Government of South Australia
Department for Infrastructure and Transport

Train Axles

Engineering Standard

Rail Commissioner

RS1-DOC-000374

DOCUMENT AMENDMENT RECORD

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1. Introduction

The Department for Infrastructure and Transport (The Department) manages and operates the Adelaide Metropolitan Passenger Railway Network (AMPRN) under the Rail Accreditation assigned to The Rail Commissioner (RCom). Rail Safety National Law (RSNL) (South Australia) Act 2012 requires RCom to have a structured and disciplined approach to the management of the asset lifecycle. This standard is part of the engineering management system used to ensure safety and customer service levels are efficiently and effectively supported.

2. Purpose

The purpose of this standard is to provide technical requirements for design, manufacture and maintenance of train axles.

3. Scope

This standard applies to all train passenger rolling stock operating on the AMPRN

4. References

- Rail Safety National Law (SA) Act 2012
- AS 7515:2014 Railway Rolling Stock -Axles
- PTS-MS-10-XM-STD-00000084 Rail Car Wheel Inspection and Defects Standard

5. Acronyms

ACRONYM	FULL NAME
DIT	The Department for Infrastructure and Transport
AMPRN	Adelaide Metropolitan Passenger Rail Network

6. Australian Standard for Axles

DIT adopts all mandatory requirements as specified in *AS 7515:2014* unless modified as shown in Section 7.

DIT adopts all recommended requirements as specified in *AS 7515:2014* as mandatory, unless modified as shown in Section 7. If the applicable clause contains the word should, it is to be read as the word shall. This is to eliminate any doubt as to the requirements of the clause.

7. DIT Addendum to Australian Standard

DIT modifies the following requirements contained within AS 7515:2014.

7.1. Section 1.1 (Scope) Clause 1

Sections 2, 3 and 4 only applies to “new designs” i.e. not applicable for replacement axles on existing AMPRN rolling stock.

7.2. Section 5.1 (Identification and Records – New Axles) Clause 3

If a wheelset or bogie assembly will obscure axle ends, the axle supplier shall clearly paint the axle serial number on a part of the axle barrel that will remain visible after assembly.

7.3. Section 5.1 (Identification and Records – New Axles) Clause 6

Axle suppliers shall provide records of chemical and physical test results for each batch of steel used in axle manufacturing.

7.4. Section 5.2 (Existing Axles) Clause 2

All existing axles shall be clearly branded with at least one end with the information in accordance with *AS 7515:2014.*

7.5. Section 7 (Inspection) Clause 9

Visual inspection according to the criteria defined in Section 8 shall be included in the vehicle planned preventative maintenance regime.

7.6. Section 7 (Inspection) Clause 10

Visual inspection according to the criteria defined in Section 8 and wheelset back-to-back measurements according to *PTS-MS-10-XM-STD-00000084* shall be carried out after all collisions.

7.7. Section 8 (In-service defects) Clause 2

Designers of new axles shall provide, with justification, criteria that define when a vehicle should be removed from service due to axle defects.

Where no design defect criteria exist, DIT adopts the following criteria:

- Nicks, gouges, scratches or grooves greater than 3mm deep.
- Visible cracks in the axle.
- Any defect with sharp edges or points.
- Bent, damaged due to overheating or bearing failure, or otherwise distorted.
- Defects that after remedial grinding cause the axle diameter to fall below the condemning diameter.

Vehicles with axles that meet or exceed the above criteria shall be removed from service.

7.8. Section 9 (Action Following Derailments) Clause 1

Visual inspection according to the criteria defined in Section 8 and wheelset back-to-back measurements according to *PTS-MS-10-XM-STD-00000084* be carried out after all derailments.

7.9. Section 10 (Repair) Clause 1

Designers of new axles shall provide, with justification, minimum diameters for each part of the axle.