AS 1085.1:2019

Australian STANDARD®

Railway track material, Part 1: Steel rails

RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Infrastructure Standard

This Australian Standard® AS 1085.1 Railway track material, Part 1: Steel rails was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Transport for NSW,	Arc Infrastructure,	ARTC,
Public Transport Victoria,	Queensland Rail,	Aurizon,
Monash University,	Liberty One Steel	

The Standard was approved by the Development Group and the Infrastructure Standing Committee in September, 2019. On September 25, 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
Exec. Chair / CEO
Rail Industry Safety and Standards Board

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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.

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Document history

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Approval

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This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 1085.1 Railway track material, Part 1: Steel rails. Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document

This Standard supersedes AS1085.1 :2000 and AS 1085.1/Amdt 1/2005-03-14.

Objective

The objective of this Standard is to provide purchasers and suppliers, including owners, operators, designers and manufacturers of railway rail with requirements for as-rolled and hardened steel rails, made from continuously cast blooms for railway purposes.

This Standard is Part 1 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 in an appendix.

Contents

Appendix Contents

1 Scope and general

1.1 Scope

This Standard specifies requirements for as-rolled and hardened steel rails made from continuously cast blooms and profiles for asymmetric switch rails and elevated guardrails for railway purposes.

This Standard does not apply to the manufacture of steel rails with a nominal minimum surface hardness greater than 350 HB, including super-pearlite, hyper-eutectoid or other premium alloy rails.

NOTES:

1. Guidelines for purchasers are given in Appendix A.
2. Guidance on the means for demonstrating compliance with this Standard is given in Appendix B.
3. Information on residual stresses in rail is given in Appendix C.

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 1003, Engineers' straightedges (metric units)
- AS 1085.20 Railway track materials, Part 20: Welding of steel rails
- AS 1100.201, Technical drawing Mechanical engineering drawing
- AS 1199.0 Sampling procedures for inspection by attributes Introduction to the ISO 2859 attribute sampling system
- AS 1199.1 Sampling procedures for inspection by attributes Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
- AS 1391, Metallic materials - Tensile testing at ambient temperature
- AS 1816.1, Metallic materials - Brinell hardness test Test method (ISO 6506-1:2005, MOD)
- AS 1817.1, Metallic materials - Vickers hardness test Test methods (ISO 6507-1:1997, MOD)
- AS 1817.2 Metallic materials - Vickers hardness test Verification of testing machines
- AS 1817.3 Metallic materials - Vickers hardness test Calibration of reference blocks
- AS 1929, Non-destructive testing—Glossary of terms
- AS 2205.5.1, Methods for destructive testing of welds in metal Macro metallographic test for cross-section examination
- AS 2706, Numerical values - Rounding and interpretation of limiting values
- AS/NZS 1050 (all parts), Methods for the analysis of iron and steel
- AS/NZS ISO 9001, Quality management systems—Requirements
- AS/NZS ISO 9004, Quality management systems—Guidelines for performance improvements
- HB 18.28, Guidelines for third-party certification and accreditation Guide 28 - General rules for a model third-party certification system for products