Australian Government

CPCCBC4010 Apply structural principles to residential and commercial constructions

Release: 3

CPCCBC4010 Apply structural principles to residential and commercial constructions

Modification History

Release 3 Updated reference to general construction induction training program.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to mapping.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes but is not equivalent to CPCCBC4010B Apply structural principles to residential low rise constructions.

Combines CPCCBC4010B Apply structural principles to residential low rise constructions and CPCCBC4011B Apply structural principles to commercial low rise constructions.

Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply structural principles to the construction of residential or commercial structures. This unit includes applying structural principles to footing, floor, wall and roof systems.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

This unit of competency applies to builders, site managers, forepersons and other managers in the building and construction industry who apply structural principles to the demolition or construction of structures.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems relating to building application approvals.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

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Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

CPCCBC4053	Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings
CPCCBC4001	Apply building codes and standards to the construction process for Class 1 and 10 buildings

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Analyse the structural integrity of building project.	1.1 Determine the class of building, intended use of building and climate zone from the NCC.
	1.2 Analyse project for compliance with NCC bushfire, high wind, earthquake and alpine environment requirements.
	1.3 Analyse building design and structural integrity from project plans and specifications, building standards and codes.
	1.4 Determine the effect of section properties on various materials.
	1.5 Determine if structural performance meets the General Requirements and Performance Requirements of NCC.
	1.6 Confirm analysis with relevant industry professionals.
	1.7 Conduct pre-commencement site inspection to confirm analysis.
	1.8 Assess new and emerging building technologies for application to the construction process and their compliance with NCC requirements and relevant Australian Standards.

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2	Plan, coordinate and manage the laying of footings.	2.1	Identify earthworks and footing or slab configuration from project plans and specifications.
		2.2	Establish cut and fill, excavation and compaction compliance with geotechnical report.
		2.3	Assess performance of reinforcement, concrete and other elements which contribute to structural integrity of specified footings.
		2.4	Determine compliance with building and construction regulations, standards and codes.
		2.5	Set out footings in accordance with project plans and specifications.
3	Plan, coordinate and manage laying of flooring systems.	3.1	Identify flooring systems materials, components and configuration from project plans and specifications.
		3.2	Establish footing type and tie-down details.
		3.3	Assess suspended flooring system component sections' compliance with standards and codes' span requirements.
		3.4	Determine if floor framing and flooring is compliant with NCC Performance Requirements for climate zone, fire resistance and rising damp requirements.
		3.5	Supervise and check laying of specified floor system complies with project documentation.
4	Plan, coordinate and manage the building of wall systems.	4.1	Identify and analyse structural and non-structural wall systems used in the planning of the building and construction project.
		4.2	Determine materials used for timber and steel framing and structural steel members meet the Performance Requirements of the NCC and timber framing complies with *AS 1684 Residential timber-framed construction.*
		4.3	Identify, implement and check processes for erecting structural and non-structural wall systems comply with manufacturer's specifications and building and

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		construction standards and codes.
	4.4	Plan, implement and check requirements for application of bracing, tie-downs, tolerances, allowances, and fixing and installation of wall frame components for compliance with relevant Australian Standards, codes and manufacturer specifications.
	4.5	Manage processes to ensure quality of the frame, whether factory pre-cut and pre-nailed, factory pre-cut and assembled on site, or cut and assembled on site.
	4.6	Identify and implement allowances for services to be installed.
	4.7	Check compliance of installation of windows and doors with building and construction standards and code and manufacturer's specifications.
5 Plan, coordinate and manage the building of structural roof systems.	5.1	Identify type of structural roof system and components and determine compliance with Performance Requirements of NCC.
	5.2	Plan, implement and check erection of structural roof, roof trusses or hand cut roof members comply with building and construction standards and codes and accepted industry construction practices.
	5.3	Plan, implement and check installation of roof sarking and cladding, skylights, roof ventilators and service penetrations comply with building standards, codes and manufacturer specifications.
	5.4	Manage processes to ensure roof systems' quality finish.
6 Plan, coordinate and manage wall cladding.	6.1	Assess structural performance of cladding to be used for bracing in the frame construction for compliance with building and construction standards, codes and manufacturer specifications.
	6.2	Determine cladding, vapour permeable sarking or waterproof membrane and components meet the Performance Requirements of NCC.
	6.3	Supervise and check installation of specified cladding complies with building and construction standards, codes

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and industry-accepted industry practices.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBC4010B Apply structural principles to residential low rise constructions.

Supersedes and is not equivalent to CPCCBC4011B Apply structural principles to commercial low rise constructions.

Links

Companion volumes to this training package are available at the VETNet website - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad

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