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AUSTRALIAN RAIL INDUSTRY
STANDARDS ORGANISATION

AS 7641

Rail Friction Management

STANDARDS



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:

Airlube, ARC Infrastructure, Aurizon, Bradken, Centre for Railway Engineering, CQU, Department of Transport and Planning Victoria, Jacobs, KiwiRail, Metro Trains Melbourne, Public Transport Authority, Queensland Rail, Sydney Trains, Transport for NSW.

The Infrastructure 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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2026	10 September 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	10 September 2026

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Preface

This Standard was prepared by the Rail Friction Management Development Group, overseen by the ARISO Infrastructure Standing Committee.

The major changes in this edition are as follows:

- (a) Revision of the Objective and Scope sections to improve clarity and understanding.
- (b) Transfer of guidance and explanatory material that does not constitute a requirement to an appendix.
- (c) Inclusion of requirements relating to top-of-rail (TOR) friction management requirements.

Objective

This Standard establishes the functional and performance requirements, approved configuration for the design and installation of rail friction management systems, comprising of gauge face rail lubricators and top-of-rail friction modifiers.

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.

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 rail friction levels for lubricated rail curves and top of rail friction modification (TORFM) and provides guidance on wayside lubrication and friction modification systems design to achieve these friction levels.

Friction management using solid or fluid (oil, grease, etc.) substances at the wheel-rail interface includes the following aspects:

- (a) Lubrication of the wheel flange/rail gauge corner (active interface), commonly referred to as flange or rail lubrication.
- (b) Friction modification of the top-of-rail/wheel tread interface, commonly referred to as top of rail friction management.

Onboard- or vehicle-mounted lubrication system requirements are not covered in this document.

This document does not specifically cover light rail, high-speed rail, isolated heritage and tourist railways and rolling stock but items from this document may be applied to such systems and/or rolling stock as deemed appropriate by the relevant rail transport operator.

1.2 Normative references

There are no normative references in this document.

NOTE:

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

1.3 Defined terms and abbreviations

For the purposes of this document, the following terms and definitions apply:

1.3.1

CCTV

closed-circuit television

1.3.2

CoF

coefficient of friction

1.3.3

effective carry distance

distance from the point of application over which a lubricating substance maintains the relevant wheel-rail interface coefficient of friction within the specified range

Note 1 to entry: The actual physical carry distance can possibly be greater where product remains present but no longer achieves the specified friction performance.

1.3.4

friction management systems

multiple lubricant dispensing equipment within a given railway network segment that, by their placement, comprised of location, spacing and lubricant factors, is designed and maintained to meet defined performance criteria

Note 1 to entry: Measurement of track and wheel flange movement factors is designed to reduce occurrence of wheel and rail wear and wheel/rail interaction noise.