Australian Standard®

# Safeguarding of machinery

# Part 1: General principles

This Australian Standard was prepared by Committee SF/41, General Principles for the Guarding of Machinery. It was approved on behalf of the Council of Standards Australia on 23 February 1996 and published on 5 July 1996.

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The following interests are represented on Committee SF/41:

Australian Manufacturing Workers Union

Department for Industrial Affairs

Department of Employment, Vocational Education, Training and Industrial Relations, Qld

Electricity Supply Association of Australia

Ergonomics Society of Australia

Federal Chamber of Automotive Industries

Health and Safety Organisation, Vic.

Metal Trades Industry Association of Australia

National Safety Council of Australia

Safety Institute of Australia

Tractor and Machinery Association of Australia

University of Melbourne

WorkCover Authority of N.S.W.

Worksafe Western Australia

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PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7337 0442 5

# PREFACE

This Standard was prepared by the Standards Australia Committee SF/41 on General Principles for the Safeguarding of Machinery as a revision of AS 4024.1(Int)—1992, *Safeguarding of machinery*, Part 1: *General principles*.

During the preparation of this Standard the Committee retained the concepts provided in BS 5304, *Code of practice for safety of machinery* and considered a number of documents emanating from the International Standards Organization Committee on Safety of Machinery.

It is intended that this Standard contain the general underlying principles for the safety of machine systems in general, whilst leaving requirements unique to a particular type of machine in a Standard covering the guarding of that class of machine. Therefore, within the Standard, emphasis has been placed on the principles of risk control relative to the hazards associated with machine systems in general, without regard to a specific type. In this way, it is hoped that engineers, designers and other persons who may be required to design, build, or evaluate the effectiveness of machine safety systems, will be able to apply the principles to many applications not specifically included herein. Particular emphasis has been placed on the selection of appropriate safeguarding methods.

The content of the Standard is presented in a logical sequence starting with the basic principles to be followed and leading to hazard recognition and risk assessment.

The Sections dealing with the selection of risk control measures, machine and control system design and safeguarding introduce a hierarchy of guarding, which become increasingly stringent as the perceived risk increases.

All phases of machine life are considered and sections dealing with installation and maintenance are included because during these phases, the risk of injury is frequently higher than that experienced during normal production phases. The importance of safe working practices as part of the overall machine system is emphasized.

The Standard applies ergonomic principles to machinery and workplace design, with the intended result that this will lead to improved safety and operational efficiency.

Developments are constantly being introduced and experience being gained. This not only serves to counter the dangers associated with new technologies and manufacturing methods but also to improve the safety of traditional types of machinery. Users of this Standard should therefore make themselves aware of any new codes of practice which may be published from time to time and any other relevant new developments.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix 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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Originated as AS 4024.1(Int)—1992.
Revised and designated AS 4024.1—1996.

STANDARDS AUSTRALIA

# Australian Standard

# Safeguarding of machinery

## Part 1: General principles

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE** This Standard identifies the hazards and risks arising from the use of industrial machinery and describes methods for the elimination or minimization of these hazards and risks, as well as the safeguarding of machinery and the use of safe working practices. The Standard describes and illustrates a number of safety principles and provides guidelines by which it is possible to assess which measure or methods it is practicable to adopt in particular circumstances. Although reference is made to specific types of machine, specific recommendations are not given for every type of machine or application.

Reference is made to non-mechanical hazards but these are not covered in detail.

**1.2 OBJECTIVE** The objective of this Standard is to enable designers, manufacturers, suppliers, employers and users of machinery to minimize the risks to health and safety of employees and others working with or otherwise near machinery.

**1.3 APPLICATION** This Standard is intended for those who design, manufacture, supply, install, use, maintain or modify machinery, machinery guarding or safety devices.

The Standard is also intended to be used by those concerned with information, instruction and training in safe working practices, and identifies the existence of Standards for a number of particular classes of machine.

Alternative methods of providing safety to those given may be used provided that the level of safety offered by the alternative is at least equivalent to that provided by the methods given in this Standard.

Some regulatory authorities have specific requirements relating to the forms that guarding may take and to the order in which guarding techniques may be considered. Users of this Standard should therefore make themselves aware of any specific requirements in the jurisdiction where the machinery will be used.

This Standard may still be used in these jurisdictions to identify the most appropriate level of system integrity required, and to provide guidance in other aspects of machine system safety.

**1.4 REFERENCED AND RELATED DOCUMENTS** The following documents are referred to in this Standard:

AS

1219 Power presses—Safety requirements

1318 Use of colour for the marking of physical hazards and the identification of certain equipment in industry

1319 Safety signs for the occupational environment

1345 Identification of the contents of piping conduits and ducts