



Australian Government

CPPBDN5105 Evaluate construction materials and methods for Class 2-9 buildings up to two storeys

Release: 1

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Modification History

Release 1 This version first released with CPP Property Services Training Package Release 11.0.

Supersedes and is not equivalent to:

- CPPBDN5001A Research construction materials and methods for small-scale residential building design projects.
- CPPBDN5002A Research construction materials and methods for small-scale non-residential building design projects.

Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to evaluate traditional, contemporary and emerging construction materials and methods for the design of Class 2-9 buildings to a maximum floor area of 2000m², except construction Type A buildings. It includes researching the application, performance and interaction of available construction materials and methods.

Building classifications and construction types are set out in the National Construction Code (NCC).

This unit is suitable for drafters and building designers who apply technical and theoretical knowledge and skills to building design work tasks.

This unit forms part of the licensing requirements for people engaged in building design in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

Nil.

Unit Sector

Building Design

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Evaluate site preparation, foundations and footings. | 1.1 Read and interpret site classification reports to confirm foundation material and wind classification and identify implications for structural design. |
| | 1.2 Investigate impact of earthworks and vegetation on adjoining land and existing structures. |
| | 1.3 Investigate drainage provisions required to manage surface water and subsoil drainage, during and post construction works. |
| | 1.4 Research and select termite risk management to suit regional characteristics. |
| | 1.5 Determine articulation and shrinkage control measures for footing and slab construction. |
| | 1.6 Analyse, sketch and annotate commonly used structural footing and floor systems, including on-grade and suspended. |
| 2 Evaluate and report on construction methods and materials for framing, cladding and lining. | 2.1 Analyse, sketch and annotate commonly used structural wall and roof framing systems, including portal frames, bracing and tie-down. |
| | 2.2 Analyse, sketch and annotate commonly used systems for structural concrete, including pre-cast and cast-in situ walls, floors and roofs. |
| | 2.3 Analyse, sketch and annotate commonly used façade and glazing systems. |
| | 2.4 Analyse, sketch and annotate commonly used roof cladding and drainage systems, including flashings. |
| | 2.5 Investigate new and emerging construction materials, methods and systems. |
| | 2.6 Select appropriate thermal and acoustic insulation systems for building envelope and occupancy separation for different usage classifications. |
| | 2.7 Research, analyse and sketch commonly used lining systems. |
| | 2.8 Analyse integration of construction materials and methods. |

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| | 2.9 | Analyse structural implications for provision of services. |
| 3 Evaluate and report on the impact of compliance requirements on structural elements. | 3.1 | Research, analyse and report on fire resistant construction requirements relevant to scope of works, nature and use of building. |
| | 3.2 | Research, analyse and report on NCC requirements for access and egress relevant to scope of works, nature and use of building. |
| | 3.3 | Research, analyse and report on NCC requirements for health and amenity relevant to scope of works, nature and use of building. |
| | 3.4 | Research, analyse and report on NCC requirements for energy efficiency relevant to scope of works, nature and use of building. |
| 4 Evaluate and report on internal fit-out of building. | 4.1 | Research, analyse and sketch typical joinery components for commercial cabinetry and decorative finishes. |
| | 4.2 | Determine structural, environmental and services implications of placement and selection of internal fixtures, fittings and finishes. |
| 5 Evaluate and report on services for building. | 5.1 | Research installation methods for different types of services, components, and systems relevant to scope of works, nature and use of building. |
| | 5.2 | Research and report on NCC requirements for services and equipment relevant to scope of works, nature and use of building. |
| | 5.3 | Research and report on environmental impact and sustainability of systems and components for services relevant to scope of works, nature and use of building. |

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:

- CPPBDN5001A Research construction materials and methods for small-scale residential building design projects.
- CPPBDN5002A Research construction materials and methods for small-scale non-residential building design projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPBDN5105 Evaluate construction materials and methods for Class 2-9 buildings up to two storeys

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Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by evaluating and reporting on suitable construction materials, methods and services for two different building designs involving Class 2-9 buildings as defined in the National Construction Code (NCC). Of the two building designs:

- each must be of a different NCC classification
- one must be a Class 2 or 3 building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant workplace, industry, work health and safety (WHS), legislative, regulatory and certification requirements
- NCC building classifications and constructions types
- correct terminology to define building construction and methodology
- application, behaviour, characteristics, performance and interactions of construction materials and methods
- construction methods and their strengths and weaknesses for different geographical locations and climatic conditions
- common hazards and risks of construction materials and methods
- basic principles of structural engineering
- sources of reliable information on traditional, contemporary and emerging uses of construction materials and methods
- applicable characteristics of traditional, contemporary and emerging materials:

- acoustic properties
- aesthetic properties
- availability
- cost-effectiveness
- defects
- durability
- fire resistance
- interaction with other materials
- limitations due to manufacturing process
- structural safety
- sustainability features, such as energy efficiency, thermal properties and lifecycle
- tolerances
- transport, storage and handling requirements
- site preparation requirements:
 - shoring
 - underpinning
 - de-watering
 - ground stabilisation
 - retaining structures
- sequencing of construction works
- services:
 - sewer
 - stormwater
 - domestic water supply
 - electrical and data
 - fire protection systems
 - heating, ventilation and air conditioning
 - lifts
 - artificial lighting.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations. Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed. This includes access to:

- computer with internet access and word processing software
- relevant regulations, codes and standards
- technical references with current information on construction materials and methods
- drafting equipment for computer or hand detail sketching.

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