

Australian/New Zealand Standard<sup>1</sup>

**Structural design actions**

**Part 1: Permanent, imposed and other actions**



## **AS/NZS 1170.1:2002**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-006, General Design Requirements and Loading on Structures. It was approved on behalf of the Council of Standards Australia on 29 March 2002 and on behalf of the Council of Standards New Zealand on 28 March 2002. This Standard was published on 4 June 2002.

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**RECONFIRMATION**  
**OF**  
**AS/NZS 1170.1—2002**  
**Structural design actions**  
**Part 1: Permanent, imposed and other actions**

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# Australian/New Zealand Standard

## Structural design actions

### Part 1: Permanent, imposed and other actions

Originated in Australia as part of AS CA1—1933.  
Originated in New Zealand as part of NZS 1900:1964.  
Previous Australian editions AS 1170.1—1989 and AS 2867—1986.  
Previous New Zealand edition NZS 4203:1992.  
AS 1170.1—1989, AS 2867—1986 and NZS 4203:1992 jointly revised, amalgamated and redesignated in part as AS/NZS 1170.1:2002.  
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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-006, General Design Requirements and Loading on Structures, to supersede, in part, AS 1170.1—1989, *Minimum design loads on structures, Part 1: Dead and live loads*, and in part NZS 4203:1992, *Code of practice for general structural design and design loadings for buildings* and, in part, AS 2867—1986, *Farm structures—General requirements for structural design*.

*This Standard incorporates Amendments No. 1 (April 2005) and Amendment No. 2 (January 2009). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure, or part thereof affected.*

This Standard is published as a joint Standard (as are also AS/NZS 1170.0 and AS/NZS 1170.2) and it is intended that it is suitable for use in New Zealand as well as in Australia. However, NZS 4203, *General structural design and design loading for buildings* remains current in New Zealand until the publication of all parts (including Part 4: Earthquake action) and for a transition period afterwards.

This Standard will be referenced in the Building Code of Australia by way of BCA Amendment 11 to be Published on 1 July 2002, thereby superseding the previous edition, AS 1170.1—1989, which will be withdrawn 12 months from the date of publication of this Edition.

The objective of this Standard is to provide designers of structures with values representing the permanent actions, likely actions imposed due to use and occupancy, and other actions appropriate to the type of structure for use in structural design.

This Standard is Part 1 of the 1170 series *Structural design actions*, which comprises the following parts, each of which has an accompanying Commentary published as a Supplement:

### AS/NZS

- 1170.0 Part 0: General principles
- 1170.1 Part 1: Permanent, imposed and other actions
- 1170.2 Part 2: Wind actions
- 1170.3 Part 3: Snow and ice actions

### AS

- 1170.4 Part 4: Earthquake loads

### NZS

- 1170.5 Part 5: Earthquake actions – New Zealand

The Commentary to this Standard is AS/NZS 1170.1 Supp 1, *Structural design actions—Permanent, imposed and other actions—Commentary (Supplement to AS/NZS 1170.1)*.

This Standard is not equivalent to ISO 9194:1987, *Bases for design of structures—Actions due to the self-weight of structures, non-structural elements and stored materials—Density*. However, it does conform to that Standard (which states ‘Each country in its relevant standards should use its traditional values which are in the indicated range’). Extracts from the data given in ISO 9194 are provided in the Commentary to this Standard.

This Standard is not equivalent to ISO 2103:1986, *Loads due to use and occupancy in residential and public buildings* or to ISO 2633:1974, *Determination of imposed floor loads in production buildings and warehouses*. The philosophy of imposed actions in this Standard is based on ISO 2103 and ISO 2633. ISO 2103 states that the values it gives are the lowest values given in the National Standards that were considered. It is not used in Europe or North America. This Standard gives values that are either equivalent to or greater than those in ISO 2103. This Standard does conform to ISO 2633 for all values except for the distributed load for parking, which is given as 3.0 kPa in ISO 2633. This higher value is not used in Europe or North America.

This edition incorporates the following principal changes from the previous edition:

- (a) Dead and live loads for Australia and New Zealand have been included.
- (b) Load combinations and other general reliability clauses have been removed to the new Standard AS/NZS 1170.0, *General principles*.
- (c) The information on movement effects has been included in AS/NZS 1170.0 Supp 1, *Commentary on General principles*.
- (d) Permanent and imposed loads from AS 2867, *Farm structures—General requirements for structural design*, have been included.
- (e) The provision for occasional loading of 4.5 kN for roof trusses or roof structures in industrial or commercial buildings has been deleted.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

Statements expressed in mandatory terms in notes or tables are deemed to be an integral part of this Standard.

Notes to the text contain information and guidance and are not considered to be an integral part of the Standard.

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## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard**  
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## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

A2

This Standard specifies permanent, imposed, static liquid pressure, ground water, rainwater ponding and earth pressure actions to be used in the limit state design of structures and parts of structures.

**1.2 APPLICATION**

This Standard shall be read in conjunction with AS/NZS 1170.0.

This Standard may be used as a means for demonstrating compliance with the Requirements of Part B1 of the Building Code of Australia.

**1.3 DETERMINATION OF DESIGN ACTIONS**

For the actions covered by this Standard, values for use in design shall be appropriate for the type of structure or structural element, its intended use and exposure to such actions.

The determination of values in accordance with Sections 2 to 4 shall be deemed to satisfy this Clause.

**1.4 REFERENCED DOCUMENTS**

The following documents are referred to in this Standard:

## AS

- |        |  |
|--------|--|
| 1418   | Cranes, hoists and winches (all parts)   |
| 1657   | Fixed platforms, walkways, stairways and ladders—Design, construction and installation |
| 1720   | Timber structures  |
| 1720.2 | Part 2: Timber properties  |
| 1735   | Lifts, escalators and moving walks (all parts)   |
| 2156   | Walking tracks   |
| 2156.1 | Part 1: Classification and signage   |

## AS/NZS

- |        |                            |
|--------|----------------------------|
| 1170   | Structural design actions  |
| 1170.0 | Part 0: General principles |
| 1170.2 | Part 2: Wind actions       |

## NZS

- |      |  |
|------|--|
| 4332 | Non-domestic passenger lifts and goods lifts |
|------|--|