



**Railway Track Material – Part 8:
Dogspikes**

AS 1085.8 PREVIEW ONLY

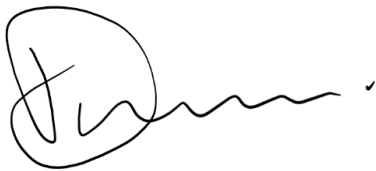
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The Infrastructure Standing Committee verified that RISSB's accredited process was followed in developing the product, before the RISSB Board approved the document for publication.

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

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2024	21 October 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	2 October 2024

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Preface

The modifications in this edition acknowledge the authorship and copyright of the new updates as per the terms of the agreement

Objective

The objective of this Standard is to provide designers and manufacturers with requirements for dogspikes for use with steel rails.

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.

RISSB Standards address known hazards within the railway industry. Hazards, and clauses within this Standard that address those hazards, are listed in Appendix A.

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.

Commentary

Commentary *C Preface*

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by ‘C’ preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of the Standard.

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Section 1 Scope and general

1.1 Scope

This Standard sets out the requirements for 16 mm and 19 mm steel dogspikes with square shanks and 22 mm diameter round shank steel dogspikes for use with the steel rails specified in 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 1085.1, *Railway Track Material – Part 1: Steel Rails*
- AS 1199, *Sampling procedures and tables for inspection by attributes*
- 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 semi-finished products*
- AS 2706, *Numerical values – Rounding and interpretation of limiting values*
- 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*
- HB18, *Guidelines for third-party certification and accreditation*
- HB18.28, *Guidelines for third-party certification and accreditation – 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

arithmetic mean deviation (Ra)

a measure of surface roughness, indicating the average deviation of the surface profile from the mean line

1.3.2

bend test

a test to determine the ability of a dogspike to be bent without cracking

1.3.3

chemical composition

the specific elements and their quantities that make up the steel used for manufacturing dogspikes

1.3.4

condition b or f

specific conditions under which the steel is used, as specified in AS 1442

1.3.5**cooling in air or bin**

allowing hot-forged dogspikes to cool slowly in air or in a bin with other hot dogspikes

1.3.6**cracks, ragged edges, mechanical defects**

unacceptable flaws in dogspikes that can affect their performance and extraction from sleepers

1.3.7**dogspike**

a large nail used to fasten rails to wooden sleepers in railway tracks

1.3.8**downward bend test for head**

a test to determine the ability of a dogspike head to be bent downward without cracking

1.3.9**extraction force**

the force required to remove a dogspike from a sleeper

1.3.10**finish**

the final condition of the dogspike surface, which must be free from harmful defects

1.3.11**hot or cold forging**

manufacturing processes involving shaping metal using heat (hot forging) or at room temperature (cold forging)

1.3.12**post-forging heat treatment**

the process of treating dogspikes after forging to achieve desired mechanical properties

1.3.13**production testing**

testing carried out on manufactured dogspikes to ensure they meet specified standards

1.3.14**prototype testing**

testing new designs or dies for dogspikes to ensure compliance with performance standards

1.3.15**quenching**

rapid cooling of hot-forged dogspikes in water or oil, which is not permitted for dogspikes

1.3.16**rounding of numbers**

the method of adjusting calculated values to comply with specified limiting values, as described in AS 2706

1.3.17**secondary machining**

additional machining processes after initial shaping to achieve the final dimensions and finish

1.3.18**shape, dimensions, and tolerances**

the specific form and allowable variations in size for dogspikes

1.3.19**sleeper**

a rectangular support for the rails in railway tracks, typically made of timber, concrete, or steel

1.3.20**surface roughness**

the texture of the surface of dogspikes, affecting their grip in timber sleepers

1.3.21**tests**

procedures to assess the mechanical properties and performance of dogspikes

1.3.22**tolerance**

the allowable deviation from specified dimensions

1.3.23**upward bend test for head**

a test to determine the ability of a dogspike head to be bent upward without cracking.

General rail industry terms and definitions are maintained in the RISSB Glossary. Refer to:
<https://www.rissb.com.au/products/glossary/>