

AS 4457.2:2024



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

Part 2: Tyres



AS 4457.2:2024

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- Department of Primary Industries and Regional Development
- Engineers Australia
- Forestry Corporation of NSW
- Institute of Instrumentation, Control & Automation Australia
- Minerals Council of Australia
- Resources Safety & Health Queensland
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Preface

This Standard was prepared by the Standards Australia Committee ME-063, Earth-moving Equipment, to supersede AS 4457.2—2008.

The objective of this document is to set requirements for the identification, inspection, repair, retreading and maintenance of off-the-road (OTR) pneumatic tyres in order to assist repairers and retreaders of tyres and users of earth-moving machinery to minimize health and safety risks.

A list of all parts in the AS 4457 series can be found in the Standards Australia online catalogue.

The major changes in this edition are as follows:

- (a) Inclusion of a revised methodology for the repair classification of tyre damage.
- (b) Additional clarifications and descriptions to assist repairers and retreaders of tyres and users of earth-moving machinery.
- (c) Identification of specific hazards related to the repair and maintenance of tyres, and risk mitigation strategies.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

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Introduction

Earth-moving tyres can cause hazardous situations that may result in fatalities when the correct procedures for the repair, retreading and maintenance of tyres have not been followed. The use of repaired or retreaded tyres that are substandard and the use of tyres that have not been maintained to high standards poses risks to persons operating earth-moving machinery. To minimize these risks, controls over the repair, retreading, maintenance and inspection of tyres are considered necessary.

All hazards need to be identified, and the appropriate risk controls put into place.

This document notes where hazards exist, but does not provide an exhaustive list.

In some cases, the document notes a generally accepted risk control, but this will need to be validated against overall risk management.

NOTES

Australian Standard®

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Part 2: Tyres

1 Scope and general

1.1 Scope

This document sets requirements for the identification, inspection, repair, retreading and maintenance of off-the-road (OTR) pneumatic tyres in order to assist repairers and retreaders of tyres and users of earth-moving machinery to minimize health and safety risks.

This document applies to tyres classified as OTR tyres by manufacturers and the international association standards (TRA, ETRTO and JATMA).

This document does not apply to tyres with D.O.T. markings, for which users should refer to AS 1973.

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.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 4457.1, *Earth-moving machinery — Off-the-road wheels, rims and tyres — Maintenance and repairs, Part 1: Wheel assemblies and rim assemblies*

1.3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- (a) IEC Electropedia: available at <https://www.electropedia.org/>
- (b) ISO Online browsing platform: available at <https://www.iso.org/obp>

1.3.1

A measurement

designation for the dimension established between the intact casing plies on either side of the repair area

1.3.2

bead

part of the tyre that is made to secure the tyre to the rim

Note 1 to entry: High tensile steel wires fashioned in a hoop shape are encased in the tyre casing or carcass structure. This comprises one bead core on each side (in the case of a radial tyre) or multiple bead cores on each side (for bias ply tyres)

Note 2 to entry: See [Figure 1](#).

1.3.3

bead area

area of a tyre below the rim line, at the bottom of the sidewall

Note 1 to entry: See [Figure 1](#).