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AUSTRALIAN RAIL INDUSTRY
STANDARDS ORGANISATION

AS 7716

Signalling Testing Process

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:

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

First published as: AS 7716:2017

ISBN: 978 1 76175 883 6

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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Published by the Australian Rail Industry Standards Organisation, GPO Box 1267, Brisbane QLD 4000, Australia.

Preface

This Standard was prepared by the Signalling Testing Process Development Group, overseen by the ARISO Train Control Systems Standing Committee.

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

- (a) addition of requirements from AS 7717;
- (b) addition of information relating to onboard signalling systems; and
- (c) updates to reflect current practice.

Objective

The objective of this Standard is to outline requirements that describe types of testing and methods for testing typical signalling apparatus and systems that form part of the signalling systems, in Australian railway corridors. This Standard excludes mechanical signalling testing.

This Standard covers the testing through the construction and testing phases, including testing processes and performance requirements for individual items of apparatus and systems. Dynamic testing of onboard signalling systems is included.

This Standard provides a set of testing requirements to support the completion of the testing required by AS 7717 and to manage the hazards associated with the signalling testing process. This Standard does not diminish the obligation of the verification, validation engineers and test engineers to decide what should be tested and how it should be tested respectively.

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.

Table of Contents

Section 1	Scope and general	5
1.1	Scope	5
1.2	Normative references	5
1.3	Defined terms and abbreviations.....	6
Section 2	General requirements	8
2.1	General.....	8
2.2	Safety.....	8
2.3	Testing personnel, competency management and documentation.....	9
Section 3	Changeovers	10
Section 4	Test methods and procedures	11
4.1	General.....	11
4.1.1	Overview	11
4.1.2	Testing the signalling installation	11
4.1.3	System function testing and validation.....	11
4.2	Documentation	11
4.3	Configuration control of design documents and data	12
4.4	Detailed circuit tests.....	12
4.4.1	General.....	12
4.4.2	Documentation check	13
4.4.3	Correlation check	13
4.4.4	Wire and null count.....	13
4.4.5	Continuity test.....	14
4.4.6	Insulation test.....	15
4.4.7	Strap and function test.....	15
4.5	Cable and earth tests	17
4.5.1	General.....	17
4.5.2	Earth tests	17
4.5.3	Electrical signalling and power cables.....	17
4.5.4	Fibre optic cable testing	18
4.5.5	Data link and communications testing.....	19
4.6	Testing to control tables	20
4.6.1	Computer-based systems.....	20
4.6.2	Testing mechanical interlockings to control tables.....	21
4.7	Static tests	21
4.8	Dynamic tests	22
4.8.1	General.....	22
4.8.2	Test trains.....	23
4.9	System function tests and validation	23
4.9.1	General.....	23
4.9.2	Circuit function tests	23
4.9.3	Through function tests	24
4.9.4	Simulator or test rig testing	25

4.9.5	Aspect sequence test	25
4.9.6	Principles testing	25
4.10	Integration tests	26
4.10.1	General	26
4.10.2	Sub-system integration tests	27
4.10.3	System integration testing	28
4.11	Computer-based systems	28
4.11.1	General	28
4.11.2	Hardware and application logic tests	29
4.11.3	System tests	30
Section 5	Trackside apparatus testing	31
5.1	General	31
5.2	Apparatus inspection	31
5.3	Apparatus function testing	32
5.4	Signals	33
5.4.1	Installation inspections	33
5.4.2	Other tests	33
5.4.3	Signal sighting	33
5.5	Track circuits	33
5.5.1	Installation inspections	33
5.5.2	Testing	34
5.5.3	Other tests	34
5.6	Axle counters	35
5.6.1	Installation inspections	35
5.6.2	Checks/adjustments	35
5.6.3	Track occupation	36
5.6.4	Correspondence	36
5.6.5	Modes and functions	36
5.7	Points and other movable infrastructure	36
5.7.1	Installation inspections	36
5.7.2	Testing	36
5.7.3	Other tests	37
5.8	Train protection systems	37
5.9	Level-crossing protection	38
5.9.1	Installation inspections	38
5.9.2	Testing	38
5.9.3	Other tests	39
5.10	Power supplies	39
5.11	Signalling equipment enclosures and rooms	40
5.12	Miscellaneous apparatus	40
Appendix A	Hazard Register (Informative)	42
	Bibliography (Informative)	43

Section 1 Scope and general

1.1 Scope

This document is intended to provide the testing requirements for signalling systems. This includes the following:

- (a) Function testing.
- (b) Principles testing.
- (c) Use of design simulators for testing.
- (d) Verification testing.
- (e) Integration (including correspondence) testing.
- (f) Trackside apparatus testing.
- (g) Cable testing.
- (h) Aspect sequence testing.
- (i) Systems testing.
- (j) Operation validation.

The planning and execution of testing and commissioning activities is covered in AS 7717. It is intended that AS 7716 and AS 7717 are used in conjunction with each other.

This document is intended to be used by RIMs, RSOs, and suppliers.

Signalling design is not within the scope of this document. Refer to AS 7718.

Testing for reliability, availability and maintainability (RAM) analysis is not covered.

Testing of equipment following its replacement, repair or maintenance to confirm it has been restored to working order in accordance with the original design is not specifically covered. This document can be used to inform the development of maintenance testing practices and work instructions.

This document specifies the accepted processes that can be employed when testing of all types of signalling apparatus, that form part of the signalling systems, on the Australian railway network.

This document applies primarily to infrastructure-based signalling systems, but does not exclude systems mounted on-board locomotives and rolling stock where:

- (k) the interface between on-board and infrastructure-based systems is to be tested; or
- (l) an on-board system is required to confirm the outputs of tests (e.g. cab signal or transponder data).

This document applies to all railways in Australia with the exception of the following infrastructure:

- (m) Heritage railways, unless there is an interface with a non-heritage railway.
- (n) Light railways and tramways, unless there is an interface with a railway.

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 7510.1:2026, *Brake Systems, Part 1: Locomotive Rolling Stock*
- AS 7708:2017, *Signals Earthing and Surge Protection*
- AS 7717:2026, *Signal Testing and Commissioning Management*