

Australian Standard[®]

Earth-moving machinery—Safety

Part 1: Wheeled machines—Brakes

This Australian Standard was prepared by Committee ME/63, Earth-moving equipment. It was approved on behalf of the Council of Standards Australia on 14 December 1994 and published on 5 April 1995.

The following interests are represented on Committee ME/63:

Australian Mining Industry Council
AUSTROADS
Bureau of Steel Manufacturers of Australia
Construction and Mining Equipment Association of Australia
Department of Defence
Department of Energy and Minerals, Vic.
Department of Mineral Resources, N.S.W.
Department of Minerals and Energy, Qld
Earthmovers and Contractors Association of Queensland
Institute of Municipal Engineering Australia, New South Wales Division
Queensland Forest Service
Rural Water Commission, Vic.
Safety Institute of Australia
State Forests of New South Wales
Telecom Australia
Tractor and Machinery Association of Australia
Water Board, Sydney—Illawarra—Blue Mountains
WorkCover Authority, N.S.W.

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 92167.

Australian Standard[®]

Earth-moving machinery—Safety

Part 1: Wheeled machines—Brakes

PREFACE

This Standard was prepared by the Standards Australia Committee ME/63 on Earth-moving Equipment to supersede AS 2958.1—1988, *Earth-moving machinery—Safety, Part 1: Wheeled machines—Performance requirements and test procedures for braking systems*, which was based on ISO 3450—1985, *Earth-moving machinery—Wheeled machines—Performance requirements and test procedures for braking systems*.

This edition includes requirements for in-service testing. Braking under emergency conditions normally causes some wear and possibly even some damage. Braking performance should be monitored by in-service testing that does not cause unnecessary wear or damage, using test procedures that are not as severe as type testing of the full design requirements.

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

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 OBJECTIVE	4
3 REFERENCED DOCUMENTS	4
4 DEFINITIONS	4
5 DESIGN	5
6 IN-SERVICE TESTING	6
7 INFORMATION	6
APPENDICES	
A TEST CONDITIONS	8
B IN-SERVICE TESTING PROCEDURE	9

STANDARDS AUSTRALIA

Australian Standard

Earth-moving machinery—Safety

Part 1: Wheeled machines—Brakes

1 SCOPE This Standard requires the provision of brakes and specifies requirements for brake systems for any self-propelled rubber-tyred vehicle that is defined in AS 2951.1 as a backhoe loader, dumper, excavator, grader, loader, tractor or tractor-scraper.

Other Standards relating to the safety of earth-moving machinery are AS 2294, AS 2958.0, AS 2958.2 and AS 2958.3.

2 OBJECTIVE The objective of this Standard is to assist designers, manufacturers, suppliers, employers and users of earth-moving machinery to minimize the risks to the health and safety of persons required to work with or near earth-moving machinery.

3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- 2294 Earth-moving machinery—Protective structures
- 2951 Earth-moving machinery—Nomenclature
- 2951.1 Part 1: Basic types
- 2958 Earth-moving machinery—Safety
- 2958.0 Part 0: General introduction and listing
- 2958.2 Part 2: Guards and shields—Dimensions and specifications
- 2958.3 Part 3: Roller compactors—Brake systems

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

4.1 Brake system

4.1.1 Service brake system—a system used to stop and momentarily hold a machine.

4.1.2 Secondary brake system—a system used to stop a machine in the event of any single failure in the service brake system.

4.1.3 Parking brake system—a system used to hold a stopped machine stationary for prolonged periods.

4.2 Machine mass—the operating mass of a machine includes the heaviest combination of cab, canopy and protective structures, e.g. roll-over protective structures (ROPS) and falling object protective structures (FOPS). It also includes components, mountings and equipment, which are approved by the manufacturer of the machine, a 75 kg operator, a full fuel tank, and full lubricating, hydraulic and cooling systems. For dumpers and tractor-scrappers, the machine mass includes rated payload equal to the manufacturer's specification at the specified axle load distribution.

4.3 Retarder—an energy-absorbing device that is able to control the speed of a machine.

4.4 Stopping distance—the distance travelled by a machine during braking from the point where the brake control is activated to where the machine comes to rest.