

Australian Standard<sup>®</sup>

**Earth-moving machinery—Off-the-road  
wheels, rims and tyres—Maintenance  
and repair**

**Part 1: Wheel assemblies and rim  
assemblies**



This Australian Standard® was prepared by Committee ME-063, Earthmoving Equipment. It was approved on behalf of the Council of Standards Australia on 26 October 2007. This Standard was published on 23 November 2007.

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The following are represented on Committee ME-063:

- AUSTRROADS
  - Australian Industry Group
  - Construction and Mining Equipment Industry Group
  - Department of Defence
  - Department of Natural Resources and Mines, Qld
  - Department of Primary Industries and Fisheries, Qld
  - Department of Primary Industries, Mine Safety, NSW
  - Safety Institute of Australia
  - WorkCover New South Wales
- 

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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## PREFACE

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving Equipment, at the request of users of earthmoving equipment, particularly those involved in major mining operations, and is supported by the inspectorates of Queensland, New South Wales and Western Australia. These bodies have expressed their concern that wheels, rims and tyres for earthmoving equipment are being subjected to ever-increasing loads and forces. The origin of the forces is the larger, heavier trucks and payloads being introduced and the higher speeds these vehicles can achieve.

Where a wheel or a rim assembly has disintegrated, pieces of the rim or wheel assembly have been thrown for considerable distances. Fatalities and serious injuries have also occurred when correct procedures have not been followed. The release of large quantities of energy in an uncontrolled manner poses a risk to persons nearby and in order that this element of risk be minimized, some controls over the repair, maintenance and inspection of wheels and rim assemblies are considered necessary.

This Standard supersedes AS 4457—1997, *Earth-moving machinery—Off-highway rims and wheels—Maintenance and repair*, and includes revised information relating to tyre inflation pressure and takes into account individual or group site requirements.

The AS 4457 series of Standards comprises two parts as follows:

Part 1: Wheel assemblies and rim assemblies (this Standard)

Part 2: Tyres

The term ‘normative’ has been used in this Standard to define the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

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## STANDARDS AUSTRALIA

## Australian Standard

**Earth-moving machinery—Off-the-road wheels, rims and tyres—  
Maintenance and repair**

## Part 1: Wheel assemblies and rim assemblies

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard sets out the requirements for the identification, safe demounting, inspection, maintenance, testing and mounting of off-the-road wheel and rim assemblies for rubber-tyred earth-moving machinery. It applies to the fitment of wheel assemblies and rim assemblies of not less than 600 mm (24 inches) nominal diameter.

**1.2 OBJECTIVE**

The objective of this Standard is to assist manufacturers, suppliers, employers, repairers and users of earth-moving machinery in minimizing the risk to health and safety of employees working with or otherwise near wheels and rims of earth-moving machinery.

**1.3 REFERENCED DOCUMENTS**

The following documents are referred to in this Standard:

## AS

- |        |                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------|
| 1171   | Non-destructive testing—Magnetic particle testing of ferromagnetic products, components and structures |
| 1627   | Metal finishing—Preparation and pretreatment of surfaces                                               |
| 1627.4 | Part 4: Abrasive blast cleaning of steel                                                               |
| 2207   | Non-destructive testing—Ultrasonic testing of fusion welded joints in carbon and low alloy steel       |

## AS/NZS

- |        |                                                                               |
|--------|-------------------------------------------------------------------------------|
| 1554   | Structural steel welding                                                      |
| 1554.5 | Part 5: Welding of steel structures subject to high levels of fatigue loading |
| 4360   | Risk management                                                               |

**1.4 DEFINITIONS**

For the purpose of this Standard, the definitions below apply.

NOTE: It is suggested that the readers of this Standard also refer to Figures 1.3 to 1.5 for clarification.

**1.4.1 Cold inflation pressure**

The tyre inflation pressure set in accordance with both the tyre and rim manufacturer's recommendations.

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