

Australian Standard[®]

Cranes, hoists and winches—Safe use

Part 1: General requirements



This Australian Standard® was prepared by Committee ME-005, Cranes. It was approved on behalf of the Council of Standards Australia on 19 January 2011.
This Standard was published on 18 March 2011.

The following are represented on Committee ME-005:

- Australian Chamber of Commerce and Industry
 - Australian Industry Group
 - Australian Institute for Non-Destructive Testing
 - Bureau of Steel Manufacturers of Australia
 - Construction and Mining Equipment Industry Group
 - Consult Australia
 - Crane Association of New Zealand
 - Crane Industry Council of Australia
 - Department of Commerce, WorkSafe Division (WA)
 - Department of Justice and Attorney General, Qld
 - Department of Labour New Zealand
 - Department of the Premier and Cabinet (South Australia)
 - Electricity Engineers Association (New Zealand)
 - Elevating Work Platform Association of Australia
 - Engineers Australia
 - Horticulture New Zealand
 - Industry and Investment NSW
 - Institution of Professional Engineers New Zealand
 - Vehicle Loading Crane Interests
 - WorkCover New South Wales
 - WorkSafe Victoria
-

This Standard was issued in draft form for comment as DR AS 2550.1.

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Standards may also be withdrawn.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

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, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

Cranes, hoists and winches—Safe use

Part 1: General requirements

Originated as part of AS 2550—1982.
Revised and redesignated in part as AS 2550.1—1993.
Second edition 2002.
Third edition 2011.

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 978 0 7337 9786 6

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee ME-005, Cranes, to supersede AS 2550.1—2002, *Cranes, hoists and winches—Safe use, Part 1: General*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to retain this Standard as an Australian Standard rather than develop it as an Australian/New Zealand Standard.

The objective of this Standard is to specify general requirements for the safe use of cranes, hoists and winches.

The objective of the AS 2550 series of Standards is to provide uniform requirements and guidance for the safe use of cranes, hoists and winches.

Major changes in this Edition include extensive revision of the inspection and maintenance requirements in Section 7, and the addition of a new Section 9 that specifies methods to monitor design duty and introduce the concept of design working period. Section 9 of this Standard is based on the concepts outlined in ISO 12482-1, *Cranes condition monitoring, Part 1: General*.

Published Standards in the series are the following:

AS

2550	Cranes, hoists and winches—Safe use
2550.1	Part 1: General requirements (this Standard)
2550.3	Part 3: Bridge, gantry, portal (including container cranes) jib and monorail cranes
2550.4	Part 4: Tower cranes
2550.5	Part 5: Mobile cranes
2550.6	Part 6: Guided storing and retrieving appliances
2550.7	Part 7: Builders' hoists and associated equipment
2550.9	Part 9: Vehicle hoists
2550.10	Part 10: Elevating work platforms
2550.11	Part 11: Vehicle loading cranes
2550.13	Part 13: Building maintenance units
2550.15	Part 15: Concrete placing equipment
2550.16	Part 16: Mast climbing work platforms
2550.19	Part 19: Telescopic handlers
2550.20	Part 20: Self-erecting tower cranes

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 APPLICATION	5
1.3 REFERENCED DOCUMENTS	5
1.4 DEFINITIONS	6
1.5 INSTRUCTIONS	7
1.6 LEGISLATED RESPONSIBILITY	7
1.7 COMPETENCY OF PERSONNEL	7
1.8 RISK ASSESSMENT	8
SECTION 2 PLANNING	
2.1 GENERAL	9
2.2 PLANNING.....	9
2.3 MATTERS TO BE CONSIDERED.....	10
SECTION 3 SELECTION.....	11
SECTION 4 SITING	
4.1 GENERAL	12
4.2 CRANE STANDING.....	12
4.3 PROXIMITY HAZARDS AND VISIBILITY	13
4.4 ENVIRONMENTAL RESTRICTIONS.....	13
4.5 CLEARANCES	13
SECTION 5 ERECTION, COMMISSIONING AND DISMANTLING	
5.1 IDENTIFICATION OF CRANE COMPONENTS	14
5.2 ERECTION, COMMISSIONING AND DISMANTLING INSTRUCTIONS	14
5.3 ELECTRICAL SUPPLY	14
5.4 COMMISSIONING.....	14
5.5 SAFEGUARDING THE CRANE.....	14
SECTION 6 OPERATION	
6.1 OPERATIONAL INSTRUCTIONS	15
6.2 CRANE-OPERATION MANAGEMENT	16
6.3 COMPLIANCE WITH INSTRUCTIONS	17
6.4 COMMUNICATION OF IRREGULARITIES	17
6.5 LEAVING THE CRANE UNATTENDED	17
6.6 OUT OF SERVICE	17
6.7 HOUSEKEEPING	17
6.8 CRANE ACCESS AND EGRESS	18
6.9 PERSONS APPROACHING THE PROXIMITY OF A CRANE	18
6.10 CRANE OPERATION	18
6.11 LOAD SECURITY	20
6.12 CONTROL OF LOAD.....	20
6.13 TAG LINES.....	20
6.14 COMMUNICATION.....	20
6.15 HANDLING LOADS OVER PUBLIC ACCESS AREAS AND ADJACENT BUILDINGS.....	22
6.16 NON-POSITIVE LIFTING ATTACHMENTS.....	23

6.17	INDICATING AND LIMITING DEVICES	23
6.18	RIDING ON THE CRANE STRUCTURE	23
6.19	SUSPENSION OF PERSONS BY CRANE.....	23
6.20	OPERATION NEAR AERIAL CONDUCTORS (OVERHEAD POWERLINES)	25
6.21	UNDERGROUND CONDUCTOR CONTACT	29
6.22	SPECIAL DUTIES	30
6.23	WEATHER CONDITIONS.....	31
6.24	INCIDENT OR DAMAGE.....	31
6.25	MODIFICATIONS TO CRANES	32
6.26	FIRE EXTINGUISHER.....	32
6.27	DESIGNED LIFTS.....	32
6.28	MULTIPLE HOIST OR CRANE OPERATION	33
6.29	MANUALS	35
6.30	VESSEL-MOUNTED CRANES	36
 SECTION 7 MAINTENANCE, INSPECTION AND REPAIR		
7.1	GENERAL	39
7.2	MAINTENANCE	40
7.3	INSPECTION.....	40
7.4	REPAIRS.....	43
7.5	RECORDS.....	45
 SECTION 8 INSPECTION OF ROPES, HOOKS AND LIFTING GEAR		
8.1	ROPES	46
8.2	HOOKS AND HOOK BLOCKS	47
8.3	LIFTING GEAR.....	48
 SECTION 9 MAJOR ASSESSMENT FOR CONTINUED USE OR CHANGED OPERATION		
9.1	GENERAL	49
9.2	RECORDING OF CRANE OPERATION.....	49
9.3	ASSESSMENT OF DESIGN WORKING PERIOD.....	50
9.4	MAJOR ASSESSMENT.....	51
9.5	GENERAL OVERHAUL	52
9.6	DWP CALCULATION FOR CRANES.....	52
9.7	DWP CALCULATION FOR HOISTING MECHANISMS.....	55
 APPENDICES		
A	STANDARDS FOR COMPONENTS USED IN LIFTING GEAR.....	58
B	EXAMPLE OF INSPECTION AND TESTING CERTIFICATE	60
C	LICENCES TO PERFORM HIGH RISK WORK	65
D	GUIDANCE FOR DESIGNED LIFTS	66
E	SAFE WORK PROCEDURES FOR THE MAINTENANCE AND THE INSPECTION OF CRANES.....	68
F	RECOMMENDED MINIMUM MAINTENANCE AND INSPECTION REQUIREMENTS FOR CRANES.....	70
G	CHECKLIST TO DETERMINE SUITABILITY OF MANUFACTURER'S INSTRUCTIONS	71
H	CRANE SERVICE RECORD (LOGBOOK) FORMAT	74
I	USE OF EARTHMOVING EQUIPMENT AS A CRANE	76

STANDARDS AUSTRALIA

Australian Standard
Cranes, hoists and winches—Safe use

Part 1: General requirements

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies general requirements for the safe use of cranes, hoists and winches.

NOTES:

- 1 Requirements applicable to particular types of cranes are specified in the specific parts of AS 2550.
- 2 Requirements that are common to two or more types of cranes are contained in this Standard; therefore, some requirements contained herein do not apply to all types of cranes.

1.2 APPLICATION

The requirements given in other parts of AS 2550 shall take precedence over the corresponding requirements of this Standard.

Where earthmoving equipment is to be used as a crane, the requirements in Appendix I shall apply.

Where this Standard uses the word ‘crane’ it shall be taken to mean ‘hoist’, ‘winch’ or components as defined in AS 2549.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

NOTE: A list of Australian Standards relevant to lifting gear is given in Appendix A.

AS

1318	Use of colour for the marking of physical hazards and the identification of certain equipment in industry
1418	Cranes, hoists and winches (all Parts)
2076	Wire-rope grips for non-lifting applications
2549	Cranes (including hoists and winches)—Glossary of terms
2550	Cranes, hoists and winches—Safe use (all Parts)
2759	Steel wire rope—Use, operation and maintenance
4991	Lifting devices

AS/NZS

1554	Structural steel welding
1554.4	Part 4: Welding of high strength quenched and tempered steels
1891	Industrial fall-arrest systems and devices
1891.1	Part 1: Harnesses and ancillary equipment
3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)