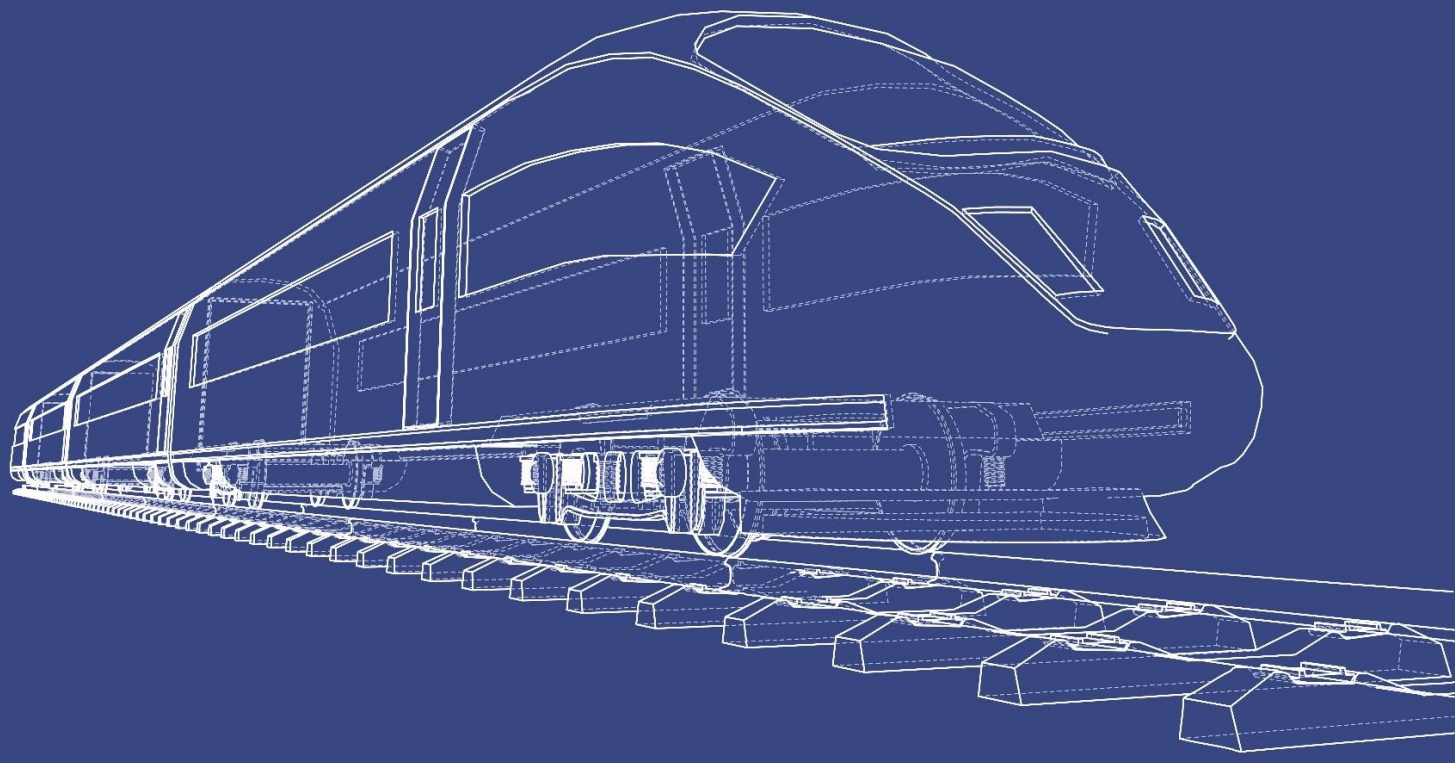
AS 7482:2022

Australian STANDARD®

Railway rolling stock-Heating ventilation and air conditioning (HVAC)

RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Rolling Stock Standard



This Australian Standard® AS 7482 Heating Ventilation and Air Conditioning (HVAC) was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Auckland One Rail	Department of Transport (Vic)	Keolis Downer
Knorr-Bremse	Metro Trains Melbourne	Public Transport Authority of WA
Queensland Rail	Transport for NSW	

This Standard was approved by the Development Group and the Rolling Stock Standing Committee in June, 2022. On June 30, 2022 the RISSB Board approved this Standard for release.

This Standard was issued for public consultation and was independently validated before being approved.

Development of this 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 this 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 comment on a draft of this 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.

Deb Spring
Chief Executive Officer
Rail Industry Safety and Standards Board

Keeping Standards up-to-date

Australian Standards developed by RISSB are living documents that reflect progress in science, technology, and systems. To maintain their currency, Australian Standards developed by RISSB are periodically reviewed, and new editions published when required. Between editions, amendments may be issued. Australian Standards developed by RISSB could also be withdrawn.

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RISSB welcomes suggestions for improvements and asks readers to notify us immediately of any apparent inaccuracies or ambiguities. Members are encouraged to use the change request feature of the RISSB website at: http://www.rissb.com.au/products/. Otherwise, please contact us via email at info@rissb.com.au or write to Rail Industry Safety and Standards Board, PO Box 518 Spring Hill Qld 4004, Australia.

Notice to users

This RISSB product has been developed using input from rail experts from across the rail industry and represents good practice for the industry. The reliance upon or manner of use of this RISSB product is the sole responsibility of the user who is to assess whether it meets their organisation's operational environment and risk profile.

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Heating ventilation and air conditioning (HVAC)

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2022	June 30, 2022	First publication

Approval

Name	Date
Rail Industry Safety and Standards Board	30/06/2022

Copyright

This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 7482 Railway rolling stock - Heating ventilation and air conditioning (HVAC). Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document

This Standard supersedes Sections 5 – 9 of AS 7513.3:2014 Railway Rolling Stock – Interior Environment Passenger Rolling Stock

Objective

The objective of this Standard is to is to provide requirements, recommendations, and guidance for rolling stock heating ventilation and air conditioning (HVAC) and establish industry standards for these systems.

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

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, it does not form part of the requirements and recommendations of this Standard.

Contents

Appendix contents

1 Scope and general

1.1 Scope

This document provides heating, ventilation and air conditioning (HVAC) design principles, comfort parameters and test requirements for new and modified locomotive, freight, passenger, and infrastructure maintenance rolling stock.

This document is applicable for rolling stock operating up to 160 km/h nominal maximum speed. 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 tourist/heritage rolling stock, rolling stock used on light rail, cane railway, and monorail networks, but items from this Standard may be applied to such systems as deemed appropriate by the relevant railway infrastructure manager.

For avoidance of doubt, risks to safety must be eliminated so far as is reasonably practicable in accordance with the Rail Safety National Law.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all their content constitutes requirements of this document:

- AS 1668.2 The use of ventilation and air conditioning in buildings Mechanical ventilation in buildings
- AS 5149.1 Refrigerating systems and heat pumps – Safety and environmental requirements. Part 1: Definitions, classification, and selection criteria
- AS 7507 Rolling Stock Outlines
- AS 7520 Railway Rolling Stock- Body Structural Requirements
- AS 7529 Australian Railway Rolling Stock- Fire Safety – Passenger
- AS 7530 - Electrical Systems
- AS 7722 EMC management
- EN 378 Refrigerating systems and heat pumps - Safety and environmental requirements - Part 1
- EN 13129 Air conditioning for mainline rolling stock
- EN 14750-1 Railway applications – Air conditioning for urban and suburban rolling stock – Part 1: Comfort parameters
- EN 14750-2 Railway applications – Air conditioning for urban and suburban rolling stock – Part 2: Type tests
- EN 14813-1 Railway applications – Air conditioning for driving cabs – Part 1: Comfort parameters
- EN 14813-2 Railway applications – Air conditioning for driving cabs – Part 2: Type tests