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AS 3600:2018 (Incorporating Amendment Nos 1 and 2)



## **Concrete structures**



This Australian Standard® was prepared by Committee BD-002, Concrete Structures. It was approved on behalf of the Council of Standards Australia on 22 June 2018. This Standard was published on 29 June 2018.

The following are represented on Committee BD-002:

- Australian Building Codes Board
- Bureau of Steel Manufacturers of Australia
- Cement Concrete and Aggregates Australia—Cement
- Cement Concrete and Aggregates Australia-Concrete
- Concrete Institute of Australia
- Consult Australia
- Engineers Australia
- La Trobe University
- Master Builders Australia
- National Precast Concrete Association Australia
- Steel Reinforcement Institute of Australia
- University of Melbourne
- University of New South Wales
- University of Sydney

This Standard was issued in draft form for comment as DR AS 3600:2018.

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.

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### PREFACE

This Standard was prepared by Standards Australia Committee BD-002, Concrete Structures, to supersede AS 3600-2009.

This Standard incorporates Amendment No. 1 (November 2018) and Amendment No. 2 (May 2021). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The principal objective of this Standard is to provide users with nationally acceptable unified rules for the design and detailing of concrete structures and members, with or without steel reinforcement or prestressing tendons, based on the principles of structural engineering mechanics. The secondary objective is to provide performance criteria against which the finished structure can be assessed for conformance with the relevant design requirements.

The following list indicates the major differences between this edition and the 2009 edition of AS 3600:

- (a) Addition of the following new sections:
  - (i) Section 14 Design for Earthquakes Actions (formerly Appendix C).
  - (ii) Section 15 Diaphragms.
  - (iii) Section 16 Steel Fibre Reinforced Concrete.
  - (iv) Section 18 Design for Fatigue.
  - (v) Appendix C Residual Tensile Strength Test for SFRC.
- (b) Revision of the following requirements:
  - (i) Phi factors.
  - (ii) Maximum steel strength.
  - (iii) Shear in deep slabs.
  - (iv) Fire design, including—
    - (A) axis distances for fire design;
    - (B) continuous top reinforcement; and
    - (C) minimum slab thickness.
  - (v) Modification of models and calculations of—
    - (A) shrinkage;
    - (B) creep;
    - (C) deflections; and
    - (D) development lengths for higher strength steels.
  - (vi) Steel shrinkage in areas modelled by strut and tie.
  - (vii) Punching shear.
  - (viii) Ductility for pre-cast concrete connections.
  - (ix) Heating and re-bending bars.
  - (x) Crack control.

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

The terms 'normative' and 'informative' are used in Standards to define the application of the appendices to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.



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