AS/NZS 4024.1604:2014
ISO 13850:2006

AS/NZS 4024.1604:2014

Australian/New Zealand Standard™

Safety of machinery

Part 1604: Design of controls, interlocks and guarding—Emergency stop—Principles for design

STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-041, General Principles for the Guarding of Machinery. It was approved on behalf of the Council of Standards Australia on 3 June 2014 and on behalf of the Council of Standards New Zealand on 24 April 2014.
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The following are represented on Committee SF-041:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Manufacturing Workers Union
Department of Mines and Petroleum, WA
Department of the Premier and Cabinet, SA
Engineers Australia
Federal Chamber of Automotive Industries
Human Factors and Ergonomics Society of Australia
Institute of Instrumentation, Control and Automation
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Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Australia Web Site at www.standards.org.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 4024.1604.

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Part 1604: Design of controls, interlocks and guarding—Emergency stop—Principles for design

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-041, General Principles for the Guarding of Machinery, to supersede AS 4024.1604—2006.

It is emphasized that this Standard is part of the AS(/NZS) 4024.1 series and it is imperative that it is used in conjunction with other applicable parts of the series. A complete listing of all current parts of the AS(/NZS) 4024.1 series can be found at the Standards Australia website <www.standards.org.au> and in AS/NZS 4024.1100, *Safety of machinery*, Part 1100: *Application Guide*.

The objective of this Standard is to specify the functional requirements and design principles for the emergency stop function on machinery, independent of the type of energy used to control the function.

It is applicable to all machinery except for the following:

(a) Machines in which the provision of emergency stop would not lessen the risk.

(b) Hand-held portable machines and hand-guided machines.

It does not deal with functions such as reversal or limitation of motion, defection, shielding, braking or disconnecting, which can be part of the emergency stop function.

This Standard is identical with, and has been reproduced from ISO 13850:2006, *Safety of machinery—Emergency stop—Principles for design.*

As this Standard is reproduced from an International Standard, the following applies:

(i) In the source text ‘this International Standard’ should read ‘this Australian/New Zealand Standard’.

(ii) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS	
60204	Safety of machinery—Electrical equipment of machines	60204	Safety of machinery—Electrical equipment of machines
60204-1	Part 1: General requirements	60204.1	Part 1: General requirements (IEC 60204-1, Ed. 5 (FDIS) MOD)

INTRODUCTION

The structure of safety standards in the field of machinery is as follows.

a) Type-A standards (basis standards) give basic concepts, principles for design, and general aspects that can be applied to machinery.

b) Type-B standards (generic safety standards) deal with one or more safety aspect(s) or one or more type(s) of safeguard that can be used across a wide range of machinery:

   — type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

   — type-B2 standards on safeguards (e.g. two-hands controls, interlocking devices, pressure sensitive devices, guards).

c) Type-C standards (machinery safety standards) deal with detailed safety requirements for a particular machine or group of machines.

This International Standard is a type-B2 standard as stated in ISO 12100-1.

When provisions of a type-C standard are different from those which are stated in type-A or type-B standards, the provisions of the type-C standard take precedence over the provisions of the other standards for machines that have been designed and built according to the provisions of the type-C standard.

NOTES

AUSTRALIAN/NEW ZEALAND STANDARD

Safety of machinery

Part 1604:
Design of controls, interlocks and guarding—Emergency stop—Principles for design

1 Scope

This International Standard specifies functional requirements and design principles for the emergency stop function on machinery, independent of the type of energy used to control the function.

It is applicable to all machinery except for:

— machines in which the provision of emergency stop would not lessen the risk;

— hand-held portable machines and hand-guided machines.

It does not deal with functions such as reversal or limitation of motion, deflection, shielding, braking or disconnecting, which can be part of the emergency stop function.

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.

IEC 60204-1:2005 *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60947-5-5:2005, *Low-voltage switchgear and controlgear — Part 5-5: Control circuit devices and switching elements — Electrical emergency stop device with mechanical latching function*

IEC 60417-DB:2002, *Graphical symbols for use on equipment* (on-line database)

3 Terms and definitions

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

3.1
emergency stop
emergency stop function
function that is intended to

— avert arising, or reduce existing, hazards to persons, damage to machinery or to work in progress,

— be initiated by a single human action

NOTE 1 Hazards, for the purposes of this International Standard, are those which can arise from

— functional irregularities (e.g. machinery malfunction, unacceptable properties of the material processed, human error),

— normal operation.

NOTE 2 Adapted from ISO 12100-1:2003, definition 3.37.