

## Relevant Concrete Construction Standards

### Relevant Concrete Construction Standards for concrete structures - Commercial, Civil, Industrial

AS/NZS 4671 : 2001 Steel reinforcing materials  
AS 3600 : 2009 Concrete structures  
AS 5100.5 : 2004 Bridge design: Concrete  
AS/NZS 1170 : 2002 Structural design actions  
AS 2327.1 : 2003 Composite structures, Part: 1 Simply supported beams  
AS 1554.3 : 2008 Part 3: Welding of reinforcing steels  
AS 1100-Part 501 : 2002 - Technical drawing - Structural engineering drawing

### Relevant Concrete Construction Standards for Housing Slabs, Concrete Pavements, Swimming Pools, Driveways, Patios, House Extensions, Footpaths etc

AS/NZS 4671 : 2001 Steel reinforcing materials  
AS 3727 : 1993 Guide to residential pavements  
AS 2870 : 2011 Residential slabs and footings - Construction  
AS 2783 : 2011 Use of reinforced concrete for small swimming pools

# Steel Reinforcement Standards & Relevant Concrete Construction Standards

## Does reinforcing bar and mesh comply with Australian Standards?

- Are commercial buildings, bridges, and civil structures, house slabs, patios, extensions, driveways and footpaths built with the correct steel reinforcement?
  - Not all reo and mesh meets Australian Standards. Materials are sourced widely in Australia and from overseas, and manufactured to all kinds of Standards, even no Standards, so you need to check what you are getting.
  - Many people do not consider the effects of non-compliant materials. Projects may have problems e.g. cracking in walls and floors and visible damage.
- Australian Standards require steel reinforcement to have the necessary properties, strength and level of ductility appropriate to the engineering design assumptions on which they are based.
  - Ask your builder and concreter about compliance with the Building Code of Australia (BCA) which references Australian Standards. ACRS certified steel reinforcing materials meet these requirements

## **Relevant Concrete Construction Standards for concrete structures - Commercial, Civil, Industrial**

### **AS/NZS 4671 : 2001 Steel reinforcing materials**

- Specification of Steel bars, wire and mesh for use in reinforced concrete structures that have been designed in accordance with AS 3600 : 2001 or AS 3600 : 2009
- 250 & 500 MPa, Class N & L reinforcing bar and mesh.

### **AS 3600 : 2009 Concrete structures**

- Design and detailing of concrete structures and elements, with or without steel reinforcement or prestressing tendons, based on the principles of structural engineering mechanics
- Previous version referenced in BCA published in 2001, i.e. AS 3600 : 2001

- References AS/NZS 4671
- Amendment 2, 2004 provided modified rules for the design of Class L steel in floors
- AS 3600 : 2009 published December 2009

### **AS 5100.5 : 2004 Bridge design: Concrete**

- Minimum requirements for the design and construction of concrete bridges and associated structures including members that contain reinforcing steel and tendons, or both
- Although AS 5100 closely follows the design rules of AS 3600 there are some differences in regard to the detailing of reinforcing steel in concrete elements.

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## **AS/NZS 1170 : 2002 Structural design actions**

### **Part 1: Permanent, imposed and other actions (Loading code)**

- 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
- Ref AS/NZS 1170 - Loading Standards
- Amendments 1 & 4 - April 2005

## **AS 2327.1 : 2003 - Composite structures**

### **Part 1: Simply supported beams**

- Sets out minimum requirements for the design, detailing and construction of simply supported composite beams composed of a steel beam and a concrete slab interconnected with shear connectors, including applications where the slab incorporates profiled steel sheeting

- The main changes are related to the design of shear connectors, stud location, distinction between open and closed rib profiles, 500 MPa longitudinal shear reinforcement and some new reference material.

## **AS 1554.3 : 2008 Part 3: Welding of reinforcing steels**

- The welding of reinforcing steel used in concrete structures that are designed and constructed in accordance with AS 3600
- Reference: AS/NZS 4671

## **AS 1100-Part 501 : 2002 - Technical drawing - Structural engineering drawing**

- This Standard references AS/NZS 4671 : 2001 and thus covers the use of 500 MPa reinforcing bar and mesh.

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### **AS/NZS 4671 : 2001 Steel reinforcing materials**

- Specification of steel bars, wire and mesh for use in reinforced concrete structures that have been designed in accordance with AS 3600 : 2001 or AS 3600 : 2009
- 250 & 500 MPa. Class N & L reinforcing bar and mesh
- Supersedes AS 1302, 1303 & 1304. Amendment - 1 June 2003

### **AS 3727 : 1993 Guide to residential pavements**

- Guidelines for the selection and construction of pavements associated with residential buildings consisting of single houses or multiple dwellings in medium density housing development
- Recommends mesh sizes for concrete slabs, depending on the service requirements
- Loading categories - foot traffic, light and medium vehicles, as well as joint spacing

### **AS 2870 : 2011 Residential slabs and footings - Construction**

- This standard covers slab on ground for housing
- 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
- Previous version referenced in BCA published in 2001, i.e. AS 2870 : 1996

### **AS 2783 : 1992 Use of reinforced concrete for small swimming pools**

- Structural design and construction of reinforced concrete pools
- References AS 3600 & AS 3735 - Concrete structures for retaining liquids