



Corridor Infrastructure – Track Classification



Notice to users

This RISSB product has been developed using input from rail experts from across the rail industry and represents good practice for the industry. The reliance upon or manner of use of this RISSB product is the sole responsibility of the user who is to assess whether it meets their organisation's operational environment and risk profile.

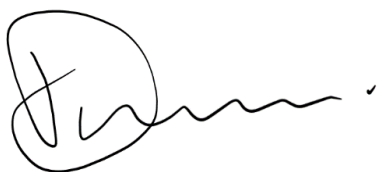
Development of this Standard was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

QUBE, ARTC, Yarra Trams, PTA WA, TfNSW, Roy Hill Iron Ore, DTP Victoria, Queensland Rail, and Monash Institute of Railway Technology.

The Infrastructure 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

Keeping RISSB products up-to-date

Products developed by RISSB are living documents that reflect progress in science, technology and systems. To maintain their currency, RISSB products are periodically reviewed, and new editions published when required. Between editions, amendments may be issued. Products developed by RISSB could also be withdrawn.

It is important that readers assure themselves that the RISSB product they are using is current, including any amendments that have been issued since the product was published. Information about RISSB products, including amendments, can be found by visiting www.rissb.com.au.

RISSB welcomes suggestions for improvements and asks readers to notify us immediately of any apparent inaccuracies or ambiguities. Members are encouraged to use the change request feature of the RISSB website at: <http://www.rissb.com.au/products/>. Otherwise, please contact us via email at info@rissb.com.au or write to Rail Industry Safety and Standards Board, PO Box 518 Spring Hill Qld 4004, Australia.

AS 7630:2024

Corridor Infrastructure – Track Classification

Document details

First published as: AS 7630:2010

ISBN: 978-1-76139-630-4

Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2024	24 May 2024	Revised edition of AS 7630:2017
2017	30 January 2017	Standard review and re-issued (new format, Inclusion of “P” Forces)
2010	17 March 2010	Initial version

Approval

Name	Date
Rail Industry Safety and Standards Board	23 April 2024

Copyright

© RISSB

All rights are reserved. No part of this work can be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of RISSB, unless otherwise permitted under the Copyright Act 1968.

Preface

This Standard was prepared by the Corridor Infrastructure – Track Classification Development Group, overseen by the RISSB Infrastructure Standing Committee.

Objective

The objective of this Standard is to:

- provide a nationally consistent performance-based method for track classification that is applicable to all new, upgraded, and existing heavy railways in Australia;
- enable RIMs to allocate a track classification to all heavy railway track sections for which they are responsible;
- provide guidance for owners and operators of rolling stock to more readily determine if their rolling stock can physically access a track corridor(s), for which any RIM is responsible, by adopting the concept of route availability in addition to the track classification;
- encourage rail transport operators (RTO)s to consider, when acquiring new assets, or replacing or upgrading existing assets, how those assets could be configured to lead to increased interoperability within their own railway network, and with other railway networks; and
- through improved interoperability, increase the railway industry's competitiveness and range of commercial opportunities.

This Standard is a revision of the previously published 2017 version. It includes updates to provide additional guidance on functional and performance requirements for track classification. It introduces the consideration of route availability for rolling stock access, and the corresponding infrastructure considerations for track structure, earthworks, civil structures, and wayside assets contained within the heavy railway corridor.

Principles of Track Classification

The concept of route availability encourages interoperability, a key precept of the National Rail Action Plan. This approach allows the description of the track section classification to be used by the owners and operators of rolling stock to more readily assess whether their rolling stock can physically access a given track section, or series of track sections, forming an overall journey.

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 with contracting entities or interfacing organisations where the risk may be shared.

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.

Contents

Section 1	Scope and General	7
1.1	Scope	7
1.2	Normative references	7
1.3	Defined terms and abbreviations.....	8
Section 2	Application of this Standard	12
2.1	General considerations	12
Section 3	Track classification parameters	13
3.1	General.....	13
3.2	Track gauge	13
3.3	Reference rolling stock outline	13
3.4	Ruling grade	13
3.5	P/D ratio	14
3.5.1	P/D limits	14
3.6	Lateral wheel to rail force	14
3.7	Static axle load (P) limit.....	14
3.8	P ₂ force	15
3.8.1	Track parameters	15
3.8.2	Speed.....	15
3.8.3	P ₂ force limit.....	15
3.9	Wheel profile geometry and hardness.....	15
3.10	Minimum allowable axle spacing	15
Section 4	Method of track classification	16
4.1	Route availability.....	16
4.2	Track section classification.....	16
Section 5	Documentation of track classification.....	18
5.1	Record keeping.....	18
5.2	Accessibility of records.....	18
5.3	Updating of records	18
Section 6	Design considerations for railway infrastructure.....	19
6.1	Track structure	19
6.2	Earthworks and drainage	19
6.3	Railway structures.....	19
6.4	Tunnel Structures.....	19
6.5	Corridor boundaries and access.....	19
6.6	Below ground utilities	20
6.7	Wayside assets	20
6.8	Electric traction infrastructure	20
6.9	Level crossings.....	20

Appendix A	Worked Example of P_2 force calculation (Informative)	21
Appendix B	Definition of responsibilities (Informative)	22
B.1	Rail infrastructure manager (RIM)	22
B.2	Rolling stock operator (RSO)	23
Appendix C	Track classification table (Informative)	24
Appendix D	Bibliography (Informative)	25

Figures

Figure 1 Track classification matrix	16
--------------------------------------	----

Tables

Table 1 Typical P/D Ratio Limits	14
----------------------------------	----

Section 1 Scope and General

1.1 Scope

The purpose of this Standard is to set-out the guiding principles and parameters that shall be used by a RIM to classify heavy railway networks whilst also considering the concept of route availability for rolling stock.

The intent is to provide a consistent track classification method that is used by RTOs to:

- (a) design, construct and/or upgrade corridor infrastructure to a standard set of parameters that support network interoperability; and
- (b) assess whether rolling stock can access a given track section or series of track sections that forms an overall journey.

Inclusion of route availability in the track classification method enables the consideration of physical and engineering parameters that govern accessibility of rolling stock to a section of track.

This Standard applies to all existing, upgraded and new heavy rail networks in Australia having a track gauge greater than 600 mm.

This Standard does not apply to light rail corridors and high-speed rail corridors.

This Standard is not intended to cover vertically integrated railways.

This Standard is the lead standard for track infrastructure and should influence the technical requirements for all other track related disciplines.

By following this Standard, the RIM shall classify track sections that are under their responsibility.

This Standard does not specifically cover isolated heritage and tourist railway network interoperability, but items from this Standard may be applied to such systems and/or rolling stock as deemed appropriate by the relevant rail transport operator.

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 1597, *Precast Reinforced Concrete Box Culverts*
- AS 1742.7, *Manual of Uniform Traffic Control Devices Railway Crossings*
- AS 2566.1, *Buried Flexible Pipelines – Part 1: Structural Design*
- AS 3725, *Design for Installation of Buried Concrete Pipes*
- AS 4678, *Earth-Retaining Structures*
- AS 4799, *Installation of Underground Utility Services and Pipelines within Railway Boundaries*
- AS 5100, *Bridge Design series*
- AS 7503, *Rail Vehicle Identification and Markings*
- AS 7507, *Rolling Stock Outlines*
- AS 7508, *Track Forces and Stresses*
- AS 7514, *Rolling stock – Wheels*
- AS 7636, *Railway Structures*
- AS 7637, *Railway Infrastructure – Hydrology and Hydraulics*