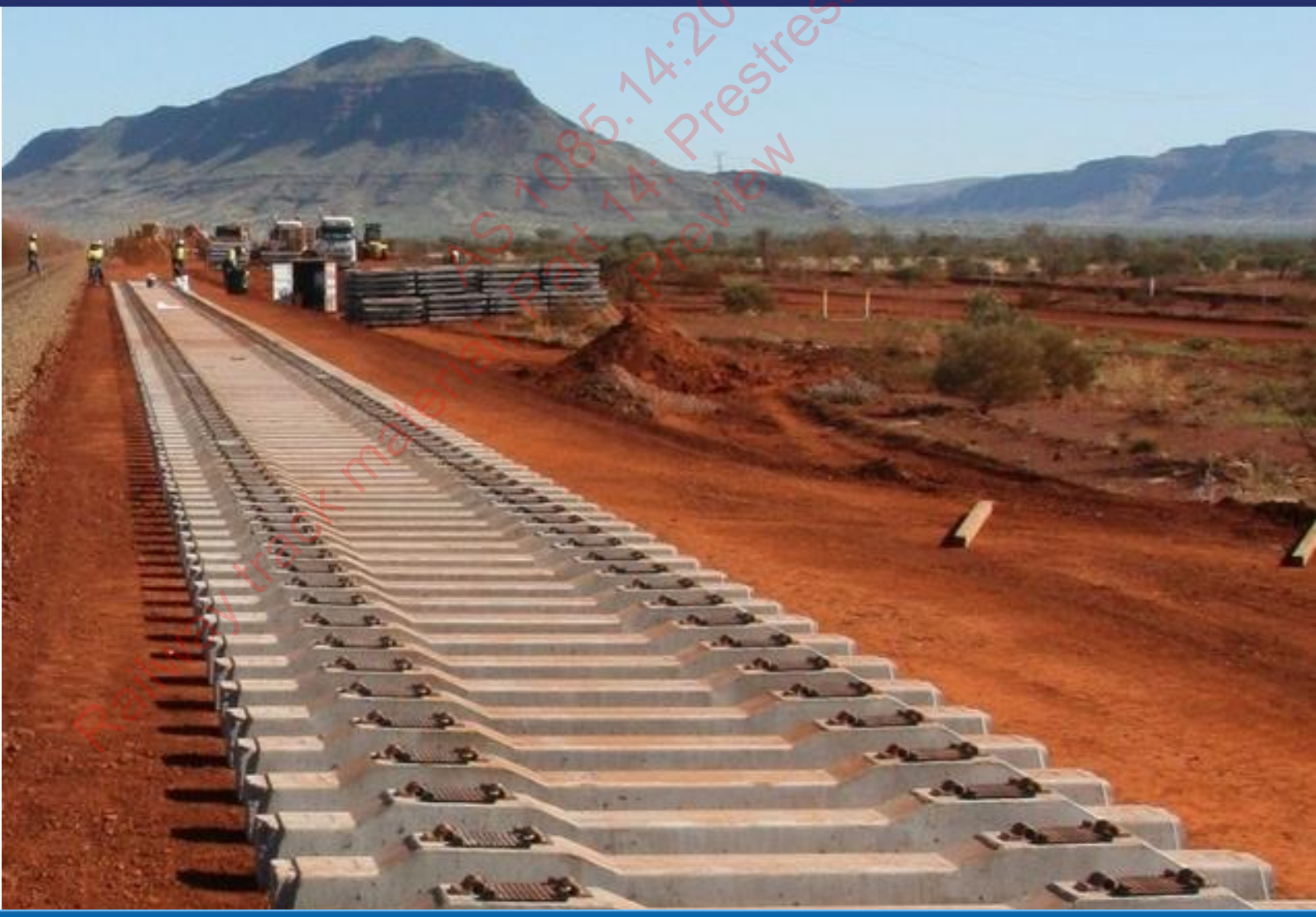
AS 1085.14:2019

Australian STANDARD®

Railway track material, Part 14: Prestressed concrete sleepers

RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Infrastructure Standard



This Australian Standard® AS 1085.14 Railway track material, Part 14: Prestressed concrete sleepers was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Arc Infrastructure	Aurizon	Austrak
Australian Rail Track Corporation	BHP Billiton	Martinus Rail
Pandrol	Queensland Rail	Rocla

The Standard was approved by the Development Group and the Infrastructure Standing Committee in November, 2019. On December 02, 2019 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

Keeping Standards up-to-date

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 Australian Standards developed by RISSB could also be withdrawn.

It is important that readers assure themselves they are using a current Australian Standard developed by RISSB, which should include any amendments that have been issued since the Standard was published. Information about Australian Standards developed by RISSB, 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.

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.

AS 1085.14:2019

Railway track material, Part 14: Prestressed concrete sleepers

Document details

First published as: AS 1085.14:2019

ISBN 978-1-76072-625-6

Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2019	December 02, 2019	Edition 2019 - First published

Approval

Name	Date
Rail Industry Safety and Standards Board	2/12/2019

Copyright

This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 1085.14 Railway track material, Part 14: Prestressed concrete sleepers. Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document

Objective

The objective of this Standard is to provide purchasers and suppliers including owners, rail infrastructure managers, designers and manufacturers of railway sleepers with requirements for the specification, manufacture and testing of prestressed concrete sleepers for use in railway track.

This Standard does not cover the use of materials complying with superseded editions of the AS 1085 series or the use of existing or re-used materials. Users should satisfy themselves that such materials are satisfactory for the application intended.

This Standard is Part 14 of the AS 1085 (Railway track material) series.

Compliance

There are two types of control contained within Australian Standards developed by RISSB:

1. Requirements.
2. Recommendations.

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.

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.

Controls in RISSB standards address known railway hazards are addressed Appendix A.

Contents

Appendix Contents

1 Scope and general

1.1 Scope

This Standard specifies the performance requirements and gives design and testing methods for new prestressed concrete sleepers for use in railway track with continuously welded rail. It provides methods for determining loads on sleepers and refers to AS 1085.19 for requirements for resilient fastening systems.

This Standard is based on knowledge and experience of the following conditions of use:

(a) Train speeds less than 200 km/h.

(b) Sleeper spacing in the range 500 mm to 750 mm.

(c) Axle loads less than 50 tonnes.

Where parameters outside these limits are encountered, the general principles given in this Standard may be applied. However, the criteria in the Standard may not be sufficient and consideration should be taken of the intended conditions of use and the factors and methods used for design adjusted accordingly.

This Standard does not cover the following:

i. Design of post-tensioned concrete sleepers.

ii. Design of duo block concrete sleepers.

iii. Sleepers for use interspersed with other types of sleeper (e.g. timber or steel).

iv. Techniques and equipment for the manufacture of concrete sleepers.

NOTES:

1. Guidance to purchasers on information needing to be supplied at the time of calling for tenders or quotations and testing of new products is given in Section 2.2.
2. Information on the means for determining compliance with this Standard is given in Appendix B.
3. Information on dynamic effects is given in Appendix D.

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 1012.11 Methods of testing concrete, Part 11: Determination of the modulus of rupture AS 1085.19 Railway track materials, Part 19: Resilient fastening assemblies
- AS 1199.0 Sampling procedures for inspection by attributes, Part 0: Introduction to the ISO 2859 attribute sampling system
- AS 1199.1 Sampling procedures for inspection by attributes, Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
- AS 1379 Specification and supply of concrete
- AS 1478.1 Chemical admixtures for concrete, mortar and grout, Part 1: Admixtures for concrete
- AS 2758.1 Aggregates and rock for engineering purposes, Part 1: Concrete aggregates