

Australian Standard™

**Residential slabs and footings—  
Construction**

Building Code of Australia  
Primary referenced Standard



This Australian Standard was prepared by Committee BD-025, Residential Slabs and Footings. It was approved on behalf of the Council of Standards Australia on 12 April 1996 and published on 5 June 1996.

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The following are represented on Committee BD-025:

The Association of Consulting Engineers, Australia  
Australian Building Codes Board  
Australian Chamber of Commerce and Industry  
Australian Geomechanics Society  
Australian Institute of Building Surveyors  
Building Management Authority of W.A.  
Cement and Concrete Association of Australia  
Clay Brick and Paver Institute  
Concrete Masonry Association of Australia  
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Foundation and Footings Society, Vic.  
Housing Industry Association  
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Residential Foundations and Footings Panel  
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Australian Standard™

## Residential slabs and footings— Construction

Originated as AS 2870—1986.  
Previous editions AS 2870.1—1988 and AS 2870.2—1990.  
Revised, amalgamated and redesignated AS 2870—1996.  
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## PREFACE

This Standard was prepared by the Standards Australia Committee BD/25 on Residential Slabs and Footings to supersede AS 2870.1—1988 and AS 2870.2—1990.

*This Standard incorporates Amendments No. 1 (November 1997), No. 2 (June 1999), No. 3 (November 2002) and No. 4 (May 2003). 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.*

The purpose of this Standard is to establish performance requirements and specific designs for footing systems for foundation conditions commonly found in Australia and to provide guidance on the design of footing systems by engineering principles. Although a wide range of conditions is covered, this Standard places particular emphasis on the design for reactive clay sites susceptible to significant ground movement due to moisture changes. The Standard takes account of the following:

- (a) Swelling and shrinkage movements of reactive clay soils due to moisture changes.
- (b) Settlement of compressible soils or fill.
- (c) Distribution to the foundation of the applied loads.
- (d) Tolerance of the superstructure to movement.

The Notes to the Figures in Section 3 form part of the mandatory provisions of this Standard. The Figures are intended to show only the structural proportions of the footing system. All other details are purely illustrative.

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.

The purpose of Amendment No. 3 to AS 2870—1996 is to bring the Standard into line with the nomenclature now in use in Australia for the specification of reinforcing mesh and bars.

AS/NZS 4671 *Steel reinforcing materials* was published in April 2001. It describes the proportion of reinforcing mesh and bars now distributed in Australia. AS/NZS 4671 adopts nomenclature, which is different from that used in previous editions of AS 2870. AS/NZS 4671 has specific relevance to grade 500L mesh and 500N bars, materials which are currently the subject of ongoing research, particularly with regard to the issue of ductility.

Standards Australia Committee BD-025 is evaluating the results of this research. The committee may find it appropriate to issue further amendments to this Standard should issues of ductility be found to impact on the performance levels of footings designed in accordance with the Standard.

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## STANDARDS AUSTRALIA

### Australian Standard Residential slabs and footings—Construction

#### SECTION 1 SCOPE AND GENERAL

##### 1.1 SCOPE

This Standard sets out the requirements for the classification of a site and the design and construction of a footing system for a single dwelling house, townhouse or the like which may be detached or separated by a party wall or common wall, but not situated vertically above or below another dwelling. Such houses include buildings classified as Class 1 and 10a under the Building Code of Australia.

The Standard may also apply to other forms of construction including some light industrial, commercial and institutional buildings if they are similar to houses in size, loading and superstructure flexibility. The footing systems for which designs are given include slab-on-ground, stiffened rafts, waffle rafts, strip footings, pad footings and piled footings. This Standard gives no advice on detailing of the connection of superstructures to the footing systems for wind loads or earthquake loads.

This Standard shall not be interpreted so as to prevent the use of materials or methods of design not referred to herein. Specifically, this Standard shall not be used to prevent the use of locally proven designs, or alternative designs in accordance with engineering principles.

NOTE: This Standard does not include design details for Class P sites. Some advisory material is included in the commentary.

##### 1.2 APPLICATION

The Standard requires that all sites shall be classified in accordance with Section 2 and that footing system designs shall be prepared either by prescribing a standard design in accordance with Section 3, or by the engineering principles described in Section 4. In either case, all construction shall comply with Sections 5 and 6.

Residential footing system design and construction shall comply with AS 3600 except that, where in conflict, this Standard shall take precedence.

NOTE: The functions of the various parties involved in the design and construction of residential slabs and footings are normally as described in Appendix A.

##### 1.3 PERFORMANCE OF FOOTING SYSTEMS

###### 1.3.1 General

The footing systems complying with this Standard are intended to achieve acceptable probabilities of serviceability and safety of the building during its design life. Building supported by footing systems designed and constructed in accordance with this Standard on a normal site (see Clause 1.3.2) which is—

- (a) not subject to abnormal moisture conditions; and
- (b) maintained such that the original site classification remains valid and abnormal moisture conditions do not develop (see Note 1);



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