AUSTRALIAN RAIL INDUSTRY STANDARDS ORGANISATION

AS 7717

Signal Testing & Commissioning

STANDARDS

Australian STANDARD

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:

Sigtech Solutions; Downer, Hayes Railway Signalling Pty Ltd, UGL Regional Linx, TfNSW, Rail Control Systems Australia, Lineside Signalling, RailSphere Pty Ltd, Arc Infrastructure, V/Line, KiwiRail, and Queensland Rail.

The Train Control Systems 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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Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2026	10 September 2026	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
Australian Rail Industry Standards Organisation Board	10 September 2026

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Preface

This Standard was prepared by the Signal Testing & Commissioning Development Group, overseen by the ARISO Train Control Systems Standing Committee.

This document has been updated from the previous version, including:

(a) removal of technology specific requirements;

(b) removal of duplicated information;

(c) improved alignment with AS 7716;

(d) updates to enable use of this Standard with digital train control technologies such as ETCS and CBTC; and

(e) increased clarity and definition of requirements.

Objective

The objective of this Standard is to provide a common framework for rail infrastructure managers (RIMs) to plan and execute the inspection, testing and commissioning of new and altered signalling infrastructure.

The concepts within this Standard are intended to be applied throughout any railway signalling project, both in the context of a railway signalling and train control system project, and during the operating life of the system.

This Standard defines requirements and recommendations to effectively plan, execute and finalize the testing and commissioning activities, but does not detail the methods by which those requirements may be fulfilled.

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.

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Section 1 Scope and general

1.1 Scope

This document is intended to be applied to railway signalling system testing and commissioning. This includes the following:

(a) Minimum inspection and testing requirements to assure the safety of the system.

(b) Minimum documentation necessary to ensure a comprehensive record of test results to demonstrate the safety of the system.

(c) Appropriate processes to plan the inspection and testing to ensure that all necessary testing is completed, including unexpected changes and events.

(d) Appropriate processes for managing the testing activities to ensure that they are completed in an efficient and timely manner.

(e) Processes for the handover of a commissioned system to the responsible RIM.

(f) Processes for ensuring that inspection and testing work is performed by persons having the necessary competency and authorization.

This document is applicable to all types of signalling systems, including computer- and relay-based signalling systems, digital train control technologies (ETCS and CBTC) and mechanical signalling equipment where that forms part of the signalling system.

Signalling testing processes are detailed in AS 7716.

This document includes the inspection, testing and commissioning of onboard signalling systems as installed on each locomotive or fleet unit, including verification of installation, configuration, interfaces and operational performance.

This document applies to telecommunications systems where there is a direct interface with the signalling system being tested and commissioned.

This document is intended to be used for planning and conducting the inspection, testing and commissioning of new and major works. This document can be used to inform the planning and conducting the inspection, testing and commissioning of minor works, maintenance works and emergency / temporary works where applicable.

For the purposes of this document, the following applies:

(g) Design and installation – assumes that design and installation activities are undertaken in accordance with ISO 9001, AS 3000 and AS 7718 as applicable, and requirements specified by the relevant RIM. This document does not prescribe design or installation requirements.

(h) Inspection and testing – covers all activities from the acceptance of manufactured materials and components to the inspection and testing of elements of the system built off-site or within the project boundaries, up to the commencement of commissioning.

(i) Commissioning – covers all changeover, set to work, inspection, testing and certification activities involved in taking the redundant existing equipment out of service and bringing the new system into operation.

This document is structured around activities for a linear project culminating in a single commissioning. This document also defines additional requirements for inspection and testing of projects involving multiple stages, each involving the commissioning of the signalling and control system in its new (if temporary) configuration.