

# Australian/New Zealand Standard

---

## **Guidelines for scaffolding**

---

## AS/NZS 4576:1995

---

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD/36, Scaffolding. It was approved on behalf of the Council of Standards Australia on 20 March 1995 and on behalf of the Council of Standards New Zealand on 27 March 1995. It was published on 15 June 1995.

---

The following interests are represented on Committee BD/36:

A.C.T. WorkCover

Aluminium Development Council, Australia

Australian Chamber of Commerce and Industry

Australian Institute of Building Surveyors

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

Department of Labour, New Zealand

Department of Occupational Health, Safety and Welfare, W.A.

Health and Safety Organisation, Vic.

Master Builders Australia

Metal Trades Industry Association of Australia

New Zealand Contractors Federation

New Zealand Engineering Federation

Tasmania Development and Resources

Work Health Authority, N.T.

WorkCover Authority of N.S.W.

---

**Review of Standards.** To keep abreast of progress in industry, Joint Australian/New Zealand Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Joint Standards and related publications will be found in the Standards Australia and Standards New Zealand Catalogue of Publications; this information is supplemented each month by the magazines 'The Australian Standard' and 'Standards New Zealand', which subscribing members receive, and which give details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Joint Standards, addressed to the head office of either Standards Australia or Standards New Zealand, are welcomed. Notification of any inaccuracy or ambiguity found in a Joint Australian/New Zealand Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

---

*This Standard was issued in draft form for comment as DR 93025.*

---

AS/NZS 4576:1995

# Australian/New Zealand Standard

---

## **Guidelines for scaffolding**

---

PUBLISHED JOINTLY BY:

STANDARDS AUSTRALIA  
1 The Crescent,  
Homebush NSW 2140 Australia

STANDARDS NEW ZEALAND  
Level 10, Standards House,  
155 The Terrace,  
Wellington 6001 New Zealand

ISBN 0 7262 9761 5

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD/36 on Scaffolding.

Every attempt has been made to ensure that the information in this Standard is compatible with Worksafe Australia's publications *National Standard for Plant* and *National Occupational Health and Safety Certification Standard for Users and Operators of Industrial Equipment*, and with *Health and Safety in Employment Act 1992* in New Zealand.

Persons using this Standard are advised to familiarize themselves with the specific statutory requirements relating to scaffolding and the certification of scaffolders in New Zealand and in the States and Territories of Australia.

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.

### © Copyright — STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Users of Standards are reminded that copyright subsists in all Standards Australia and Standards New Zealand publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia or Standards New Zealand may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia or Standards New Zealand. Permission may be conditional on an appropriate royalty payment. Australian requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia. New Zealand requests should be directed to Standards New Zealand.

Up to 10 percent of the technical content pages of a Standard may be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia or Standards New Zealand.

Inclusion of copyright material in computer software programs is also permitted without royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia or Standards New Zealand at any time.

## CONTENTS

	<i>Page</i>
<b>SECTION 1 SCOPE AND GENERAL</b>	
1.1 SCOPE .....	8
1.2 INCLUSIONS .....	8
1.3 EXCLUSIONS .....	8
1.4 REFERENCED DOCUMENTS .....	8
1.5 DEFINITIONS .....	8
<b>SECTION 2 TRAINING AND COMPETENCY</b>	
2.1 GENERAL .....	9
2.2 FURTHER INFORMATION FROM REGULATORY AUTHORITIES .....	9
2.3 SUPERVISION OF TRAINEES .....	9
2.4 TRAINING PROGRAMS .....	10
2.5 GAINING EXPERIENCE .....	10
2.6 RECORD OF TRAINING .....	10
2.7 AUSTRALIAN CERTIFICATES OF COMPETENCY .....	11
2.8 NEW ZEALAND CERTIFICATES OF COMPETENCY .....	11
<b>SECTION 3 TOOLS AND EQUIPMENT</b>	
3.1 INTRODUCTION .....	12
3.2 SCAFFOLD SPANNERS .....	12
3.3 PODGER HAMMERS .....	12
3.4 ADJUSTABLE WRENCHES .....	13
3.5 SPIRIT LEVELS .....	13
3.6 RULES AND TAPE MEASURES .....	13
3.7 SCAFFOLD BELTS .....	13
3.8 INDUSTRIAL SAFETY HELMETS .....	13
3.9 GLOVES .....	13
3.10 FOOTWEAR .....	14
3.11 FIBRE ROPE .....	14
3.12 WEBBING SLINGS .....	15
<b>SECTION 4 SITE FOR ERECTION</b>	
4.1 INTRODUCTION .....	16
4.2 PUBLIC PLACES .....	16
4.3 WORK AREAS FOR SCAFFOLDERS .....	16
<b>SECTION 5 HAZARDS</b>	
5.1 OCCUPATIONAL HEALTH AND SAFETY .....	17
5.2 EXPERT ADVICE .....	17
5.3 IDENTIFICATION OF HAZARDS .....	17
5.4 PROXIMITY TO POWERLINES .....	18
5.5 PROXIMITY TO HAZARDOUS PLANT .....	19
5.6 RISK ASSESSMENT .....	20
5.7 RISK CONTROL .....	20

## SECTION 6 SELECTION

6.1	OCCUPATIONAL HEALTH AND SAFETY	21
6.2	CRITERIA	21
6.3	SUPPORTING STRUCTURE	21
6.4	FITNESS FOR PURPOSE	22

## SECTION 7 MATERIALS

7.1	COMPLIANCE WITH STANDARDS	23
7.2	INSPECTION OF USED EQUIPMENT	24

## SECTION 8 GENERAL DESIGN

8.1	INTRODUCTION	27
8.2	GENERAL	27
8.3	FOUNDATIONS	27
8.4	STABILITY	28
8.5	TYING	28
8.6	RIGIDITY	31
8.7	WORKING PLATFORMS	31
8.8	EDGE PROTECTION	33
8.9	ACCESS AND EGRESS	34
8.10	CONTAINMENT SHEETING	38
8.11	STEEL WIRE ROPE (SWR)	41
8.12	CHAIN	44

## SECTION 9 GENERAL CONSTRUCTION

9.1	SELECTION OF APPROPRIATE METHOD	45
9.2	ORGANIZING THE WORK SEQUENCE	45
9.3	ADVERSE WEATHER	45
9.4	PLATFORM	45
9.5	GUARDRAILS	45
9.6	ACCESS	45
9.7	WORKING ALOFT	46
9.8	SAFETY HARNESS	46
9.9	EQUIPMENT HANDLING	46
9.10	HANDBALLING	46
9.11	HANDLINES	46
9.12	TOPPING UP STANDARDS	47
9.13	USE OF GIN WHEELS	47
9.14	CANTILEVER BUILDERS' HOISTS	48

SECTION 10 ADDITIONAL REQUIREMENTS FOR SPECIFIC TYPES  
OF SCAFFOLD

10.1	TRESTLE SCAFFOLDS	50
10.2	BRACKET SCAFFOLDS	51
10.3	PREFABRICATED SCAFFOLDS	55
10.4	MOBILE SCAFFOLDS	61
10.5	TUBE-AND-COUPLER SCAFFOLDS	63
10.6	SPUR SCAFFOLDS	64
10.7	CANTILEVERED SCAFFOLDS	64
10.8	MAST-CLIMBING WORK PLATFORMS	66
10.9	HUNG SCAFFOLDS	67

	<i>Page</i>
<b>SECTION 11 ADDITIONAL REQUIREMENTS FOR SUSPENDED SCAFFOLDS</b>	
11.1 EQUIPMENT .....	71
11.2 ERECTION, ALTERING AND DISMANTLING .....	71
11.3 ACCESS .....	72
11.4 SUPPORTING STRUCTURES .....	72
11.5 SUSPENSION RIGS .....	73
11.6 OVERHEAD FIXINGS .....	78
11.7 TRAVERSING EQUIPMENT .....	78
11.8 ROPE TENSION .....	79
11.9 ELECTRICAL EQUIPMENT AND CONTROLS .....	79
11.10 PNEUMATIC EQUIPMENT .....	80
11.11 PROTECTIVE DEVICES .....	80
11.12 LOAD-LIMITING DEVICES .....	80
11.13 CRADLES .....	80
11.14 MULTI-TIERED CRADLES .....	81
11.15 TRAINING .....	81
11.16 NOTIFICATION OF USE .....	81
11.17 SAFETY EQUIPMENT .....	82
11.18 OPERATION .....	82
11.19 WORK PRACTICES .....	82
11.20 WHILE UNATTENDED .....	83
<b>SECTION 12 GENERAL USE</b>	
12.1 SPECIFIC TYPES OF SCAFFOLD .....	84
12.2 BEFORE USE .....	84
12.3 HANDOVER CERTIFICATE .....	84
12.4 DURING USE .....	85
12.5 AFTER USE .....	85
<b>SECTION 13 INSPECTION, TESTING AND MAINTENANCE</b>	
13.1 RECORD KEEPING .....	86
13.2 FREQUENCY OF INSPECTIONS .....	86
13.3 AUSTRALIAN REQUIREMENTS .....	86
13.4 NEW ZEALAND REQUIREMENTS .....	87
13.5 INSPECTIONS .....	87
13.6 REPAIRS TO ERECTED SCAFFOLD .....	88
13.7 COUPLERS AND ACCESSORIES .....	88
13.8 SCAFFOLD TUBES .....	88
13.9 SCAFFOLD PLANKS .....	88
13.10 MODULAR SCAFFOLDING .....	89
13.11 ACCESS LADDERS .....	89
13.12 SCAFFOLDING HOISTS .....	91
13.13 PROTECTIVE DEVICES .....	92
13.14 LOAD-LIMITING DEVICES .....	93
13.15 WIRE ROPES FOR SCAFFOLDING HOISTS .....	93

## APPENDICES

A	REFERENCED DOCUMENTS	95
B	GLOSSARY OF TERMS	98
C	SAMPLE QUESTIONS FOR AUSTRALIAN EXAMINATIONS	113
D	COMMON BENDS AND HITCHES FOR FIBRE ROPE	116
E	GENERAL LOADING INFORMATION	117
F	INDUSTRIAL SAFETY NETS	122
G	INSPECTION OF BELTS AND HARNESES—CHECK LIST	130
H	INSPECTION OF SELF-LOCKING ANCHORAGES—CHECK LIST	131
I	CANTILEVER BUILDERS' HOISTS	132
J	INSPECTION CHECKLIST	134
K	RECORD AND INSPECTION SHEETS	140
L	AUSTRALIAN TEST FOR TIMBER SCAFFOLD PLANKS	143

## FIGURES

3.1	EXAMPLES OF COMMONLY USED SCAFFOLDING TOOLS	12
3.7	A TYPICAL SCAFFOLDER'S BELT	13
3.11	COMMON WHIPPING	14
4.3	TYPICAL EXAMPLE OF WELL-STACKED SCAFFOLDING EQUIPMENT	16
5.4.2	CLEARANCE TO ELECTRICAL CONDUCTOR WIRES	18
8.3(A)	UNSAFE FOUNDATION	29
8.3(B)	ADEQUATE FOUNDATION	29
8.3(C)	FOUNDATIONS ON SLOPING GROUND	30
8.3(D)	UNDERMINING OF SUPPORTING FOUNDATION	31
8.5	SOME TIE ASSEMBLIES	32
8.6	TYPICAL TRANSVERSE BRACING FOR A SCAFFOLD	33
8.7	UNSAFE WORKING PLATFORMS	35
8.8(A)	TYPICAL BRICKGUARDS	37
8.8(B)	TYPICAL CANTILEVERED CATCH PLATFORM	37
8.9(A)	TYPICAL MEANS OF ACCESS	39
8.9(B)	UNSUITABLE FORMS OF LADDER ACCESS	40
8.10(A)	TYPICAL LAP DETAILS OF CONTAINMENT SHEETING	42
8.10(B)	TYPICAL FIXING ARRANGEMENT OF CONTAINMENT SHEETING	42
8.10(C)	TYPICAL POSITIONING OF EYELETS TO SUPPORT CONTAINMENT SHEETING	43
8.11(A)	A TYPICAL CONSTRUCTION OF STEEL-WIRE ROPE	44
8.11(B)	MEASURING THE DIAMETER OF STEEL-WIRE ROPE	44
9.10	HANDBALLING	47
9.11	USE OF A HANDLINE	48
9.13	GIN WHEELS	49
10.1(A)	TYPICAL SPLITHEAD AND TRESTLE SCAFFOLDS	52
10.1(B)	WRONG USE OF TRESTLE SCAFFOLDS	53
10.2.5	TYPICAL LADDER-BRACKET SCAFFOLD	54
10.3.5	A TYPICAL ACCESS OPENING IN A MODULAR SCAFFOLD	56
10.3.6(A)	TYPICAL MODULAR SCAFFOLDING	58
10.3.6(B)	SOME COMMON LEDGER FIXING DEVICES FOR MODULAR SCAFFOLDS	58



	<i>Page</i>
10.3.6(C) POSITIONING LEDGERS IN A MODULAR SCAFFOLD .....	59
10.3.7 TYPICAL FRAME SCAFFOLDING .....	60
10.3.8 TYPICAL TOWER-FRAME SCAFFOLDING .....	62
10.4 TYPICAL MOBILE SCAFFOLDS .....	63
10.5 TYPICAL TYPES OF TUBE-AND-COUPLER SCAFFOLD .....	65
10.7 TYPICAL CANTILEVERED SCAFFOLD .....	66
10.8 TYPICAL SINGLE-MAST-CLIMBING WORK PLATFORM .....	67
10.9(A) EXAMPLES OF HUNG SCAFFOLDS .....	69
10.9(B) TYPICAL DETAILS OF HUNG SCAFFOLDS USING CHAIN AND ROPE .....	70
11.1(A) A TYPICAL DOUBLE-ROPE SUSPENDED SCAFFOLD .....	72
11.1(B) A TYPICAL TRAVERSING SWING-STAGE SUSPENDED SCAFFOLD .....	73
11.5.1 TYPICAL SUSPENSION RIGS .....	74
11.5.6 TYPICAL COUNTERWEIGHTS FOR COUNTERWEIGHTED NEEDLES .....	77
13.8 COMMON DEFECTS IN SCAFFOLD TUBES .....	89
13.9(A) FAULTS IN TIMBER SCAFFOLD PLANKS .....	90
13.9(B) FAULTS IN METAL SCAFFOLD PLANKS .....	91
13.15 COMMON DEFECTS IN SCAFFOLDING HOIST WIRE ROPES .....	94
B1 TYPICAL COUPLERS AND ACCESSORIES .....	109
B2 TYPICAL ARTICULATED CRADLE .....	111
B3 TYPICAL INDIVIDUAL CRADLE .....	111
B4 MAIN DIMENSIONS OF A SCAFFOLD .....	112
B5 EXAMPLE OF AN INDEPENDENT SCAFFOLD .....	112
D1 COMMON BENDS AND HITCHES FOR FIBRE ROPE .....	116
F3(A) TYPICAL ARRANGEMENT OF OUTRIGGED OR PERIMETER NETS .....	125
F3(B) SITING OF OUTRIGGED NETS .....	128
F3(C) ATTACHMENT OF SAFETY NET USING A TIE CORD .....	129
I1 CANTILEVER BUILDERS' HOIST .....	133
L1 SIMPLY SUPPORTED PLANK FOR JUMP TEST .....	143
L2 CANTILEVERED PLANK FOR JUMP TEST .....	144

## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard****Guidelines for scaffolding**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard gives practical guidance for the training and certification of scaffolders, the preparation of sites for scaffolding, and the safe selection, supply, erection, alteration, dismantling, maintenance, inspection and use of scaffolding and scaffolding equipment.

**1.2 INCLUSIONS**

This Standard gives guidance for the general use of scaffolding, including:

- Portable ladders used as access to platforms.
- Portable trestle ladders supporting scaffold planks.
- Ladder bracket scaffolds.
- Temporary stairways, landings, ramps and other access ways.
- Temporary catch platforms including covered ways, safety nets and footpath hoardings (gantries) comprised of scaffolding equipment.
- Temporarily installed working platforms, including swing stages and boatswain's chairs.
- Temporary loading platforms and cantilevered crane loading bays.
- Temporary seating stands, stages, lighting towers and camera towers for concerts, sporting events, and so on, substantially comprised of scaffolding equipment.
- Mast climbing work platforms.

**1.3 EXCLUSIONS**

This Standard does not give guidance for:

- Temporarily installed guardrails.
- Portable ladders not used in connection with scaffolding.
- Permanently installed walkways, stairways, ladders, catwalks and the like.
- Building maintenance units.
- Crane boxes, scissor hoists, boom-type elevating work platforms (i.e. cherry pickers), lifts, and (men and materials) hoists.
- Falsework, shoring, back-propping and any other frame-work for the support of floors, walls, roofs and structural members of buildings, structures, ships, boats or mines.

**1.4 REFERENCED DOCUMENTS**

The documents in Appendix A are referred to in this Standard.

**1.5 DEFINITIONS**

For the purpose of this Standard and the scaffolding industry, the definitions given in Appendix B apply.

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

- ▶ Looking for additional Standards? Visit [SAI Global Infostore](#)
- ▶ Subscribe to our [Free Newsletters about Australian Standards® in Legislation; ISO, IEC, BSI and more](#)
- ▶ Do you need to [Manage Standards Collections Online?](#)
- ▶ Learn about [LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
- ▶ Do you want to [know when a Standard has changed?](#)
- ▶ Want to [become an SAI Global Standards Sales Affiliate?](#)

Learn about other SAI Global Services:

- ▶ [LOGICOM Military Parts and Supplier Database](#)
- ▶ [Metals Infobase Database of Metal Grades, Standards and Manufacturers](#)
- ▶ [Materials Infobase Database of Materials, Standards and Suppliers](#)
- ▶ [Database of European Law, CELEX and Court Decisions](#)

Need to speak with a Customer Service Representative - [Contact Us](#)