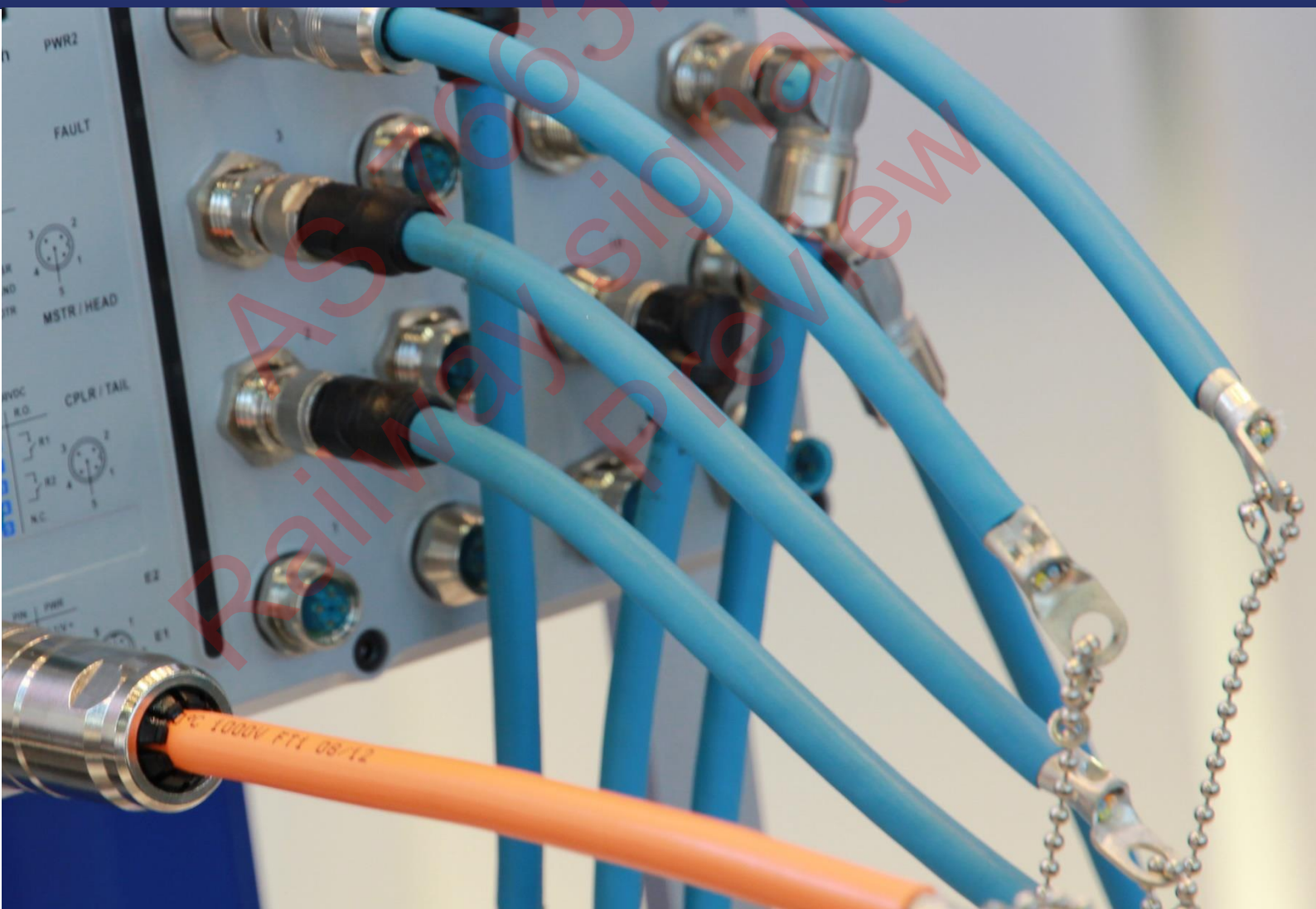




Railway signal cables

RiSSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Train Control Systems Standard



This Australian Standard® AS 7663 Railway signal cables was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

KiwiRail
SMEC

PTA WA

Queensland Rail

The Standard was approved by the Development Group and the Train Control Standing Committee in June, 2020. On June 30, 2020 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently validated 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 comment 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.



Deb Spring
Exec. Chair / CEO
Rail Industry Safety and Standards Board

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AS 7663:2020

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Document details

First published as: AS 7663:2020

ISBN 978-1-76072-922-6

Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2012	26/11/2012	2012 edition
2020	June 30, 2020	2020 first published (aged review)

Approval

Name	Date
Rail Industry Safety and Standards Board	30/06/2020

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This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 7663 Railway signal cables. Membership of this Development Group consisted of representatives from the organisations listed on the inside cover of this document

This Standard supersedes AS 7663:2012

Objective

The objective of this Standard is to set out the minimum requirements for signalling cables to minimise the risk of asset failures and of harm to personnel working with, or in the vicinity of, signalling cables.

This Standard:

- (a) supports mutual accreditation by infrastructure managers, operators, and regulators;
- (b) covers differing railway operations across Australia;
- (c) identifies the risks (hazards) being controlled;
- (d) ensures that cables of an appropriate standard are utilised in the Signalling System;
- (e) supports a consistent approach in the use of Signalling Cables, enabling common cables to be used across state boundaries.

Compliance

There are two types of control contained within Australian Standards developed by RISSB:

1. Requirements.
2. Recommendations.

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.

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.

Controls in RISSB standards address known railway hazards are addressed in Appendix A.

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1 Scope and general

1.1 Scope

This Standard specifies the criteria for designing, procuring, and storing signalling cables on the Australian railway network.

This Standard covers the composition, types, packaging and acceptance criteria for railway signalling cables to ensure technical and safety integrity.

This standard is intended to be used by rail infrastructure managers (RIMs), designers of signalling systems, and manufacturers of signalling cables.

The types of signalling cables covered includes:

- (a) power cables (external);
- (b) multi-core cables (external);
- (c) twisted pair cables (external);
- (d) traction bonding cables;
- (e) track connection cables;
- (f) high frequency track circuit cables;
- (g) quad axle counter cables;
- (h) internal wiring;
- (i) SSI data cables;
- (j) fibre optic cables dedicated to signalling systems.

1.2 Exclusions

The following items are excluded from this Standard.

- (a) Cable terminations.
- (b) Copper telecommunications cables.
- (c) Aerial cables.

1.3 Normative references

The following documents are referred to in this Standard.

- AS 1049 Telecommunications cables - insulation, sheath and jacket.
- AS/NZS 1125 Conductors in insulated electric cables and flexible cords.
- AS/NZS 1660 Test methods for electric cables, cords and conductors.
- AS/NZS 1660.2.3 Test methods for electric cables, cords and conductors, Method 2.3 Insulation, extruded semi-conductive screens and non-metallic sheaths - Methods specific to PVC and halogen free thermoplastic materials
- AS/NZS 1660.3 Test methods for electric cables, cords and conductors - Electrical tests
- AS/NZS 2857 Timber drums for insulated electric cables and bare conductors.