

Australian/New Zealand Standard™

**Temporary edge protection**

**Part 1: General requirements**



## **AS/NZS 4994.1:2009**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-092, Housing Construction—Working Practices. It was approved on behalf of the Council of Standards Australia on 18 May 2009 and on behalf of the Council of Standards New Zealand on 24 July 2009. This Standard was published on 22 September 2009.

---

The following are represented on Committee BD-092:

Australian Chamber of Commerce and Industry  
Australian Council of Trade Unions  
Australian Industry Group  
Construction Safety Managers and Officers Association  
Department of Consumer and Employment Protection, WorkSafe Division (WA)  
Department of Labour, New Zealand  
Housing Industry Association  
Labor Council of New South Wales  
Ladder Manufacturers Association of Australia  
Master Builders Australia  
Master Plumbers Australia  
Master Plumbers and Mechanical Services Association of Australia  
Master Roof Tilers and Slaters Association of NSW  
Metal Roofing and Cladding Association of Australia  
Queensland Master Roof Tilers Association  
Resitech  
Roofing Association of New Zealand  
Roofing Tile Association of Australia  
Site Safe New Zealand  
Victorian Roofing Tile Association  
WorkCover New South Wales  
WorkSafe Victoria

---

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

Standards are living documents which 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 Standards may also be withdrawn.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 which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at [www.saiglobal.com.au](http://www.saiglobal.com.au) or Standards New Zealand web site at [www.standards.co.nz](http://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 08164.*

---

# Australian/New Zealand Standard™

## Temporary edge protection

### Part 1: General requirements

Originated as AS/NZS 4994.1(Int):2004.  
Revised and redesignated AS/NZS 4994.1:2009.

#### **COPYRIGHT**

© Standards Australia/Standards New Zealand

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.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

## PREFACE

This Standard was prepared by Joint Standards Australia/Standards New Zealand Committee BD-092, Housing Construction—Working Practices, to supersede AS/NZS 4994.1 (Int):2004, *Temporary roof edge protection for housing and residential buildings*, Part 1: *General requirements*.

The objective of this Standard is to provide requirements and guidance for designers of equipment for roof edge protection, to prevent workers from falling from roofs or other edges of buildings under construction whilst performing any work or carrying out any inspections on roofs of all types of buildings.

This Standard is an expansion of AS/NZS 4994.1(Int):2004, *Temporary roof edge protection for housing and residential buildings*, Part 1: *General requirements*. Whilst the 2004 edition did not specifically apply to roofs of commercial and industrial buildings the Scope noted that it could be used in the absence of a similar Standard. This edition is intended to apply to temporary protection of the edges of all roofs as well as other exposed edges, prior to the installation of the permanent walling materials. It is important that the structure to which the temporary edge protection is to be attached can support the forces that may be applied when the edge protection restrains a person from falling from the edge being protected.

For the Interim Standard, the Committee considered residential roofs of various slopes and the dangers associated with working on steep slopes. At the time it decided that roofs with slopes greater than 35° represented only a small minority of roofs on housing and residential buildings. Such roofs require special work skills, equipment and techniques that remain outside the scope of this Standard. This edition adheres to the same criterion.

The dynamic testing of infill panels has been clarified compared with AS/NZS 4994.1(Int):2004.

Statements expressed in mandatory terms in notes to figures 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 .....  | 4           |
| 1.2 NEW DESIGNS AND INNOVATIONS .....  | 4           |
| 1.3 APPLICATION .....  | 4           |
| 1.4 NORMATIVE REFERENCES .....   | 5           |
| 1.5 DEFINITIONS .....  | 5           |
| 1.6 TYPES OF EDGE PROTECTION .....   | 7           |
| 1.7 PRODUCT INFORMATION .....  | 7           |
| SECTION 2 MATERIALS AND COMPONENTS   |             |
| 2.1 MATERIALS .....  | 8           |
| 2.2 SURFACE FINISH OF STEEL PRODUCTS .....   | 8           |
| 2.3 SCAFFOLDING EQUIPMENT .....  | 8           |
| 2.4 CHAINS AND ROPE .....  | 9           |
| SECTION 3 DESIGN   |             |
| 3.1 GENERAL .....  | 10          |
| 3.2 ROOF EDGE PROTECTION .....   | 10          |
| 3.3 OTHER EDGES PROTECTION .....   | 10          |
| 3.4 PRINCIPLES OF DESIGN .....   | 10          |
| 3.5 BASIS OF DESIGN .....  | 11          |
| 3.6 CONFIGURATION .....  | 11          |
| 3.7 ACCESS .....   | 16          |
| 3.8 DESIGN LOADS .....   | 18          |
| 3.9 DEFLECTION LIMITS .....  | 19          |
| 3.10 SUPPORTING STRUCTURE .....  | 19          |
| 3.11 SCAFFOLDING EQUIPMENT .....   | 19          |
| 3.12 MAINTENANCE .....   | 19          |
| SECTION 4 TESTING, MARKING AND INFORMATION   |             |
| 4.1 TESTING .....  | 20          |
| 4.2 MARKING .....  | 22          |
| 4.3 INFORMATION FROM THE SUPPLIER .....  | 22          |
| APPENDICES   |             |
| A STATIC TESTING OF A POST .....   | 23          |
| B STATIC TESTING OF TOP RAIL, MIDRAIL, INFILL PANEL, BOTTOM RAIL<br>OR TOEBOARD .....                            | 25          |
| C DYNAMIC TESTING OF A POST, A TOP RAIL SUPPORTED BY POSTS OR<br>THE TOP EDGE OF A STRUCTURAL INFILL PANEL ..... | 28          |
| D DYNAMIC TESTING OF BOTTOM RAILS, BOTTOM EDGE OF A<br>STRUCTURAL INFILL PANEL OR TOEBOARDS .....                | 31          |
| E DYNAMIC TESTING OF THE CENTRE OF A STRUCTURAL INFILL PANEL .   | 35          |
| F TEST REPORTS .....   | 38          |
| G FORMS OF EDGE PROTECTION .....   | 39          |
| BIBLIOGRAPHY .....   | 40          |

**STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND****Australian/New Zealand Standard  
Temporary edge protection****Part 1: General requirements****SECTION 1 SCOPE AND GENERAL****1.1 SCOPE**

This Standard specifies requirements for the design, manufacture and testing of equipment that is intended to provide temporary edge protection for persons working on roofs of buildings having slopes not greater than 35° to the horizontal and for other exposed edges, prior to the installation of the permanent walling materials.

**NOTES:**

- 1 This Standard does not apply to the containment of materials on residential roofs.
- 2 Edge protection is used on buildings that are being constructed, renovated, extended, altered or maintained.
- 3 Where roof slopes exceed 35 degrees, roof edge protection should be specifically designed. In some instances it may be appropriate that some other form of restraint may be required to avoid risk of excessive impact.
- 4 AS/NZS 4494.2 specifies requirements for the installation and dismantling of roof edge protection.
- 5 AS/NZS 4494.3 specifies requirements for the installation and dismantling of edge protection of other edges prior to the installation of the permanent walling materials.

**1.2 NEW DESIGNS AND INNOVATIONS**

This Standard does not prevent the use of design, materials, methods of assembly, procedures and the like that do not comply with the specific requirements of this Standard, or are not mentioned in it, but which can be shown to give equivalent or superior results. Service durability shall be a consideration in any assessment of new materials.

**1.3 APPLICATION**

Persons using this Standard are advised to familiarize themselves with the relevant specific statutory requirements regarding occupational health and safety legislation, scaffolding and working at heights.

**NOTES:**

- 1 In Australia, housing and residential buildings are considered to be of not more than three habitable storeys, based on Classes 1, 2 and 10 of the Building Code of Australia (BCA).
- 2 In New Zealand, such buildings within the definition of a housing unit are as per the New Zealand Building Code (NZBC).