



AUSTRALIAN RAIL INDUSTRY
STANDARDS ORGANISATION

AS 7520.2

Body Structural Requirements – Part 2: Freight Vehicles

STANDARDS



Advancing safety and productivity

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Development of this Standard was prepared by an Australian Rail Industry Standards Organisation (ARISO) Development Group consisting of representatives from the following organisations:

ARTC, Aurizon, Bradken, Monash IRT, Pacific National, PTA WA, Qube, Queensland Rail, Rail Tram and Bus Union, UGL, and WA Engineering Institute of Technology.

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

ARISO 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
Australian Rail Industry Standards Organisation

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Approval

Name	Date
Australian Rail Industry Standards Organisation Board	10 September 2026

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Preface

This Standard was prepared by the Body Structural Requirements – Part 2: Freight Vehicles Development Group, overseen by the ARISO Rolling Stock Standing Committee.

This revision has been substantially updated to provide a more comprehensive framework for the structural integrity of freight rolling stock. Key changes include the definition of freight vehicle structural classifications, revised and additional loads and combined load cases, mandatory fatigue assessment provisions, enhanced maintenance and asset life management requirements and revisions to sections covering body-mounted equipment and tank cars. The document also strengthens requirements relating to human factors, inspection access, corrosion protection and structural risk management.

Objective

The objective of this Standard is to prescribe the minimum structural integrity level of the freight vehicle to ensure safe performance under normal and extreme operating conditions.

This document describes requirements for the structural strength of freight vehicles.

This document is intended to complement the rolling stock compliance certification process outlined in AS 7501.

Compliance

There are four types of provisions contained within Australian Standards developed by ARISO:

- (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’.

Using this Standard

Appendices in ARISO 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.

ARISO Standards identify known hazards relevant to the railway industry. Appendix A provides a non-exhaustive list of hazards relevant to the scope of this Standard.

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.

Table of Contents

Section 1	Scope and general	6
1.1	Scope	6
1.2	Normative references	6
1.3	Defined terms and abbreviations	6
Section 2	General	9
2.1	Interpretation of vehicle structural requirements	9
2.2	Human factors integration	9
2.3	Inspection access	9
2.4	Marking and identification of rolling stock	9
2.5	Drawgear height	9
Section 3	Design verification	10
Section 4	Construction	12
4.1	General	12
4.2	Welding and fabrication	12
4.3	Mechanical fastening	12
4.4	Bonding	12
4.5	Corrosion protection	12
Section 5	Maintenance	13
5.1	General	13
5.2	Body-mounted equipment	14
Section 6	Structural rating	15
Section 7	Design loads	16
7.1	Longitudinal design loads	16
7.1.1	Compressive loads	16
7.1.2	Tensile loads	16
7.2	Vertical design loads	16
7.2.1	Dynamic loads	16
7.3	Combined vertical and longitudinal loads	16
7.4	Lifting and jacking	17
7.5	Coupler vertical loads	17
7.6	Twist	17
7.7	Impact load	17
7.8	Lateral loads	17
7.8.1	Rollover	17
7.8.2	Coupler lateral component	18
7.9	Load case summary	18
7.10	Additional requirements	19
Section 8	Fatigue loads	20

Section 9	Loading hatches, loading doors, discharge doors and crew access doorways...	21
Section 10	Towing fixtures	22
Section 11	Body-mounted equipment	23
11.1	General requirements	23
11.2	Shock/minor impact loading	23
11.3	Modal analysis and fatigue	24
Section 12	Intermodal rolling stock	25
12.1	Corner fitting securing system – General requirements.....	25
12.2	Corner fitting securing system – Design loads	26
12.3	Rail vehicle requirements.....	26
Section 13	Tanks and fitting on rail tank cars	27
13.1	Priority of standards.....	27
13.2	Rail tank car classification	27
13.3	General tank car requirements	27
13.4	General tank requirements	27
13.5	Detailed requirements for tank cars, tanks and attachments	28
Appendix A	Hazard Register (Informative).....	29
Appendix B	Container Restraint Spigot (Informative)	30
Appendix C	Rail Tank Car Classification Requirements (Normative)	32
Bibliography (Informative)		34
 Figures		
Figure 1	Example emergency towing fixture	22
Appendix Figure B-1	Spigot centreline spacing	30
Appendix Figure B-2	Spigot design loads	31
 Tables		
Table 1	Load Cases for Investigation	18
Appendix Table C-1	Rail Tank Car Classification Requirements.....	32

Section 1 Scope and general

1.1 Scope

This document applies to new and modified freight rolling stock.

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

The document covers the design, construction and maintenance of freight rolling stock.

This document excludes the operation of rolling stock.

This document excludes roadrailer trailers, heritage rolling stock and rolling stock used on cane railways. Items from this document can be applied to such systems as deemed appropriate by the relevant RTO.

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 3990-1993 Rec:2016, *Mechanical Equipment - Steelwork*
- AS 7503:2023, *Rail vehicle identification and markings*
- AS 7522:2025, *Access and Egress*
- AS 7524:2019, *Coupler and draw gear*
- AS/NZS 1200:2015, *Pressure vessels*
- AS/NZS 1554.1:2014, *Structural steel welding, Part 1: Welding of steel structures*
- AS/NZS 1554.4:2014, *Structural steel welding, Part 4: Welding of high strength quenched and tempered steels*
- AS/NZS 1554.5:2014, *Structural steel welding, Part 5: Welding of steel structures subject to high levels of fatigue loading*
- AS/NZS 1554.6:2012 *Structural steel welding, Part 6: Welding of stainless steels for structural purposes*
- AS/NZS 1665:2004, *Welding of Aluminium Structures*
- AAR M-1002, *Manual of Standards and Recommended Practices, Section C, Part III, Specifications for Tank Cars* (2024)

NOTE:

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

1.3 Defined terms and abbreviations

For the purposes of this document, the following terms and definitions apply:

1.3.1

AAR

Association of American Railroads

1.3.2

API

American Petroleum Institute