

# Wheel Defects

## CODE OF PRACTICE



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# Document Control

## Identification

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## Authoring & Approval

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## Code Change Procedures

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Any changes to the content of this publication require the version number to be updated.

Changes to this publication must be approved according to the procedure for developing management system documents.

The RISSB will identify and communicate changes to this publication.

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Preview

## 1 Introduction

### 1.1 Purpose

This document describes requirements for the inspection and repair of freight, passenger, and infrastructure maintenance rolling stock wheels, providing definitions and illustrations of wheel faults and defects. Each defect category has a severity and corresponding action.

The main purposes of the requirements are to:

- reduce the risk of derailment arising from wheel failure,
- reduce the risk of damage to infrastructure caused by wheel defects,
- minimise hunting/maintaining good vehicle stability and
- minimise wheel/rail contact stresses in order to prevent rolling contact fatigue in wheels and rails.

### 1.2 Scope

This Code is supplementary to AS 7514 Railway Rolling Stock - Wheels: Parts 1 to 4 and applies to new and existing locomotive, freight, passenger and infrastructure maintenance rolling stock.

Rolling stock used on light rail, cane railway and monorail networks are not covered.

Dimensions and limit values given in this Code are primarily for wheels over 700 mm diameter. Where smaller wheels are used, suitable adjustments to the wear and defect limits may need to be made by the railway operator.

For operation at speeds above 200 km/h the defect levels given in this Code may have to be reduced and adapted for increased dynamic or static wheel loading, material strength limitations and passenger comfort.

For operations with axle loads exceeding 30t the specific wheel defect limits and their requirements for qualifying wheelsets for service, including their methods of measure, are not included in this code. Likewise the specific methods of repair/actions to be taken/permitted speeds may not be applicable/acceptable to axle loads exceeding 30t.

When moving rolling stock between differing networks e.g. DIRN and Pilbara networks, or between Queensland, South Australia, Tasmania and Western Australia narrow gauge networks, the differing wheelset back-to-back dimensions, wheel cross-sections and profiles applicable to each Network must be taken into account.

Application of this standard to Infrastructure Maintenance Rolling Stock that operate at speeds below 15 km/h or at rail wheel axle loads below 5 t needs to be assessed on an individual basis and Operators should develop specific wheel defect criteria where necessary.

### 1.3 Definitions

For the purposes of this Code of Practice the definitions given in the Australian Code of Practice – Glossary of Railway Terminology [37] shall apply. The following definitions are specific to this COP.

**Arris:** A raised lip near the flange tip caused by metal flow under load.

**Back:** The face of a wheel on the flange side.

**Class:** A grade of wheel defect severity.