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AUSTRALIAN RAIL INDUSTRY STANDARDS ORGANISATION

AS 7510.4

Braking Systems – Part 4: Infrastructure Maintenance Rolling Stock

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Development of this Standard was prepared by an Australian Rail Industry Standards Organisation (ARISO) Development Group consisting of representatives from the following organisations:

Rail Confidence, Metro Trains, Queensland Rail, Transport for NSW, and ARTC.

The Rolling Stock Standing Committee verified that ARISO's accredited process was followed in developing the product, before the ARISO Board approved the document for publication.

ARISO wishes to acknowledge the positive contribution of subject matter experts in the development of this Standard. Their efforts ranged from membership of the Development Group through to individuals providing comments on a draft of the Standard during the open review.

I commend this Standard to the Australasian rail industry as it represents industry good practice and has been developed through a rigorous process.



Alan Fedda
Chief Executive Officer
Australian Rail Industry Standards Organisation

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AS 7510.4 PREVIEW ONLY

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2026	19 October 2026	This document has been reviewed to ensure it remains relevant and applicable. The latest review assessed the content, confirming that while updates were made to align with current industry practices, technologies, and regulatory requirements, the original authorship and copyright have been acknowledged as required.

Approval

Name	Date
Australian Rail Industry Standards Organisation Board	19 October 2026

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AS 7510.4 PREVIEW ONLY

Preface

This Standard was prepared by the Braking Systems – Part 4: Infrastructure Maintenance Rolling Stock Development Group, overseen by the ARISO Rolling Stock Standing Committee.

This Standard forms Part 4 of the AS 7510 *Railway Rolling Stock – Braking Systems* series and should be read in conjunction with the other parts of the series where applicable.

This Standard has been updated to be consistent with the changes introduced to AS 7510.2:2024.

Objective

The objective of this Standard is to provide safety benefits in that proper braking performance contributes to the prevention of collisions or derailments of railway rolling stock by providing controls for known hazards.

This Standard describes minimum standards for brake performance, features and compatibility for the braking systems of infrastructure maintenance rolling stock.

This Standard is intended to complement the rolling stock compliance certification process outlined in AS 7501 for new and/or modified infrastructure maintenance rolling stock.

Compliance

There are four types of provisions contained within Australian Standards developed by ARISO:

(a) Requirements.

(b) Recommendations.

(c) Permissions.

(d) Constraints.

Requirements – it is mandatory to follow all requirements to claim full compliance with the Standard. Requirements are identified within the text by the term ‘shall’.

Recommendations – do not mention or exclude other possibilities but do offer the one that is preferred. Recommendations are identified within the text by the term ‘should’.

Recommendations recognize that there could be limitations to the universal application of the control, i.e. the identified control is not able to be applied, or other controls are more appropriate or better.

Permissions – conveys consent by providing an allowable option. Permissions are identified within the text by the term ‘may’.

Constraints – provided by an external source such as legislation. Constraints are identified within the text by the term ‘must’.

Using this Standard

Appendices in ARISO Standards may be designated either “normative” or “informative”. A "normative" appendix is an integral part of a Standard and compliance with it is a requirement, whereas an "informative" appendix is only for information and guidance.

ARISO Standards identify known hazards relevant to the railway industry. Appendix A provides a non-exhaustive list of hazards relevant to the scope of this Standard.

AS 7510.4 PREVIEW ONLY

Commentary

Commentary *C Preface*

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of the Standard.

AS 7510.4 PREVIEW ONLY

Table of Contents

Section 1 Scope and general 6
1.1 Scope 6
1.2 Infrastructure maintenance rolling stock types and applicability 7
1.3 Normative references 8
1.4 Defined terms and abbreviations 8
Section 2 Brake system 12
2.1 General 12
2.2 Air brake system 13
2.3 Hydraulic brake systems 15
2.4 Dynamic brake system 16
2.5 Emergency cock/button 16
2.5.1 General 16
2.5.2 Emergency stop 16
2.6 Couplings between vehicles 17
2.7 Coupled operation braking systems 18
2.8 Trolleys, trailers, motorized trolleys and section cars 18
2.8.1 General 18
2.8.2 Trolleys & motorized trolleys 18
2.8.3 Trailers 19
2.8.4 Section cars 19
Section 3 Automatic air brake 20
Section 4 Non-automatic brake 21
Section 5 Park brake 22
5.1 General 22
5.2 Manual park brake 22
5.3 Powered park brake 23
5.4 Automatic park brake 23
Section 6 Brake force application 24
6.1 General 24
6.2 Composite brake blocks and brake disc pads 24
6.3 Brake discs 24
6.4 Cast iron brake blocks 24
Section 7 Braking system performance 25
7.1 General 25
7.2 Self-propelled & multiple unit operation 25
7.3 Self-propelled coupled consist operation 27
7.4 Transfer mode operation within a locomotive-hauled train consist 28
7.5 Park brake performance 28
Section 8 Calculation of braking system performance 29

AS 7510.4 PREVIEW ONLY

8.1 Stopping brake calculation 29
8.2 Park brake calculation 29
8.3 Coefficient of friction 29
Section 9 Validation of braking function and performance 30
9.1 General 30
9.2 Static brake type & routine tests 30
9.2.1 General requirements 30
9.2.2 Static brake type tests 31
9.2.3 Static brake routine tests 31
9.2.4 Static air brake test content 31
9.2.5 Static hydraulic brake test content 32
9.3 Dynamic braking performance test 32
9.3.1 General 32
9.3.2 Dynamic braking performance test content 32
9.4 Park brake holding testing 33
9.5 Coupled consist braking validation 33
9.6 Multiple vehicle operation 33
9.7 Single-car test 33
9.7.1 Requirements 34
Section 10 Brake system software 35
Section 11 Maintenance 36
11.1 General 36
11.2 Function checks – Serviceability 36
11.3 Abrasive brake blocks 36
Appendix A Hazard Register (Informative) 37
Bibliography (Informative) 39

Equations

Equation 1 Stopping Distance 26

Tables

Table 1 Minimum Braking Equipment by Infrastructure Maintenance Rolling Stock Category 7
Table 2 Stopping Distance on Level Track 25
Table 3 Stopping Distance on Level Track – Low Speed Infrastructure Maintenance Rolling Stock that Operates Solely within Worksites 27

AS 7510.4 PREVIEW ONLY

Section 1 Scope and general

1.1 Scope

This document applies to infrastructure maintenance rolling stock that is:

(a) new;

(b) modified affecting braking system compliance; and/or

(c) is intended to operate on a network on which it has not previously operated.

NOTE:

It is recognized that across the ANZ rail industry, existing infrastructure maintenance rolling stock can have braking system requirements different to this document due to the age of the fleets and the previous organizational structures (e.g., fully integrated state government owned and operated railways). These differences can be a result of braking system requirements designed to earlier standards such as previous versions of AS 7510.4, the Railways of Australia manual or legacy standards from prior organizational structures.

It is also recognized that modifications conducted on existing infrastructure maintenance rolling stock affecting braking system compliance defined in this document could only affect certain requirements and not achieve full compliance with the requirements of this document.

An example of these types of modifications can be a change of end cock, installation of a different handbrake or replacement of a legacy brake valve with an updated/modern version.

For guidance on assessing the compliance requirements for modifications conducted on infrastructure maintenance rolling stock, the derogation process as defined in AS 7501 is a recommended method of assessing non-conformances to mandatory requirements where it is deemed not practicable to change the design to comply with the requirements.

This document covers the design, construction and maintenance of braking systems fitted to infrastructure maintenance rolling stock.

This includes, but is not limited to:

(d) tampers;

(e) ballast regulators;

(f) ballast cleaners;

(g) rail grinders;

(h) dynamic track stabilizers;

(i) overhead wiring vehicles; and

(j) light on-track equipment (e.g., trolleys, trailers, section cars and similar devices).

Infrastructure maintenance rolling stock is used to carry out various work on or around track and rail infrastructure. Major types include track maintenance machines and light on-track equipment such as trolleys, trailers, section cars and support frames.

The document does not cover:

(k) the operation of rolling stock, including network safeworking rules and route standards;

(l) infrastructure maintenance rolling stock used on light rail or cane railway networks, although provisions of this document can be applied to such systems as deemed appropriate by the relevant rolling stock operator (RSO) and/or rail infrastructure manager (RIM);

AS 7510.4 PREVIEW ONLY

(m) freight wagons used to carry track materials, which are covered under AS 7510.2; and

(n) road rail vehicles which are covered under AS 7502.

1.2 Infrastructure maintenance rolling stock types and applicability

Infrastructure maintenance rolling stock are categorized as follows:

(a) Infrastructure maintenance rolling stock:

(i) required to be hauled in train formation (automatic air brake);

(ii) required to operate coupled with other vehicles where inter-vehicle braking is controlled using an automatic brake; and/or

(iii) required to operate as a standalone vehicle.

(b) Equipment that operates solely on rail and can be readily removed from the track (i.e. trolleys, motorized trolleys, trailers, section cars).

Where a vehicle is not fitted with a particular brake system type, only the requirements relevant to the fitted systems and intended interfaces apply.

Table 1 Minimum Braking Equipment by Infrastructure Maintenance Rolling Stock Category

Braking function	Coupled infrastructure maintenance rolling stock in train formation (network operation)	Coupled infrastructure maintenance rolling stock (Worksite operation only)	Standalone vehicle (not hauled)	Trailer (incl. non-RRV hauled trailers)	Trolley/support frame & motorized trolley	Section car
Automatic air brake (AS 7510.1:2026 & AS 7510.2:2024)	x	(o)				
Automatic brake (fail-safe)		x				
Service brake	x	x	x	x	x	x
Park brake	x	x	x	x	x	x

Legend: x = required; (o) = optional; blank = not required/not applicable

NOTE:

For trolleys, support frames and section cars, the fail-safe brake system provides both service and parking functions and applies automatically when operator control is released.

AS 7510.4 PREVIEW ONLY