Australian Government

CPPBDN4005 Review and report structural integrity of building designs

Release: 1

CPPBDN4005 Review and report structural integrity of building designs

Modification History

Release 1. New unit.

This version first released with CPP Property Services Training Package Version 1.

Application

This unit of competency specifies the outcomes required to understand and apply principles of structural engineering to analyses of building designs for residential, commercial and industrial buildings as defined in the Building Code of Australia (BCA), including additions and renovations.

The unit supports the work of drafters who assist and work under the supervision and instruction of architects and building designers in preparing design drawings for client, planning and construction approval. The drafter is not responsible for the structural integrity of the building, but contributes to assessing building compliance with specific requirements relating to structural integrity, as specified in relevant codes and standards. The drafter requires the skills and knowledge to recognise and bring to the attention of the designer structural anomalies in the building design drawings.

Licensing, legislative, regulatory or certification requirements apply to building design drafting in some states. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil

Competency Field

Drafting

Unit Sector

Building design

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1.	Review project documentation to identify structural systems.	1.1.	Site conditions and nature of proposed footings are identified from project documentation and noted in project file.
		1.2.	Nature and format of floor systems are identified from project documentation and noted.
		1.3.	Nature and format of walls and wall sheeting and cladding systems are identified from project documentation and noted.
		1.4.	Nature and format of roofs and roof cladding systems are identified from project documentation and noted.
2.	Evaluate effects of loads and forces.	2.1.	***Geophysical and climatic conditions*** at different locations are researched.
		2.2.	***Types of loads*** acting on project buildings are identified and noted.
		2.3.	***Stresses and strains*** acting on project buildings are identified and noted.
		2.4.	Properties of project ***structural building materials*** and responses to loads and forces are researched and noted.
3.	Review structural integrity of building designs.	3.1.	Structural integrity of proposed footings is reviewed, under supervision, for compliance with structural engineer's notes and relevant ***codes and standards.***
		3.2.	Proposed floor system components are reviewed for structural integrity and compliance with structural engineer's notes and relevant codes and standards.
		3.3.	Structural integrity of proposed walls and wall sheeting and cladding systems are reviewed for compliance with structural engineer's notes and relevant codes and standards.
		3.4.	Structural integrity of proposed roofs and roof cladding system components are reviewed for compliance with structural engineer's notes and relevant codes and standards.
		3.5.	Anomalies in structural integrity and compliance are noted according to workplace procedures.
4.	Report findings and amend	4.1.	Review of structural integrity of project building is reported to, and discussed with, designer and consultant

drawings.	engineer according to workplace procedures, and information from discussion is noted.
	4.2. Drawings are amended and notated according to instructions of designer as required.

Foundation Skills

This section describes core skills that are essential to performance and not explicit in the performance criteria. Employment skills essential to performance are explicit in the performance criteria of this unit of competency.

Skill	Performance feature

Learning skills to:	• access a range of resources, information and support to assist in developing understanding of:
	  • compliance requirements relating to structural integrity of buildings, including BCA requirements
	  • structural systems, loads and forces
	  • standards and conventions for different types of technical drawings
	• draw on experience of drawing analysis and apply to new work.

Numeracy skills to:	• interpret and apply ratios for loads and resistance from AS1684 Residential Timber Framed Construction • use mathematical language to discuss findings from analysis of plans and drawings with colleagues.
Oral communication skills to:	• participate in discussions in the workplace and with external specialists using specialised vocabulary relating to building designs.
Reading skills to:	• understand specialised technical vocabulary, abbreviations and acronyms specific to building design work • use different reading approaches to locate specific details in complex compliance documentation, including the BCA.
Writing skills to:	• make concise and accurate technical notes of findings and discussions with colleagues or external specialists • use specialised technical vocabulary, abbreviations and acronyms relating to building design projects in personal notes on review of structural integrity.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Geophysical and climatic conditions must include:	• bushfires • earthquakes • extreme temperatures • flooding • marine and industrial atmosphere • noise • snow • steep land • soil classification • wind (cyclones).
Types of loads must include:	• environmental loads, including wind events (cyclones) • live, dead and combination loads • moving loads, including volume of users • permanent loads, including weight of building.
Stresses and strains must include:	• bearing • bending or deflection and long-term creep • compression • racking • shearing • tensile • torsion • yield.
Structural building materials must include:	• concrete • glass • masonry • metal • plastics • wood • other materials in common use.
Codes and standards must include:	• BCA and referenced Australian standards for structural provisions • AS1684 Residential Timber Framed Construction.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b