

RISSB

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

STANDARDS

AS 1085.2

Railway Track Material

Part 2: Fishplates



Australian
STANDARD

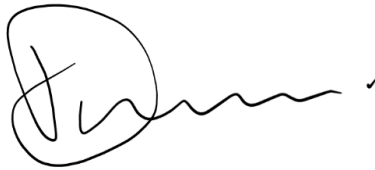
Notice to users

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.

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 Products developed by RISSB could also be withdrawn.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.

Document details

First published as: AS E23—1928

ISBN: 978 1 76139 917 6

Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2024	10 December 2024	This document has been reviewed to ensure it remains relevant and applicable. The latest review assessed the content, confirming that while updates were made to align with current industry practices, technologies, and regulatory requirements, the original authorship and copyright have been acknowledged as required.

Approval

Name	Date
Rail Industry Safety and Standards Board	25 November 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.

Published by the Rail Industry Safety and Standards Board, PO Box 518 Spring Hill Qld 4004, Australia.

Preface

This standard was prepared by the Railway Track Material Part 2: Fishplates Development Group, overseen by the RISSB Infrastructure Standing Committee.

Objective

The objective of this Standard is to provide purchasers and suppliers, including owners, operators, designers and manufacturers of railway rail with requirements for fishplates for use with rails in accordance with AS 1085.1 in railway track.

Changes to the previous edition are as follows:

- (a) Change of title of the AS 1085 series (previously *Railway permanent way material*).
- (b) The referenced documents list has been revised.
- (c) Reference to the withdrawn Standards AS 1213 and K1 have been removed.
- (d) The most recent version of the informative Appendix 'Means of demonstrating compliance with this Standard' has been included.

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.

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.

Table of Contents

Section 1	Scope and general	6
1.1	Scope	6
1.2	Normative references	6
1.3	Defined terms and abbreviations.....	6
Section 2	Designation	11
Section 3	Steel-making process	11
Section 4	Brands	11
Section 5	Chemical composition	11
5.1	General.....	11
5.2	Cast analysis	11
5.3	Composition	12
Section 6	Holes for fishbolts	12
Section 7	Finish	12
Section 8	Tolerances on section and dimensions	12
8.1	Section.....	12
8.2	Dimensions.....	12
Section 9	Calculated mass per pair of fishplates	12
Section 10	Mechanical properties	12
Section 11	Tensile strength	13
11.1	General.....	13
11.2	Tensile test pieces	14
Section 12	Retests	14
Section 13	Rounding of numbers	14
Appendix A	Information to be supplied the by purchaser (Informative)	15
Appendix B	Fishplate profiles, section properties and punching details (Normative)	16
B.1	Scope	16
Appendix C	Demonstrating compliance with this standard (Informative)	23
C.1	Scope	23
C.2	Statistical sampling.....	23
C.3	Product certification.....	23
C.4	Supplier's quality management system	23
C.5	Other means of assessment.....	24

Figures

Appendix Figure B.1-1 Section and punching details of bar-type (rolled) fishplate for 31 kg/m rail.....	16
Appendix Figure B.1-2 Section and punching details of bar-type (rolled) fishplate for 41 kg/m and 47 kg/m rail.....	17
Appendix Figure B.1-3 Section and punching details of bar-type (rolled) fishplate for 50 kg/m rail.....	18
Appendix Figure B.1-4 Section and punching details of bar-type (forged) fishplate for 50 kg/m rail.....	19
Appendix Figure B.1-5 Section and punching details of bar-type (rolled) fishplate for 53 kg/m rail.....	20
Appendix Figure B.1-6 Section and punching details of bar-type (rolled) fishplate for 60 kg/m rail.....	21
Appendix Figure B.1-7 Section and punching details of bar-type (forged) fishplate for 60 kg/m rail.....	22

Tables

Table 5-1 Chemical Composition (Cast Analysis).....	12
Table 11-1 Dimensional Tolerances.....	13
Table 11-2 Calculated Mass Per Pair of Fishplates (Unpunched).....	13
Table 11-3 Mechanical Properties.....	14

Section 1 Scope and general

1.1 Scope

This Standard specifies requirements for bar-type steel fishplates for use in conjunction with steel rails rolled in accordance with AS 1085.1.

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 1085, *Railway Track Material*
- AS 1085.1, *Railway track material, Part 1: Steel rails*
- AS 1199, *Sampling procedures and tables for inspection by attributes*
- AS 1391, *Methods for tensile testing of metals*
- AS 1399, *Guide to AS 1199 - Sampling procedures and tables for inspection by attributes*
- AS 1442, *Carbon steels and carbon-manganese steels - Hot-rolled bars and semifinished products*
- AS 1448, *Carbon steels and carbon-manganese steels - Forgings (ruling section 300 mm maximum)*
- AS 2706, *Numerical values - Rounding and interpretation of limiting values*
- AS 4291, *Mechanical properties of fasteners made of carbon steel and alloy steel*
- AS 4291.1, *Mechanical properties of fasteners made of carbon steel and alloy steel, Part 1: Bolts, screws and studs*
- AS/NZS 1050, *Methods for the analysis of iron and steel (all methods)*
- ISO 9001, *Quality management systems - Requirements*
- ISO 9004, *Quality management systems - Guidelines for performance improvements*
- SAI HB 18, *Guidelines for third-party certification and accreditation*
- HB 18 28, *Guide 28 - General rules for a model third-party certification scheme for products*

NOTE:

Documents for informative purposes are listed in a Bibliography at the back of the Standard.

1.3 Defined terms and abbreviations

For the purposes of this document, the following terms and definitions apply:

1.3.1

acceptable quality levels (AQLs)

defined quality thresholds used in quality assurance

1.3.2

anchor

device used to secure the rail to the sleeper, preventing movement