

# RISSB

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

## STANDARDS

# AS 7520.1

## Rolling Stock Body Structural Requirements – Part 1: Locomotive



Australian  
STANDARD

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Development of this Standard was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Engineering Institute of Technology, Queensland Rail, Progress Rail, Transport for NSW, KiwiRail, Rail, Tram and Bus Union Australia.

The Rolling Stock 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.



**Alan Fedda**  
Chief Executive Officer  
Rail Industry Safety and Standards Board

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## Document details

First published as: AS 7520.1:2012

ISBN: 978 1 76175 180 6

## Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2025	27 June 2025	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	27 June 2025

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

## Preface

This standard was prepared by the Rolling Stock Body Structural Requirements - Part 1: Locomotive Development Group, overseen by the RISSB Rolling Stock Standing Committee.

## Objective

This document describes requirements for the structural strength of railway locomotive bodies.

The objective of this Standard is to—

- (a) prescribe the minimum structural integrity level of the vehicle body to ensure safe performance under normal operating conditions and extreme operating conditions; and
- (b) minimize risks to train crew and members of the general public in the event of collisions or derailments.

## 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

AS 7520.1 applies to new and modified locomotive rolling stock.

The requirements mandated in this Standard do not retrospectively apply to any existing vehicles other than vehicles which are being modified in areas covered by this Standard so far as reasonably practicable.

The document covers the design, construction and maintenance of rolling stock. Operation of rolling stock is not covered.

This Standard is not specifically intended to cover rolling stock used on light rail and cane railways, but items from this Standard may be applied to such systems as deemed appropriate by the relevant RTO.

AS 7520.1 is intended to compliment the rolling stock compliance certification process outlined in AS 7501, including all vehicle types such as new, modified and heritage rolling stock.

### 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 4991, *Lifting Devices*
- AS 7501, *Rolling stock compliance certification*
- AS 7507, *Rolling Stock Outlines*
- AS 7520.2, *Body Structural Requirements - Part 2: Freight Rolling Stock*
- AS 7522, *Access and Egress*
- AS/NZS 2080, *Safety Glass for Land Transport*
- EN 15152, *Railway applications - Front Windscreens for Train Cabs*
- EN 15227, *Railway applications - Crashworthiness Requirements for Railway Vehicles*
- FRA Standard 49 CFR Part 223, *Safety Glazing Standards - Locomotives, Passenger Cars and Cabooses*
- UK RSSB Standard - GM/RT2130, *Vehicle Fire Safety and Evacuation*
- UK RSSB Standard - GM/RT2100, *Requirements for Rail Vehicle Structures*
- AAR Standard S-580, *Locomotive Crashworthiness Requirements, 2008*
- AAR Standard S-5506, *Performance Requirements for Diesel Electric Locomotive Fuel Tanks, 2001*
- APTA SS-C&S-034-bogie, *Design and Construction of Passenger Railroad Rolling Stock*

**NOTE:**

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