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AUSTRALIAN RAIL INDUSTRY
STANDARDS ORGANISATION

AS 7722

EMC 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:

Queensland Rail, Sydney Trains, Jacobs, John Holland, Ricardo Rail Australia Pty Ltd, and UGL.

The Train Control Systems 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	19 February 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 February 2026

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Preface

This Standard was prepared by the EMC Management Development Group, overseen by the ARISO Train Control Systems Standing Committee.

Changes from previous editions of this Standard include the following:

- (a) The inclusion of an EMC threat matrix.
- (b) Updated information to EMC legislative requirements.
- (c) Inclusion of the EMC lifecycle workflow process.
- (d) EMC responsibilities and competency requirements.

Objective

The objective of this Standard is to define requirements for the management of electromagnetic emissions and susceptibility of devices used in the railway so that all systems used in the railway are electromagnetically compatible.

These requirements define the minimum effort required to manage the risk associated with EMC and to ensure compliance with legal and regulatory, safety and reliability requirements. Particular situations could require more detailed assessment.

Advisory information is also provided to support mandatory requirements.

Rail Transport Operators (RTOs) are responsible to ensure that any EMC risks introduced by new or altered systems and products are controlled so far as is reasonably practicable (SFAIRP).

Compliance

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

- (e) Requirements.
- (f) Recommendations.
- (g) Permissions.
- (h) 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’.

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.

ARISO Standards address known hazards within the railway industry. Hazards, and clauses within this Standard that address those hazards, are listed in Appendix F.

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

The scope of this document covers requirements for the management of EMC as applicable to:

- (a) planning EMC management;
- (b) introduction of new rail assets (new products or integrated systems);
- (c) alterations to existing rail assets (existing products or integrated systems);
- (d) novel alterations to existing rail system configurations or layouts;
- (e) maintenance of operational rail systems; and
- (f) decommissioning of rail systems.

The scope of this document is limited to rail systems and assets under the scope and control of Australian railway networks. This scope includes potential EMC risks existing or introduced between the Australian railway network and any third parties, as a result of action by Australian railway network assets, for example as discussed in AS 2344:2016.

This document will assist RTOs to apply harmonized management of EMC risks to meet their legal and regulatory obligations.

Heritage railways are excluded from this document, unless there is a physical and operational interface that could affect EMC.

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 2344:2016, *Limits of electromagnetic interference from overhead a.c. powerlines and high voltage equipment installations in the frequency range 0.15 MHz to 3000 MHz*
- AS/NZS 61000, *Electromagnetic compatibility – Parts 1 to 4*
- AS 7501:2019, *Rolling stock compliance certification*
- AS 7505:2024, *Signalling detection interface*
- AS/NZS 60255.26:2025, *Measuring Relays and Protection Equipment. Part 26: EMC*
- IEC 60571:2012, *Railway applications – Electronic equipment used on rolling stock*
- IEC 62236:2018, *Railway Applications - Electromagnetic Compatibility – Parts 1 to 5*
- EN 45502-2-1:2003, *Active implantable medical devices - Part 2-1: Particular requirements for active implantable medical devices intended to treat bradyarrhythmia (cardiac pacemakers)*
- EN 45502-2-2:2008, *Active implantable medical devices - Part 2-2: Particular requirements for active implantable medical devices intended to treat tachyarrhythmia (includes implantable defibrillators)*
- EN 50343:2025, *Railway applications – Rolling stock – Rules for installation of cabling*
- *Radiation Protection Series S-1, Standard for Limiting Exposure to Radiofrequency Fields - 100 kHz to 300 GHz*