

Australian Standard Rail Networks **Code of Practice** *Volume 4*

Version 1.00 July 2009

Track, Civil and Electrical Infrastructure Part 2: Principles Issue



Important Notice and Disclaimer

The Rail Industry Safety & Standards Board ("RISSB") provides a range of products including:

- Standards;
- Codes of Practice;
- Rules;
- Guidelines; and
- Handbooks

collectively called the "RISSB Products".

RISSB does not undertake a full risk assessment of the RISSB Products it develops due to the diverse operating environments operating across Australia. Rather it identifies the hazards that must be addressed on the Australian Rail Network and develops products to accommodate these.

Responsibility rests with the rail organisation, should it choose to adopt a RISSB Product, to ensure that the RISSB Product is safe for use on the network on which it is intended to be used. This would include a risk assessment.

RISSB and all persons acting for RISSB in preparing a RISSB Product disclaim any liability or responsibility to any person for any consequences arising directly or indirectly from the use by the rail industry or rail organisations of the RISSB Product in whole or in part, and whether or not in conjunction with, or as a supplement to, the guidelines which the rail industry or rail organisation currently uses.

Users of the RISSB Products should be aware that, while using the RISSB Products, they must also comply with any relevant Commonwealth, State or Territory legislation relevant to their operations.

Adherence to the RISSB Products does not replace or exclude the application of such legislative requirements. Users are responsible for making their own enquiries in relation to the application of legislation, and the framers of the RISSB Products accept no responsibility in this regard.

Adherence to the RISSB Products does not necessarily ensure compliance with any relevant national guidelines, standards and codes of practice. Users are responsible for making their own enquiries in relation to compliance with national, standards, guidelines and codes of practice.

While all reasonable care has been taken in the preparation of this RISSB Product, it is provided to rail operators without any legal liability on the part of RISSB and RISSB publishers, authors, consultants and editors each take no responsibility for loss suffered by any person resulting in any way form the use, or reliance on this RISSB Product.



Foreword

This Part of Volume 4 describes principles for track, civil and electrical infrastructure elements. These principles need consideration only when changes are being made, as the Code is not to be applied retrospectively. The demonstration that existing practices are consistent with these principles is not required, as they have been proven acceptable and safe by application over time.

In the application of this Part it is important for the user to consider the track, civil and electrical infrastructure as a whole. In undertaking this necessary holistic approach it is important to take into account all the interactions and interfaces between the infrastructure elements and the phases of the asset life cycle (ie. Design and rating, construction, commissioning, monitoring and maintenance, modification and decommissioning and disposal). In doing so all matters must be applied in a consistent manner between the infrastructure elements, (eg. Consistent design loadings are transferred from the rail into the sleeper and fastening system).

The Part is divided into Sections dealing with specific infrastructure elements. Matters that relate to several infrastructure elements concurrently (eg. Matters that relate to the rail support system) are accounted for by the code addressing these matters in the component elements. The details described in one Section may therefore be inherently linked to those in another Section. The entire Part should therefore be understood prior to application and all interfaces and elements identified and accounted for holistically.

The Code of Practice for the Australian standard gauge rail networks, Volume 1: General Requirements and Interface Management together with Volume 4, Part 1 should be read in conjunction with this Part.

The development of this Part has taken into consideration the practices described in Volume 4, Part 1 and the underlying uniformity and safety principles described in both Volume 1 and AS 4292.1.

Guidelines for the Defined Interstate Rail Network given in Volume 4, Part 3 have been developed to be consistent with the principles in this Part.

The Code currently has a number of issues notated as "To Be Determined". It is envisaged these issues would become the subject of future versions. In the meantime organisations are required to manage these issues in accordance with AS 4292 and any other relevant statutory requirements.



Document control

Identification

Document Title	Number	Version	Date
Australian Standard Rail Networks - Volume 4 - Code of Practice	1	1.00	1 July 2009

Distribution and change

The RISSB maintains the master for this document and publishes the current version on the RISSB website. Any changes to the content of this publication require the version number to be updated. Changes to this publication must be approved according to the procedure for developing management system documents. The RISSB must identify and communicate changes to this publication.

Copyright

The contents of this document may not be reproduced or transmitted by any means in whole or in part without written permission from RISSB. Permission is grated to current RISSB members to utilise and reproduce the content of this document for application within the context of their own rail operation.

Document History

Publication Version	Effective Date	Page(s) Affected	Reason for and Extent of Change(s)
Version 1.00	1 July 2009	-	First Release of document



Table of Contents

	ion 1: Rail	2		
1.1	Design and Rating	2		
1.2	Construction and Maintenance	7		
1.3	Commissioning	11		
1.4	Inspection and Assessment	11		
Sect	ion 2: Sleepers and Fastenings	13		
2.1	Design and Rating	13		
2.2	Construction and Maintenance	14		
2.3	Commissioning	14		
2.4	Inspection and Assessment	15		
2.5	Modification	15		
2.6	Decommissioning and Disposal	15		
Sect	ion 3: Points and Crossings	16		
3.2	Construction and Maintenance	17		
3.3	Commissioning	17		
3.4	Inspection and Assessment	17		
3.5	Modification	18		
3.6	Decommissioning and Disposal	18		
Sect	ion 4: Ballast	19		
4.1	Design and Rating	19		
4.3	Commissioning	19		
4.4	Inspection and Assessment	20		
4.5	Modification	20		
4.6	Decommissioning And Disposal	20		
	ion 5: Track Geometry	21		
5.1	Design And Rating	21		
5.2	Construction and Maintenance	21		
5.3	Commissioning	21		
5.4	Inspection and Assessment	21		
5.5	Modification	22		
5.6	Decommissioning And Disposal	22		
Sect	ion 6: Track Lateral Stability	23		
6.1	Design and Rating	23		
6.2	Construction And Maintenance	24		
6.3	Commissioning	24		
6.4	Inspection and Assessment	24		
6.5	Modification	25		
6.6	Decommissioning And Disposal	25		
Sect	ion 7: Clearances	26		
7.1	Design And Rating	26		
7.2	Construction and Maintenance	27		
7.3	Commissioning	27		
7.4	Inspection and Assessment	27		
7.5	Modification	28		
7.6	Decommissioning and Disposal	28		
Sect	Section 8: Earthworks 29			
8.1	Design and Rating	29		
8.2	Construction and Maintenance	29		
8.3	Commissioning	29		
	SB 2009			

8.4	Inspection and Assessment	29
8.5	Modification	30
8.6	Decommissioning and Disposal	30
		0.
Secti	ion 9: Structures 🛛 🗸 🗸	31
9.1	Design and Rating	31
9.2	Construction and Maintenance	31
9.3	Commissioning	31
9.4	Inspection and Assessment	31
9.5	Modification	32
9.6	Decommissioning and Disposal	32
Secti	ion 10: Flooding	33
	Design and Rating	33
	Construction and Maintenance	33
	Commissioning	33
	Inspection and Assessment	33
	Modification	33 34
10.6	Decommissioning and Disposal	34
Sorti	ion 11: Railway Signs	35
	Design and Rating	35
	Construction and Maintenance	36
	Commissioning	36
	Inspection and Assessment	36
	Modification	37
11.6	Decommissioning and Disposal	37
		•••
	ion 12: Access Control and Protection	38
	Design and Rating	38
	Construction and Maintenance	38
	Commissioning	38
	Inspection and Assessment	38
	Modification	38
12.6	Decommissioning and Disposal	38
	ion 13: Fire Prevention And Control /	
	And Life Safety	39
	Design and Rating	39
	Construction and Maintenance	39
13.3	Commissioning	39
13.4	Inspection and Assessment	39
13.5	Modification	39
13.6	Decommissioning and Disposal	39
Secti	ion 14: Electrical Infrastructure	40
	Operational Signage	40
	Electrical Infrastructure Clearances	40
	Operation and Control of the	10
1 1.5	Electrical System	40
1/1	Electric Traction System Integrity	40 40
		40
14.5	Separation Distances from	<u>/</u> 1
140	Electrical Equipment	41
	Earthing and Bonding	41
14./	Spatial Location of Conductors	41

X