brakes/handbrakes out of 4 wagons is 75%; therefore, all four parking brakes/handbrakes must be applied to meet the 80% requirement.</p> <p>Where there is a mixture of loaded and empty wagons, the parking brakes/handbrakes on the loaded wagons must be applied first.</p> <p>Where wheel chocks are used in addition to parking brakes/handbrakes, care must be used to safely remove them before moving the vehicle or train.</p>
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6.3.5 Climbing on Classified Rolling Stock

Climbing on rolling stock risks injury to personnel from slips or falls. Climbing above the average floor level of rolling stock creates further risks, particularly where overhead electrical infrastructure is present.

Workers must not climb above the average floor level of Classified Rolling Stock unless correct authorisation/permits have been obtained. This may include electrical and working at heights. A Safe Work Method Statement (SWMS) must be available for these activities.



All rolling stock operating around electrical overhead infrastructure must prominently display electrical danger warning signs adjacent to roof ladders, crane jibs, cherry picker buckets, and elevating platforms.

6.3.6 Riding on Classified Rolling Stock

Riding on moving Classified Rolling Stock is only permitted within a designated operating station or other enclosed space specifically designed to protect persons during the movement of the rolling stock.

Workers must not ride on the steps, platforms or decks of moving Classified Rolling Stock.

6.3.7 Speed Restrictions during Very Hot Weather

During very hot weather conditions on ballasted track, there is a risk of track misalignment due to track expansion and buckling.



To reduce the risks involved, the speed of Classified Rolling Stock operating Sydney Metro rail infrastructure must not exceed 15 km/h when the ambient air temperature reaches 35 degrees Celsius or above. In extreme cases, work may need to be suspended.

The PPO must:

- implement these requirements in consultation with the Project Manager.
- record, in permanent form, the times these restrictions are imposed, altered or cancelled.

6.3.8 Exceeding SMLPA or Worksite Limits

Operators of self-propelled Classified Rolling Stock travelling or operating on Sydney Metro rail infrastructure who exceeded the SMLPA or worksite limits must immediately:

- Stop the vehicle.
- Tell the PPO or the nearest PO.

The PPO or PO must:

- Stop vehicles that have exceeded the SMLPA or worksite limits and have not stopped.
- Stop and prevent other movements that are at risk.
- Instruct affected vehicle operators to wait for further instructions.
- In the case of a PO being initially informed, tell the PPO.

The PPO must arrange to:

- Assess if the Operator, and anyone else involved, is fit to continue operating.
- determine the method of operating to be used to clear the vehicle.
- advise the Sydney Metro Principal's Representative and the Executive Director, Health and Safety (or delegate).

6.3.9 Level Crossings

Where network access level crossings exist within the limits of the SMLPA on Sydney Metro rail infrastructure, Operators of self-propelled Classified Rolling Stock must:


- stop short of the level crossing.
- ensure approaching road and pedestrian traffic has stopped.
- proceed at a walking pace over the level crossing only if it is safe.

6.3.10 Operation of Classified Rolling Stock over Points

Operators of self-propelled Classified Rolling Stock must not travel over points on Sydney Metro rail infrastructure without the PPOs or a PO's authority. The PO must confirm with the vehicle operator that the points are in the correct position for the intended movement of the rolling stock.

6.3.11 Classified Rolling Stock Integrity

Operators of self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure must ensure that vehicle attachments, doors and loads are secured within the relevant rolling stock outline or have the authorisation of the Associate Executive Director Engineering or delegate. Refer to Section 6.1.

	<p>If a defect is found on self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure that infringes the allowable rolling stock outline, the affected vehicle must be:</p> <ul style="list-style-type: none"> • Removed from service until modified and recertified as fit for operation. • If required, authorised to travel as an out-of-gauge vehicle by the Sydney Metro Associate Executive Director of Engineering.
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6.3.12 Loading Requirements and Restrictions

The following loading requirements and restrictions apply to self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure:

- any load exceeding the permissible limits of the loading is referred to as 'out-of-gauge'.
- out-of-gauge loads / rolling stock must not operate without the authorisation of the Sydney Metro Associate Executive Director Engineering or delegate.
- all loads on self-propelled Classified Rolling Stock must be sufficiently secured to prevent movement during transit.
- vehicles must be loaded such that they do not exceed loading outlines, axle load limits or weight distribution restrictions.
- securing devices, loose chains, and chain/webbing ends must be firmly secured to guard against the possibility of their working loose and either falling off or trailing from the rolling stock when moving.
- suitable means for securing a load on or in a wagon is to be selected with consideration given to the type and construction of the load to be carried and the wagon on or in which the load is to be carried.
- the door locking mechanisms on containers and open wagons must be maintained in good condition and working order and secured and locked.
- Passenger rolling stock movements during testing must only occur with all doors closed and secured.



If there is any doubt regarding a consignment and its safety, it MUST NOT be operated on Sydney Metro rail infrastructure until it has been certified by an Independent, Competent Person.

6.3.13 Load Integrity

If there is an actual occurrence or any doubt regarding the integrity of a vehicle's load operating on Sydney Metro rail infrastructure, the vehicle must be stopped and inspected immediately.

The PPO must be contacted to arrange the inspection of any points and other infrastructure that may have been affected by dropping, dragging or falling objects.

The vehicle's operator must arrange to have the load adequately secured and verified before the PPO will authorise work to continue or the journey to be completed.

6.3.14 Assisting Disabled Classified Rolling Stock

When self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure suffers a partial or complete failure such that it cannot continue to operate or complete its journey under its power, it is classified as disabled. If Classified Rolling Stock has been declared as disabled and the fault is rectified, it must not then be moved under its power without the authorisation of the PO/PPO.


Before other Classified Rolling Stock assists disabled Classified Rolling Stock, the Rolling Stock Operator must ensure it is safe to travel.

If the disabled Classified Rolling Stock is amalgamated with similar Classified Rolling Stock, Sydney Metro's operating procedures will apply.

6.3.15 Dealing with Fires on Classified Rolling Stock

When dealing with fires on self-propelled Classified Rolling Stock operating on Sydney Metro rail infrastructure, Operators, PPOs, POs and workers must consider the following:

- The location on the network.
- The safety of other workers and themselves.
- Access and egress for evacuating persons and fighting the fire, taking into consideration the potential impacts of the fire on the rail infrastructure more broadly.
- for example, the availability of traction supply or tunnel exhaust systems.
- Risks from smoke and toxic fumes.
- Risk of fire spreading to other vehicles.
- Risk of fire spreading to other lines and infrastructure.
- Environmental factors.

	<p>Unless specially trained, do not attempt to extinguish fires near high-voltage equipment.</p> <ul style="list-style-type: none"> • If the vehicle is required to stop immediately, try to stop in a safe, accessible place. • Immediately inform the PPO or nearest PO and agree on the procedure to be followed, including who will call for the assistance of the fire brigade, if required, and notification to any adjacent Infrastructure owners. • If applicable and possible, secure the burning vehicle by placing chocks under both sides of the wheel and detach it from any other vehicles. • If you are trained and have the necessary equipment, fight the fire – do not put your safety at risk to fight the fire. • When the fire has been extinguished, the rolling stock must not be moved, and the work in the vicinity will not resume until approval has been obtained from an authorised fire officer. • All vehicles involved with the fire must not be moved until inspected and certified by the ICP or other rolling stock specialist and approval to move has been obtained from the PPO.
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6.3.16 Classified Rolling Stock Travelling or Operating Safely in Convoy

Before moving, the track vehicle operator in control of the convoy shall perform a pre-start briefing to instruct all other operators in convoy on the rules of the convoy and actions to be taken in the event of an incident:

- Ideally, the convoy should be structured such that the largest vehicle is the lead vehicle. This will set the pace for the convoy and reduce the risk of rear-end collisions.
- The track vehicle operator in charge of the convoy shall always travel in the lead vehicle.
- Some vehicles, when approved for use on Sydney Metro's network, have a requirement due to braking characteristics that they must be the lead vehicle when used in convoy.
- In all circumstances, the operators must always drive to conditions.
- Operators must ensure that the vehicle separation distances are sufficient to avoid a collision risk and not to have an excessive distance to ensure that no vehicle gets separated from the others.
- Control of speed between all the vehicles must be maintained and managed to prevent a collision risk.
- Communications within the convoy must be maintained and effective. If communications are lost, the convoy must take appropriate action, such as reducing speed, stopping, or other agreed-upon actions before the convoy sets out. It is good practice for communications checks/tests to be regularly carried out at pre-agreed intervals between all convoy members.
- If the Operator of a vehicle in the convoy loses sight or contact with the vehicle ahead, once the Operator reaches the last confirmed location of the leading vehicle, that Operator must slow down and travel at a restricted speed.
- All vehicles in a convoy must close up together when required to travel over a level crossing.

6.3.17 Holding Classified Rolling Stock Stationary on a Grade

Self-propelled Classified Rolling Stock on Sydney Metro rail infrastructure must always be secured against unintentional movement.

Automatic air brakes (where provided) must not be relied upon to hold self-propelled Classified Rolling Stock stationary when operating or being secured on a grade on Sydney Metro rail infrastructure.

Portable wheel clamps/chocks may be used on Sydney Metro rail infrastructure to control the unintentional movement of vehicles, provided a risk assessment has been undertaken to determine it is safe to do so and, in doing so, will not create any other unacceptable hazards.

If handbrakes are required to hold self-propelled Classified Rolling Stock stationary on a grade on Sydney Metro rail infrastructure, the required hand brake and wheel chocks will be applied per Section 6.3.4 of this Standard. If a vehicle or vehicles run away, the PPO or nearest PO must be immediately informed.

Passenger rolling stock under test must apply all parking brakes when parked on Sydney Metro rail infrastructure.

6.3.18 Stabling Classified Rolling Stock on Sydney Metro rail infrastructure

Self-propelled Classified Rolling Stock may be stabled on Sydney Metro rail infrastructure only with the authority of the PPO.

If possible, Classified Rolling Stock may be stabled on Sydney Metro rail infrastructure on level track and inside portable devices to prevent vehicle movement, provided a risk assessment has been undertaken to determine it is safe to do so and, in doing so, will not create any other unacceptable hazards in the event of a vehicle being derailed.

6.4 Rolling Stock Safe Operating Arrangements

All Classified Rolling Stock operating on Sydney Metro rail infrastructure MUST comply with the following safe operating arrangements.


6.4.1 Sydney Metro Local Possession Authority (SMLPA)

A Sydney Metro Local Possession Authority (SMLPA) is the only endorsed method of worksite protection on Sydney Metro rail infrastructure. If there is a need to use a lower (less safe) form of protection for an activity, prior approval must be obtained from the Executive Director, Health and Safety (or delegate).

The rules for applying the SMLPA are provided in the SM-18-00058353 Rail Operating Procedure.


6.4.2 Operating Points

All points within the limits of an SMLPA, including, where provided, those that provide access to or from an SMLPA, must not be operated without the authority of the PPO.

	<p>Points must be inspected before every movement to ensure the switchblade is tight against the stock rail. The points must be secured before moving if the blade is not tight against the stock rail.</p>
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To ensure Operators of Classified Rolling Stock maintain sufficient route knowledge of the infrastructure they are operating on, they must be inducted and regularly briefed on the infrastructure status by the PPO or nominated representative.

6.5 Classified Rolling Stock and Vehicle Loading Conditions

	<p>If a vehicle is suspected of being overloaded, it must not be permitted to travel until its mass has been reduced to an acceptable level and authorised by the PO/PPO to resume operation.</p>
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Limited or no clearance between the suspension spring coils is a reasonable indication of overloading.

6.5.1 Permitted Rolling Stock

The permitted rolling stock is set out in SM-20-00046618 Minimum Rolling Stock Requirements Standard.

6.5.2 Out-of-Gauge Operation

Any proposal for the operation of an out-of-gauge load or vehicle on Sydney Metro rail infrastructure must be approved by the Sydney Metro Associate Executive Director of Engineering or nominated representative before the intended operation.

Out-of-gauge loads will only be considered for operation if the load cannot be reasonably reduced to within the limits of the permitted rolling stock outline.

All approvals for out-of-gauge loads or vehicles must apply individually, regardless of whether an identical or similar load or vehicle has been previously approved.

6.5.3 Eccentrically Loaded Rolling Stock

Some Classified Rolling Stock can be eccentrically loaded. For example, ballast wagons, as a part of their side-chute unloading process, can become eccentrically loaded to the point where there is an extreme risk of derailment due to excessive wheel unloading. In other applications, such as vehicles with jibs, booms and buckets, the vehicle can become unbalanced due to the lateral reach of the equipment away from the track centreline.

Operators must exercise care to avoid situations where improper eccentric loading is possible. In the case of cranes/vehicles with jibs, loads lifted must be limited. Where outriggers are provided, these must be deployed.

Rail clamps will be necessary on rolling stock where there is likely to be eccentric loading, such as with side dump spoil wagons, rail cranes or any rail vehicle carrying a moveable structure or bucket that can transfer the centre of gravity close to or even outside the rail. Any vehicle with the potential for eccentric loading must have some means of controlling that eccentric mass, whether by using rail clamps or other mechanical means such as outriggers.

The Rolling Stock Driver is responsible for removing or retracting rail clamps and outriggers before travel. Outriggers must be fitted with a locking device to prevent them from being unintentionally extended.

6.5.4 Use of Height Limiters

Classified Rolling Stock with elevating equipment such as jibs, buckets and scissor lift platforms must be fitted with a height limiting/locking device to prevent such equipment's unintentional raising during transit or even when stationary. The locking device on such elevating equipment must only be disengaged by a conscious decision to do so on the part of the Operator of the Classified Rolling Stock.

WARNING Extreme care must be taken when operating Classified Rolling Stock with elevating equipment under and around overhead traction equipment. Continuously operate the vehicle per the Limitations and Restrictions listed on the Sydney Metro Rolling Stock Acceptance Certificate and the requirements of Section 6.8.

6.5.5 Maintenance Vehicles Out-of-Gauge in Work Mode

Operators of Classified Rolling Stock that have work equipment that is out-of-gauge whilst in work mode must ensure that the equipment is retracted and locked in place for travel mode. Positive locking devices must be fitted to ensure that equipment cannot inadvertently extend and place the Classified Rolling Stock out-of-gauge or result in damage or injury.

6.5.6 Maximum Speed Limits

The maximum permissible speed for Classified Rolling Stock operating on Sydney Metro rail infrastructure must be limited to the lesser of the maximum permitted operating speed of the vehicle or:

- 5 km/h for track under construction,
- 15 km/h for the completed track

Unless otherwise approved by the Sydney Metro Associate Executive Director of Engineering or nominated representative. In all cases, speeds shown on speed signs must not be exceeded.

Testing of passenger rolling stock may be carried out at speeds greater than 15 km/h strictly in accordance with the Train Testing Plan submitted by the RSO and approved by Sydney Metro.

Each worksite is different and thus will have different operating conditions. Vehicle operators must know the worksite-specific operating conditions before commencing each shift.

Some road/rail vehicles, such as those fitted with double rear road wheels, have speed restrictions when traversing check rails, guard rails and level crossings. The Worksite Supervisors/Managers must refer to the conditions applied to the rolling stock for operating conditions applicable to specific vehicles or vehicle types at specific worksites.

Stand-alone trailers (i.e. a trailer not attached to a motorised vehicle), and trolleys must not travel any faster than walking pace and be fitted with an appropriate automatic parking brake.

6.6 Dynamic Train Testing of Passenger Rolling Stock

Passenger rolling stock must first obtain authority from the PPO before entering the Sydney Metro LPA for train testing.

Subsequent movements and testing within the SMLPA must be carried out per the approved Train Testing Plan, which must identify the following:

- Location of the test (track and kms)
- Dates and hours of test
- Train speed proposed.
- Whether in manual or automatic mode
- Name and phone number of PO/TO accompanying train.
- Procedures to be applied if the train becomes disabled.
- Proposed stabling arrangements.
- Risks identified and controls to be implemented.
- Any other details requested by Sydney Metro.

All operations of passenger trains on Sydney Metro's rail network must be carried out per the Rail Operating Conditions Standard and the Rail Operating Procedure.

6.7 Recovery of Rolling stock

All Classified Rolling Stock operating on Sydney Metro rail infrastructure must comply with the following rollingstock recovery arrangements.

6.7.1 Recovery of Derailed Classified Rolling Stock

Arrangements for re-railing and recovering derailed Classified Rolling Stock must be made in conjunction with the PPO and the TfNSW Rail Emergency Train Recovery Unit (RETRU).

Classified Rolling Stock involved in derailments must not be re-railed, recovered or moved until all investigation and regulatory requirements have been met, inspected and certified by an ICP, and repaired or made safe to move.

The PPO will arrange to move Classified Rolling Stock after it has been certified to move.

6.7.2 Recovery of Disabled, Defective or Damaged Rolling Stock

The PPO will make arrangements to remove Classified Rolling Stock that becomes disabled or is found to be defective or damaged while operating or travelling on Sydney Metro rail infrastructure.

Where it is necessary for defective Classified Rolling Stock to leave a Sydney Metro rail site and enter another RTO's Network, the movement cannot take place until the other RTO authorises and arranges the movement.

The PPO will arrange to move Classified Rolling Stock that has become disabled or is found defective or damaged while operating or travelling on Sydney Metro rail infrastructure.

6.8 Operating on or Operating Around Electrical Equipment

All electrical equipment and wiring must be considered 'live' unless an electrical isolation Permit has been issued by an authorised Electrical Representative of the asset's owner. All work and rail vehicle operations on and around electrical infrastructure must be planned and carried out per the Electrical Safety Rules of the asset owner/operator.

6.9 Protection of Rail Infrastructure

All movement of rail-mounted plant and equipment must be undertaken that does not damage rail infrastructure. In particular, placing and removing vehicles on track must be done at authorised locations, and care must be taken to avoid damage to the rails. All damage to rail infrastructure that is observed must be immediately reported to the PPO, who will determine what response actions are required.

6.9.1 Environmental Spills

Discharge or spills within the worksite of potentially contaminating or hazardous material such as oils, fuels, oxidising chemicals, gases, etc., must be reported immediately to the PPO or a competent person delegated by the PPO to have risk management procedures implemented.

6.10 Carriage of Dangerous Goods

Commercial dangerous goods cannot be conveyed on Classified Rolling Stock on Sydney Metro managed and controlled rail infrastructure without written approval from the Sydney Metro Executive Director, Health and Safety (or delegate).

Materials classified as dangerous goods being utilised by rolling stock (e.g. fuels) and carried by that rolling stock on Sydney Metro rail infrastructure must be stored and retained per that required by the Australian Code of Practice for the Transport of Dangerous Goods by Road and Rail. Each worksite must have appropriate safety procedures in place in case of a dangerous goods spill or a rail incident involving a vehicle carrying dangerous goods.

6.11 Daily Pre-work Inspection

Classified rolling stock must have a documented daily inspection before commencing operation on Sydney Metro rail infrastructure. It is the responsibility of the Rail Transport Operator, or a competent delegate, to ensure that inspections are carried out and recorded by the rolling stock driver using a standardised format. The rolling stock driver must retain the original for their auditable records, and a copy must be retained on the vehicle.

7. Related Documents and References

Related documents and references

- [SM-20-00046618 Minimum Rolling Stock Requirements Standard](#)
- [SM-18-00058353 Rail Operating Procedure](#)
- [SM-20-00046300 Rolling Stock Acceptance Procedure](#)
- [SM-19-00053243 Crisis Management Procedure](#)
- [SM-17-00000203 Sydney Metro Glossary](#)

8. Superseded Documents

Superseded documents

There are no documents superseded as a result of this document.

9. Document History

Version	Date of approval	Notes
1.0	8 June 2018	New IMS document.
2.0	24 April 2020	Update to reference Rolling Stock Acceptance procedure and supporting documents. Updates to reflect new organisation structure.
3.0	30 July 2021	Updates to include requirements post-implementation on CSW
4.1	16 February 2024	Minor update – Approved by A/Executive Director Health and Safety – Carmel Soccorsi.
5	28 October 2025	Reviewed and revised to include: <ul style="list-style-type: none"> • Clear definitions of roles and associated responsibilities. • Consistency of key terms and definitions. Refer to Briefing Note #: BN-SM-25-001046 (SM-25-00203044).