

Australian Standard™

Railway track material

Part 18: Screw spikes and threaded inserts

This Australian Standard was prepared by Committee CE-002, Railway Track Materials. It was approved on behalf of the Council of Standards Australia on 29 November 2002 and published on 28 January 2003.

The following are represented on Committee CE-002:

Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Industry Group
Bureau of Steel Manufacturers of Australia
Rail Track Association Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Australia web site at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Australian Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.com.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

Australian Standard™

Railway track material

Part 18: Screw spikes and threaded inserts

First published as AS 1085.18—2003.

COPYRIGHT

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 4947 X

PREFACE

This Standard was prepared by the Standards Australia Committee CE-002, Railway Track Materials.

The objective of this Standard is to provide manufacturers and purchasers with manufacturing and performance requirements for steel screw spikes and threaded inserts for use with sleeper plates, fastenings and sleepers in railway permanent way.

This Standard is part of the AS 1085 series, which covers products used in railway track.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be an integral part of this Standard.

Notes to the text contain information and guidance and are not considered to be an integral part of the Standard.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 CONTEXT AND PURPOSE OF USE.....	4
3 REFERENCED DOCUMENTS	5
4 NOTATION	5
5 PERFORMANCE REQUIREMENTS.....	5
6 SCREW SPIKE	6
7 THREADED INSERT	7
8 MARKING.....	8

APPENDICES

A INFORMATION TO BE PROVIDED BY THE PURCHASER AND MANUFACTURER.....	10
B MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS STANDARD.....	12
C TIMBER PULL-OUT TEST	14
D THREADED INSERT PULL-OUT TEST	16
E ASSEMBLY TORQUE TEST	18
F LATERAL REPEATED LOAD TEST.....	19
G SCREW SPIKES.....	21

STANDARDS AUSTRALIA**Australian Standard
Railway track material****Part 18: Screw spikes and threaded inserts****1 SCOPE**

This Standard specifies requirements for steel screw spikes and threaded inserts for use as part of a fastening system that holds rail to sleepers or slabs for railway permanent way. A preferred shape is specified and information given on optional shapes.

This Standard covers screw spikes used in the following applications:

- (a) Screwed into a threaded insert that is cast into concrete.
- (b) Screwed into a pre-drilled hole in timber.

This Standard does not cover the use of screw spikes as dog spikes to directly secure the rail.

NOTES:

- 1 Guidance on information that should be supplied by the purchaser and manufacturer is given in Appendix A.
- 2 Guidance on means for demonstrating compliance with this Standard is given in Appendix B.

2 CONTEXT AND PURPOSE OF USE**2.1 Function**

Screw spikes locate and anchor fastening systems onto concrete, timber or other supports. Threaded inserts are used to provide an appropriately shaped hole in concrete into which the screw spike can be inserted. Helical spring washers (see AS 1085.7) may be used to provide constant downward force and to resist the unscrewing of the screw spike during use.

2.2 Action of screw spike

Screw spikes hold the sleeper plate or rail fastening firmly to the timber, concrete or other support member or structure. Screw spikes are subjected to withdrawal, shear and bending forces due to passage of rolling stock at speed (including vibration effects), thermal expansion and contraction of the rail and maintenance operations. They are also subject to fatigue and corrosion.

2.3 Action of the threaded insert

The threaded insert keys into the concrete and provides the material and shape into which the screw spike is screwed. The threaded inserts are subjected to pull-out and shear forces.