

RISSB product for prioritisation

Primary information	
Type of product being suggested:	Code of practice ⁱ
Title of product being suggested:	Derailment protection for rail underbridges
Date of suggestion:	8 December 2017
Reason for suggestion:	<p>AS5100:2017 ‘Bridge Design’ Part 1 section 6 describes a list of matters for resolution prior to commencing design which currently does not include requirements for derailment protection at rail under bridges.</p> <p>AS5100:2017 ‘Bridge Design’ Part 2 11.4 ‘Collision Load’ and 11.5 ‘Derailment Loads’, has requirements for derailment loadings and bridge protection. These sections set the requirements for overbridges and through-type rail bridge. No guidance is provided for managing the risk of derailed rolling stock approaching the bridge or to manage the transition across other types of rail under bridges.</p> <p>Sections 11.4 and 11.5 use the phrase ‘unless otherwise specified by the Rail Operator’. The proposed code of practice would provide situations and considerations for these exceptions and guide the designer with inputs when accounting for the derailment protection in the design.</p> <p>Currently each Rail Authority is required to prepare and these design inputs resulting in assumptions and inconsistency across the various networks.</p> <p>A RISSB code of practice will compliment AS5100 and provide rail operators with a consistent approach on how to meet the requirements for bridge protection systems.</p>
Railway discipline area:	Infrastructure
Scope:	
<p>The ‘Derailment protection for rail bridges’ code of practice shall address all inputs required by a rail bridge designer to meet AS5100:2017 Part 2 S11 Derailment Protection. It shall provide means for each Rail Authority to objectively determine the design inputs from information available for each railway.</p> <p>The code of practice shall also provide further information on relevant aspects not specified in AS5100, including the end conditions of bridges, transitioning from ballast track to direct fixed structures and combinations of design options.</p> <p>The code of practice will provide guidance on how to demonstrate SFAIRP as defined by the Rail Safety National Law.</p> <p>The code of practice will address how the Rail Infrastructure Maintainer will give due consideration to the traffic type (freight, passenger, heavy haul and mixed), priority of protection of the infrastructure, rolling stock, passengers/crew, bystanders and road users.</p>	

Objective:			
The code of practice will provide guidance to railway bridge designers on how to consistently implement AS5100 in Australian railways to improve the compliance with the principles of SFARIP.			
Hazard identification:			
1	Reduce consequence of derailments at bridges.	6	
2	Reduce damage to structures by allowing derailed trains to travers a bridge.	7	
3	Reduce cost to maintainers by defining SFAIRP for derailment protection thus freeing capital to be distributed to effective derailment protection methods.	8	
4		9	
5		10	
Benefits:			
<u>Safety</u>			
The safety benefit will be in providing guidance to make accurate decisions on effective derailment protection measures without wasting effort on over specified designs or ineffective designs.			
<u>Interoperabilityⁱⁱ / Harmonisationⁱⁱⁱ</u>			
This standard will allow bridge designers to have a consistent approach to specifying derailment protection and a consistent application of AS5100 across all rail operators.			
Adoption should be achievable for all rail operators constructing new or replacement bridges meeting AS5100:2017.			
A quantitative assessment will require access to the forward plan of proposed bridge designs.			
<u>Financial</u>			
Removal of the ambiguity from individual Rail Infrastructure Managers providing different guidance as to how to meet AS5100, will allow designers to effectively control these risks and reduce waste form over specified or ineffective controls.			
<u>Environmental</u>			
This will not have any direct Environmental impacts.			
Impacts:			
N/A			

i Definition for Guideline

A Guideline is a set of informative guidance. It is not normative but informative.

Definition for Code of Practice

A Code of Practice is a set of descriptions. It is the “how” one can meet a higher-level requirement (either of a Standard, or a piece of Legislation). It is normative, but by its nature can contain several options about how to achieve compliance with the higher-level requirement. It can also have some informative guidance within it if it is more practical than writing a separate guideline.

Definition for Standard

A Standard is a set of requirements only. It is the “what” must be done to be considered compliant to the standard. It is normative. It can also contain optional and/or supplementary requirements, but they still should be worded as requirements.

ii Interoperability - the ability of a process, system or a product to work with other process, systems or products (aka compatible systems through managed interfaces).

iii Harmonisation - the act of bringing into agreement so as to work effectively together (aka uniformity systems).