

**AS 4024.1501—2006**  
(Incorporating Amendment No. 1)

AS 4024.1501—2006



## **Safety of machinery**

### **Part 1501: Design of safety related parts of control systems—General principles for design**



This Australian Standard® was prepared by Committee SF-041, General Principles for the Guarding of Machinery. It was approved on behalf of the Council of Standards Australia on 11 April 2006.

This Standard was published on 29 June 2006.

---

The following are represented on Committee SF-041:

- Australian Chamber of Commerce and Industry
  - Australian Electrical and Electronic Manufacturers Association
  - Department for Administration and Information Services, SA
  - Department of Consumer and Employment Protection, WorkSafe Division, WA
  - Department of Primary Industries, Mine Safety, NSW
  - Engineers Australia
  - Federal Chamber of Automotive Industries
  - Human Factors and Ergonomics Society of Australia
  - Institution of Instrumentation, Control and Automation Australia
  - National Electrical and Communications Association
  - National Safety Council of Australia
  - Office of the Australian Safety and Compensation Council
  - Safety Institute of Australia
  - The University of Melbourne
  - Tractor and Machinery Association of Australia
  - Victorian WorkCover Authority
- 

This Standard was issued in draft form for comment as DR 05442.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

---

### **Keeping Standards up-to-date**

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting [www.standards.org.au](http://www.standards.org.au)

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.org.au](mailto:mail@standards.org.au), or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

**AS 4024.1501—2006**  
(Incorporating Amendment No. 1)

**Australian Standard<sup>®</sup>**

**Safety of machinery**

**Part 1501: Design of safety related parts  
of control systems—General principles  
for design**

Originated as part of AS 4024.1(Int)—1992.  
Previous edition part of AS 4024.1—1996.  
Revised in part and redesignated as AS 4024.1501—2006.  
Reissued incorporating Amendment No. 1 (November 2015).

**COPYRIGHT**

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7413 X

## PREFACE

This Standard was prepared by the Standards Australia Committee SF-041, as a revision, in part, of AS 4024.1—1996, *Safeguarding of machinery, Part 1: General principles*.

*This Standard incorporates Amendment No. 1 (November 2015). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

A1

This Standard is technically equivalent to ISO 13849-1:1999, *Safety of machinery—Safety-related parts of control systems—Part 1: General principles for design*. This will maintain consistency with other machine-specific Australian Standards.

This edition has been published as a series of Parts rather than the single Standard previously published as AS 4024.1. In doing this, the Committee has cleared the way for simple revisions in the future. When a new edition of a relevant Standard becomes available at the international level, it will be adopted and published within the framework of AS 4024 with a minimum delay, so ensuring continued international alignment.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

## CONTENTS

	<i>Page</i>
FOREWORD.....	4
1 SCOPE.....	5
2 OBJECTIVE .....	5
3 REFERENCED DOCUMENTS .....	5
4 DEFINITIONS .....	6
5 GENERAL CONSIDERATIONS .....	7
6 CHARACTERISTICS OF SAFETY FUNCTIONS .....	12
7 CATEGORIES .....	16
8 FAULT CONSIDERATION .....	22
9 VALIDATION.....	23
10 VALIDATION REPORT .....	25
11 MAINTENANCE.....	25
12 INFORMATION TO BE PROVIDED TO THE USER.....	25
APPENDICES	
A QUESTIONNAIRE FOR USE DURING THE DESIGN PROCESS .....	26
B RELATIONSHIP BETWEEN SAFETY, RELIABILITY AND AVAILABILITY FOR MACHINERY .....	28
C GUIDANCE FOR SELECTION OF CATEGORIES.....	29
D EXAMPLES OF SIGNIFICANT FAULTS AND FAILURES FOR VARIOUS TECHNOLOGIES .....	32

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-