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STANDARDS Australia

Earth-moving machinery — Guards — Definitions and requirements (ISO 3457:2003, MOD)

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Preface

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving equipment.

The objective of this document is to define the principal terms and specify requirements for, and characteristics of, guards and other means of protecting personnel from mechanical, fluid or thermal hazards associated with the operation and routine maintenance of earth-moving machinery as defined in AS ISO 6165, when used as intended by the manufacturer.

This document is an adoption with national modifications, and has been reproduced from, ISO 3457, *Earth moving machinery — Guards — Definitions and requirements*. The modifications are additional requirements and are set out in Appendix ZZ.

Appendix ZZ lists the modifications to ISO 3457:2003 for the application of this document in Australia.

As this document has been reproduced from an International document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

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

Contents

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3457 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

This fourth edition cancels and replaces the third edition (ISO 3457:1986), which has been technically revised.

Introduction

This International Standard provides performance requirements for guards and other means of protecting personnel from unintentional contact with common mechanical, fluid or thermal hazards on earthmoving machinery during normal machine operation and routine maintenance. Relationships between the distance separating a guard from a hazardous component and the guard opening size based on anthropometric data are included.

Some factors having a significant effect upon personnel protection, such as operator and service personnel training, experience and careful practice, are outside the scope of this International Standard.

Deviations from these requirements to allow technological advances in machine systems and designs are permissible. In complying with this International Standard, the following three safety principles are to be considered, in the order given, based on feasibility:

a) eliminate potential hazards by machine design;

b) guard against contact with sources of potential safety hazards if elimination by design is not feasible;

c) warn of potential safety hazards where neither a) nor b) is feasible.

NOTES

Australian Standard®

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1 Scope

This International Standard defines principal terms and specifies requirements for, and characteristics of, guards and other means of protecting personnel from mechanical, fluid or thermal hazards associated with the operation and routine maintenance of earth-moving machinery as defined in ISO 6165, when used as intended by the manufacturer.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2867, *Earth-moving machinery — Access systems*

ISO 3411, *Earth-moving machinery — Human physical dimensions of operators and minimum operator space envelope*

ISO 6165, *Earth-moving machinery — Basic types — Vocabulary*

ISO 6682, *Earth-moving machinery — Zones of comfort and reach for controls*

ISO 9244, *Earth-moving machinery — Safety signs and hazard pictorials — General principles*

ISO 12508, *Earth-moving machinery — Operator station and maintenance areas — Bluntness of edges*

3 Terms and definitions

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

3.1
guard
protective device, alone or combined with other parts of the machine, designed and fitted to minimize the possibility of contact with a potentially hazardous machine component

3.1.1
barrier guard
guard that restricts the movement of a person's body or a part of it, in order to avoid its contact with a machine component or exposure to other, similar hazards

EXAMPLE Rail, frame, cover or enclosure.

3.1.2
fender
guard partially covering the wheels or tracks of a machine which restricts material that may be thrown by the wheels or tracks, and which can also be used to limit the operator's contact with moving parts

3.1.3
fan guard
structure covering the engine cooling fan to protect against inadvertent contact with the rotating fan

3.1.4
thermal guard
guard that protects persons from contact with hot parts of the machine, and which can also be used to provide a heat barrier between the hot part and flammable materials