AUSTRALIAN RAIL INDUSTRY STANDARDS ORGANISATION

AS 7507

Rolling Stock Outlines

STANDARDS

Australian STANDARD

Advancing safety and productivity

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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:

ARTC, Atkinsrealis, Aurizon, DIT SA, DPT VIC, Egis, IRT Monash Uni, Jacobs, Pacific National, Plasser, PTA WA, QUBE, Queensland Rail, Sydney Metro, TfNSW, UGL Regional Linx, Vic Transport, and WSP.

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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Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2026	18 June 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	18 June 2026

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Preface

This Standard was prepared by the Rolling Stock Outlines Development Group, overseen by the ARISO Rolling Stock Standing Committee.

This updated version explains the different outlines (static, kinematic, and swept) in more detail and adds set methods for calculations and testing. It also increases the number of reference vehicles and improves rules for special parts like doors, pantographs, and fittings. Compared to the previous version, this document is more detailed and focuses more on safety, risk and ongoing compliance over the life of the train.

Objective

The objective of this Standard is to define the requirements for assessing whether the physical size and predicted kinematic behaviour of candidate rolling stock comply with the rolling stock outlines specified by the Rail Infrastructure Manager (RIM).

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.

For compliance purposes, where a recommended control is not applied as written in the standard it could be incumbent on the adopter of the standard to demonstrate their actual method of controlling the risk as part of their WHS or Rail Safety National Law obligations. Similarly, it could also be incumbent on an adopter of the standard to demonstrate their method of controlling the risk to contracting entities or interfacing organisations where the risk may be shared.

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’.

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

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.

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Section 1 Scope and general

1.1 Scope

This document specifies reference vehicle outlines defined by prescribed physical dimensions, kinematic movements and the resulting three-dimensional swept envelopes generated during operation on straight and curved track in both horizontal and vertical planes.

The document specifies criteria for assessing candidate rolling stock to ensure that their physical dimensions, kinematic movements and throw effects remain within the swept envelopes generated by the nominated reference vehicle(s) for the relevant rail network, thereby preventing infringement of the reference vehicle outlines.

This document applies to the design, construction, maintenance and operation of passenger, locomotive, infrastructure maintenance and freight rolling stock, under all conditions of loading and wear.

This document applies to:

(e) new rolling stock;

(f) existing rolling stock undergoing modification where the modification can possibly affect outline characteristics; and

(g) rolling stock proposed to operate on a different network or on a different route within the same network.

This document is not intended for determining minimum clearances such as between tread plates and platform copings where tighter alignment and lower speeds require a different approach.

Infrastructure related requirements for rail wear, track tolerances, structure outlines, etc. and the magnitude of clearances between vehicles and structures, passing vehicles and electrical clearances, are treated in infrastructure standards.

This document does not cover:

(a) rolling stock used on light rail, heritage railways operating on private or isolated railways, monorail and cane railway networks;

(b) infrastructure rolling stock when in work mode;

(c) out of gauge rollingstock; or

(d) rolling stock loading outlines.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

- AS 7501:2019, Rolling Stock Compliance Certification
- AS 7509:2017, Rolling Stock Dynamic Behaviour
- AS 7522:2025, Access and Egress
- AS 7633:2026, Railway Infrastructure – Clearances
- AS 7726:2023, Interface between train control systems and rolling stock

NOTE:

Documents for informative purposes are listed in a Bibliography at the back of the Standard.