AS 7638:2022

Australian STANDARD®

Railway earthworks

RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Infrastructure Standard

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This Australian Standard® AS 7638 Railway earthworks was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

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ARTC	TfNSW	

The Standard was approved by the Development Group and the Infrastructure Standing Committee in March, 2022. On March 30, 2022 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently validated before being approved.

Development of the Standard was undertaken in accordance with RISSB's accredited process. As part of the approval process, the Standing Committee verified that proper process was followed in developing the Standard.

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 comment 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.

Deb Spring
Chief Executive Officer
Rail Industry Safety and Standards Board

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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.

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Document details

First published as: AS 7638:2022 Railway earthworks

ISBN 978 1 76113 691 7

Document history

Publication Version	Effective Date	Reason for and extent of change(s)
AS 7638:2022	April 27, 2022	New edition 2022
AS 7638:2013	June 05, 2013	Superseded (aged review)

Approval

Name	Date
Rail Industry Safety and Standards Board	April 27, 2022

Copyright

This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 7638 Railway earthworks. Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document.

Objective

This Standard is to describe the requirements for the design, construction and maintenance of earthworks in connection with railway operations in Australia.

Compliance

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

1. Requirements.
2. Recommendations.
3. Permissions.
4. 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 recognise 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 / hazardous events within the railway industry. Where applicable to this Standard, these are listed in Appendix A: Australian Rail Risk Model (ARRM).

Contents

Appendix Contents

1 Scope and general

1.1 Scope

1.1.1 This Standard provides a whole-of-life approach to rail structures, and covers the general management requirements, material composition, manufacturing, construction, maintenance, decommissioning and disposal of rail structures used in Australian rail operations. This includes:

(a) cuttings and excavations;

(b) embankments;

(c) sub-ballast / capping layer.

1.1.2 This Standard should be used for new earthworks and modifications to existing earthworks. RIMs may also use this Standard when assessing existing earthworks.

1.1.3 This Standard covers railways classified in AS 7630 including light rail networks, except for high speed passenger lines.

1.1.4 This Standard does not cover ballast, rails, sleepers, or rail jewellery.

1.1.5 This Standard is not specifically intended to cover cane railways or heritage railways operating on private reservation, however items from this Standard may be applied to such systems as deemed appropriate by the relevant railway infrastructure manager (RIM).

1.1.6 This Standard is also not intended for use in the design of the following:

(a) Works intended to be of a temporary or emergency nature.

(b) Piled foundations.

(c) Flood levee banks.

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:

(a) AS 1141 Methods for sampling and testing aggregates

(b) AS 1170 Structural design actions, Part 4: Earthquake actions in Australia

(c) AS 1289 Methods of testing soils for engineering purposes

(d) AS 1726 Geotechnical site investigations

(e) AS 2187 Explosives – Storage, transport and use

(f) AS 3706 Geotextiles - Methods of test Determination of durability series

(g) AS 4799 Installation of underground utility services and pipelines within railway boundaries

(h) AS 5100 Bridge design series

(i) AS 7630 Railway infrastructure – Track classification

(j) AS 7664 Railway signalling cable routes, cable pits, and foundations