



**Rolling stock lighting and  
visibility**



AS 7531 PREVIEW ONLY

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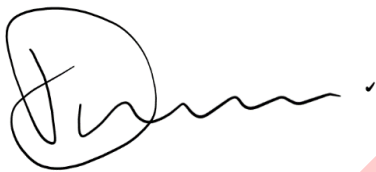
Development of this Standard was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Aurizon, RTBU, TfNSW, TTM, Rail Department of Transport (Vic), Metro Trains Melbourne, Department of Infrastructure & Transport (SA), Pacific National, ARTC, BRAEMAC, J.W. Speaker, P7 Safety, ONRSR, Monash Institute of Railway Technology.

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

RISSB 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.



**Damien White**  
Chief Executive Officer  
Rail Industry Safety and Standards Board

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2023	21 December 2023	Added principles for design of rolling stock conspicuity. Additional content provided for LED lighting. Improved livery design requirements. Additional maintenance planning requirements
2015	19 June 2015	Consolidated four versions. Updated references to hazards. Adjusted some content to make it easier to measure compliance with the performance requirements. Adjusted some content to ensure that the standard is technology-agnostic.
2007	17 December 2007	Change from Code Management Company to RISSB Title change to AS 7531.1:2007, AS 7531.2:2007, AS 7531.3:2007, AS 7531.4:2007.
2006	10 October 2006	First edition

## Approval

Name	Date
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## Preface

This standard was prepared by the Rolling stock lighting and visibility Development Group, overseen by the RiSSB Rolling stock Standing Committee.

## Objective

The objective of this Standard is to provide technical requirements for interior and exterior rolling stock lighting and visibility. This includes conspicuity of rolling stock in day and night times and consideration of environmental factors affecting visibility of rolling stock.

Technical changes from previous editions of this Standard include:

- (a) Additional content provided for LED lighting;
- (b) additional requirements for forward visibility lights;
- (c) livery design considerations; and
- (d) additional maintenance planning requirements.

The requirements and recommendations provided in this Standard are derived from current validated practice in the Australian rail industry. This Standard supports innovation whilst remaining technology agnostic by providing permissive clauses and guidance material that RTOs should utilise to supplement the requirements and recommendations where deemed appropriate to do so by the applicable RTO.

## Compliance

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

- (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’.

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.

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

**Appendices** in RiSSB 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 Standard applies to lighting and visibility requirements for new and modified self-propelled locomotive, freight, passenger, road rail vehicles and infrastructure maintenance rolling stock.

Where requirements apply to wagons and other non-self-propelled rolling stock, it is indicated within the specific section.

This document is applicable for rolling stock operating up to 160 km/h nominal maximum speed. The document covers the design of lighting arrangements and systems, the design and colour application of livery and maintenance on rolling stock.

This Standard does not specifically cover rolling stock used on light rail, cane railway and monorail networks, but items from this Standard may be applied to such systems as deemed appropriate by the relevant rail transport operator.

#### Commentary C1.1

This Standard forms part of a multifactor approach to the improvement of overall level crossing safety. Additional strategies considered as part of the overall risk minimisation approach in conjunction with this Standard include the following:

- Level crossing elimination.
- Level crossing design.
- Corridor design and maintenance.
- Driver behaviour safety campaigns and educational reform.
- Signage and indications to road users.
- Operation of rolling stock, including the use of audible warning devices.
- Installation and operation of audible alarms at level crossings.

Consideration of causal factors of risks that are not related to lighting and visibility of rolling stock are not included in the scope of this Standard.

### 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 1680.2.1 Interior lighting - Circulation spaces and other general areas.
- AS 1680.2.2 Interior lighting - Office and screen-based tasks.
- AS 1680.2.4 Interior lighting - Industrial tasks and processes.
- AS 60529 Degrees of protection provided by enclosures (IP Code)
- AS 7502 Road Rail Vehicles.
- AS 7658 Level crossings – rail industry requirements.
- AS 7722 EMC Management
- AS/NZS 1906.1 Retroreflective materials and devices for road traffic control purposes - Retroreflective sheeting.
- AS/NZS 1906.2 Retroreflective materials and devices for road traffic control purposes - Retroreflective devices (non-pavement application).
- APTA SS-PS-004-99 Standard for low-location access path marking.
- Australian Government Australian Design Rules for road vehicles (ADR).