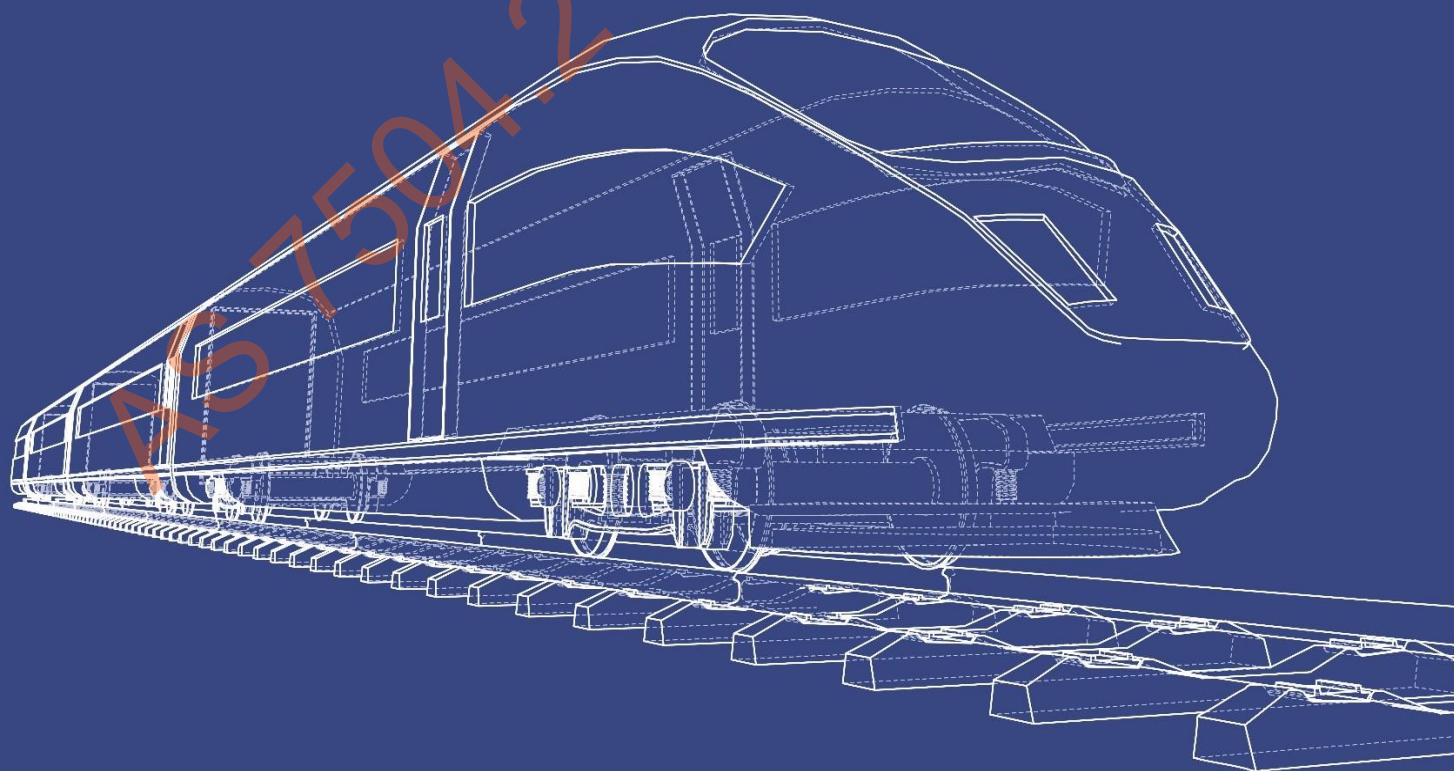


Brake components – Part 2: Brake discs and pads

RiSSB

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Rolling Stock Standard



This Australian Standard® AS 7504.2 Brake components – Part 2: Brake discs and pads was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

CQ University

Hyundai Rotem

MTM

Queensland Rail

Rio Tinto

Sydney Trains

Wabtec

Yarra Trams

The Standard was approved by the Development Group and the Rolling Stock Standing Committee in April, 2023. On April 28, 2023 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently reviewed before being approved.

Development of the Standard was undertaken in accordance with RISSB's accredited process. As part of the approval process, the Standing Committee verified that proper process was followed in developing the Standard.

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.



Chief Executive Officer
Rail Industry Safety and Standards Board

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This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 7504.2 Brake components – Part 2: Brake discs and pads. Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document.

Objective

The objective of this Standard is to describe the requirements for disc brake and pad components and assemblies on applicable rolling stock, reducing the risks associated with incorrect or suboptimal disc brake/pad components and/or assemblies.

This Standard is intended to deliver benefits to its individual users (rolling stock operators and rail infrastructure managers), contributing to the overall rail harmonisation interoperability while providing efficiencies and innovations in rolling stock engineering.

This Standard is related to AS 7504 – Brake Blocks, by providing requirements for braking friction material. AS 7504 relates to rolling stock utilising brake blocks that apply friction directly to the wheel tread for deceleration, while this Standard relates to brake discs and pads to achieve deceleration.

Compliance

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

1. Requirements.
2. Recommendations.
3. Permissions.
4. 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 recognise 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

Contents

1	Scope and general	6
1.1	Scope	6
1.2	Normative references	6
1.3	Terms, definitions, and abbreviated terms	7
2	Material characteristics	9
2.1	Brake pads	9
2.2	Brake discs	10
3	Performance	11
3.1	General	11
3.2	In-Service	11
3.3	Mechanical	12
3.4	Friction	13
3.5	Validation	14
3.6	Noise	15
3.7	Shock and vibration	15
4	Design	16
4.1	Brake pads	16
4.2	Brake discs	17
5	Manufacture	18
5.1	General	18
5.2	Brake pads	18
5.3	Brake discs	19
6	Maintenance	20
7	Assembly and installation	20
7.1	Brake pads	20
7.2	Brake discs	20
8	Disposal	22

Appendix contents

Appendix A	Hazard register	23
Appendix B	Dynamometer requirements	25
B.1	General requirements	25
B.2	Calibration requirements	25
B.3	Data recording requirements	26
Appendix C	Static and dynamic friction test procedures	27
C.1	General requirements	27
C.2	Static friction test procedure	28
C.3	Dynamic friction test procedure	29
Appendix D	Bibliography	31

AS 7504.2 Preview Only

1 Scope and general

1.1 Scope

This Standard applies to new, modified, and existing locomotive-hauled freight and passenger rolling stock, self-propelled passenger rolling stock and infrastructure maintenance rolling stock. This Standard is only applicable to rolling stock fitted with disc brakes and disc pads.

This Standard applies to the design, manufacture, assembly, and maintenance of brake pad friction material and brake discs that are either pressed/shrunk on the axle/driveshaft by a cylindrical/conical interference fit or mounted onto the wheel, wheel web or wheel hub.

The scope of this Standard is applicable to brake components that interface with the axle or wheel and brake callipers. For the avoidance of doubt, this Standard does not cover any aspects of brake callipers, brake systems, axles, or wheels.

This Standard is not specifically intended to cover rolling stock used on light rail, cane railways and monorail networks, but items from this Standard may be applied to such systems as deemed appropriate by the relevant railway infrastructure manager (RIM).

Operation of rolling stock in regard to network safe working rules and route standards is not covered in this Standard.

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 7517, *Railway rolling stock – Wheelsets*
- EN 14535-1, *Railway applications – Brake discs for railway rolling stock: Part 1: Brake discs pressed or shrunk onto the axle or drive shaft, dimensions and quality requirements*
- EN 14535-2, *Railway applications – Brake discs for railway rolling stock: Part 2: Brake discs mounted onto the wheel, dimensions and quality requirements*
- EN 14535-3, *Railway applications – Brake discs for railway rolling stock: Part 3: Brake discs, performance of the disc and the friction couple, classification*
- EN 16185-1, *Railway applications – Braking systems of multiple unit trains: Part 1: Requirements and definitions*
- Safe Work Australia – Code of Practice – *Preparation of Safety Data Sheets for Hazardous Chemicals*
- UIC Code 541-3, *Brakes – Disc brakes and their application – General conditions for the approval of brake pads*
- UNIFE Railway Industry Substance List