



Australian Government

Department of Education, Employment and Workplace Relations

CPCCSV6001A Assess the construction of buildings up to three storeys

Release: 1

CPCCSV6001A Assess the construction of buildings up to three storeys

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit of competency specifies the outcomes required to assess the construction of buildings of up to three storeys and a maximum floor area of 2000 square metres.

It includes evaluation and identification of appropriate construction methods and the identification of required standards and services according to relevant legislation, design and maintenance specifications.

Application of the Unit

Application of the unit This unit of competency supports the attainment of the understanding and skills to assess the construction of buildings up to three storeys within the context of relevant legislation, the Building Code of Australia (BCA) and Australian standards.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units Nil

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare comprehensive checklist schedule to investigate, plan and set up sites.	1.1. Relevant factors for project scheduling, investigation, planning and site establishment for buildings are analysed and determined. 1.2. Capabilities of builder's plant and equipment for single and multi-building projects are identified and documented in compliance with construction principles for buildings. 1.3. Authorities' requirements and procedures to connect temporary services are identified and documented. 1.4. OHS requirements for site amenities/services and emergency safety procedures are established and documented. 1.5. Effects of the Disability Discrimination Act (DDA) regarding access for people with a disability are researched and documented.
2. Research and comply with relevant state or territory legislation and local government requirements.	2.1. Effects of relevant state or territory building and planning legislation and local government planning and building requirements are investigated, interpreted and communicated to others throughout design and construction of the specified building project. 2.2. Planning and construction effects of the BCA and the construction requirements of the various relevant Australian standards are researched and documented. 2.3. Effects of state or territory, local government and service supply authorities' regulations on design and construction are researched and documented. 2.4. Environmental issues and controls relating to the construction site are evaluated and recorded.
3. Investigate and evaluate building site establishment.	3.1. Available site services and records of the salient features of a building site are appraised and recorded. 3.2. Soil engineer assessment of foundations, test bore results and sketches of footing systems used, suited to various foundation designs, selection and behaviour in wet, dry and earthquake conditions, are interpreted. 3.3. Types, principles and construction practices of shoring, underpinning, rock anchors used in rock and soil foundations, de-watering, ground stabilisation, footing systems, basements, tanking and retaining wall construction are identified, documented and

ELEMENT	PERFORMANCE CRITERIA
	sketched.
	3.4.Principles and practices of site establishment and different types and uses of builders' plant and equipment are identified and evaluated.
	3.5.Demolition procedures, standards and safety requirements for site preparation, including marking locations of services, providing se access and general site clearing, are identified and evaluated as appropriate.
4. Determine stages and sequencing practices for structural systems.	4.1.Stages and sequencing appropriate to the different forms of project construction are identified and described, including <i>characteristics, uses, maintenance and selection of materials.</i> 4.2.Structural systems commonly used in different forms of project construction are identified and described. 4.3.Types, principles and relevant regulations, including BCA, construction standards and practices are identified in accordance with relevant design and construction of structural systems. 4.4.Sub-structure of different forms of project construction from the foundation up to ground level are detailed and documented. 4.5.Options available for fenestration design, based on bracing design, are investigated and described. 4.6.Tilt-up construction process, application, standards and practices are identified and described in accordance with relevant design and construction of structural systems. 4.7.Drawings of service core layouts are prepared in accordance with relevant design and construction of structural systems. 4.8.Purposes for dimensional coordination and its benefits to the planning and construction of buildings are evaluated. 4.9.Shop drawings used for the manufacturing of various, most commonly used structural systems are reviewed.
5. Determine requirements for scaffolding systems.	5.1.Various scaffolding systems are identified and selected in accordance with relevant legislation and Australian standards.
6. Select suitable methods for rubbish	6.1.Rubbish removal methods suitable for a specified medium/high rise building in accordance with

ELEMENT	PERFORMANCE CRITERIA
removal from building sites.	relevant legislation and Australian standards are identified and selected.
7. Select suitable cranes and other modes of material handling.	7.1. Correct and safe methods of material handling systems are identified and selected in accordance with relevant legislation and Australian standards.
8. Identify and apply earthquake resistant construction to building.	8.1. Major building elements designed to resist earthquakes are defined. 8.2. Major structural concepts used to resist earthquakes are identified. 8.3. Applications are sketched of structural and cladding details to resist earthquakes using appropriate drawing protocol. 8.4. Factors effecting material selection and installation are nominated.
9. Evaluate construction standards and practices.	9.1. Types, construction standards and practices for the installation/application used for claddings, linings, finishes and coatings are identified and evaluated. 9.2. Detail drawings of the various types of cladding systems and their fixings are prepared in accordance with relevant design specifications. 9.3. Suitability of various partition systems for use in office landscaping and layouts are evaluated and deemed appropriate to the function of the office. 9.4. Preparation of drawings of typical office layouts and selection criteria with specific emphasis on materials choice and functional office design are investigated and deemed appropriate. 9.5. Types, principles, construction standards and practices of window, door and joinery fabrication and installation are identified and evaluated in accordance with relevant design and construction of structural systems. 9.6. Basic principles and integration of building services into the building are identified and evaluated in accordance with standard practices and service supply authority legislation. 9.7. Structural principles and the use of these principles are identified. 9.8. Types, standards and practices for the installation of the services are identified and described in accordance with different forms of project construction.

ELEMENT	PERFORMANCE CRITERIA
10. Plan for continuing maintenance on a construction project.	10.1. Design principles required for consideration to accommodate and facilitate ongoing maintenance are identified and documented. 10.2. Key services areas of a building project requiring ongoing maintenance are nominated and described. 10.3. Approaches for entering into maintenance agreements for the provision of subsequent services are identified and documented. 10.4. Responsibilities of the various parties involved in a building project during the construction, defects liability and service life periods are identified and documented.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- ability to recognise procedures, follow instructions, respond to change and contribute to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems
- communication skills to:
 - communicate legislation and local government requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - read and interpret:
 - BCA
 - plans, specifications and drawings
 - other relevant documentation
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication
 - written skills to:
 - document and record issues regarding site establishment, requirements, construction methods and maintenance
 - prepare checklist schedule

REQUIRED SKILLS AND KNOWLEDGE

- evaluate own actions to make judgements about performance and necessary improvements
- numeracy skills to analyse and apply complex mathematical information
- organisational and time management skills to arrange and conduct meetings to timelines
- planning and organisational skills to collect, organise and analyse information
- teamwork skills to work effectively with others.

Required knowledge

Required knowledge for this unit is:

- access requirements for people with a disability and the requirements of the DDA with regard to access
- authorities and powers of a building surveyor
- design and construction principles of buildings
- nature of materials and effect on performance
- processes for the administration and preparation of documentation
- processes for the interpretation of reports, working drawings and specifications
- relevant federal, state or territory legislation and local government policy and procedures
- research methods.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to:

- comply with OHS regulations applicable to workplace operations
- apply organisational management policies and procedures, including quality assurance requirements where appropriate
- apply the principles of construction, standards and services, design and maintenance specifications, correct terminology; and the associated reporting of data, findings, recommendations and strategies for at least one commercial, industrial or residential building project or equivalent in compliance with relevant legislation
- provide reports to appropriate body/individual as determined by the project brief.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the mandatory task requirements

EVIDENCE GUIDE

- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete

EVIDENCE GUIDE

confidence in the person's demonstrated ability and applied knowledge

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Scheduling, investigation, planning and site establishment include:

- builders' construction plant and equipment
- contractual arrangements relevant to state or territory building control legislation
- temporary builders' site services.

Buildings are limited to:

- three storeys
- a maximum floor area not exceeding 2000 square metres.

Construction principles for buildings include:

- adherence to legislative requirements for Building Code 7 of Australia Class 2 to 9 buildings
- design specifications
- evaluation and identification of construction methods
- maintenance specifications

RANGE STATEMENT

Characteristics, uses, maintenance and selection of materials include:

- standards and services in compliance with relevant legislation.
- barriers
- cost effectiveness
- cranes and hoists
- dangerous materials
- environmental safety
- evaluation and assessment of new materials
- gantries
- installation
- manufacture
- new technologies
- recycling
- rubbish removal
- scaffolding systems
- site shed locations
- testing
- transport problems and restrictions, including hoardings.

Types, principles and relevant regulations, including BCA, construction standards and practices include:

- cladding systems, such as:
 - aluminium
 - brick and paving for pedestrians and vehicular traffic
 - brickwork and blockwork
 - bronze
 - coated steel
 - curtain wall
 - fibre reinforced cement
 - glass
 - glass-reinforced polyester resin (GRP)
 - granite
 - in situ concrete (i.e. off-the-form or textured)
 - marble
 - metal and epoxy resin laminates
 - non-load bearing
 - permanent formwork
 - plastics
 - pre-cast concrete (load bearing)

RANGE STATEMENT

- sandwich panels
- stainless steel
- tiles and mosaics
- veneer facings (sandstone)
- dimensional coordination and general principles of:
 - component dimensions
 - controlling dimensions
 - joints and tolerances between control joints and construction joints (vertical and horizontal)
- footing systems, such as:
 - car park construction
 - de-watering
 - grillage
 - ground stabilisation
 - grouted anchors
 - mechanical anchors
 - pad and pedestal footings
 - pier and beam (bored piers and driven piles)
 - piles and cap
 - retaining walls
 - shoring
 - tanking and basement construction
 - underpinning
- plant and equipment, such as:
 - back hoes
 - concrete kibbles and skip
 - concrete pumps
 - crane and grab cranes
 - gantries and similar overhead protection systems
 - generators
 - hoardings
 - hoists
 - pumps, including submersible pumps
 - rock breakers
 - scaffolding

RANGE STATEMENT

- shovels and buckets
- skimmers and scrapers
- temporary lighting systems
- temporary support systems
- well points
- service core construction, such as:
 - ceilings
 - damp proof courses
 - demountable formwork
 - flashings
 - jump formwork
 - membranes
 - openings (floors and roofs)
 - sarking and insulations
 - slip formwork
 - wall and floor cladding
 - walls
- services, such as:
 - communication systems
 - electricity
 - fire services, including fire hydrants and fire hose reels
 - gas
 - heating and cooling systems
 - mechanical ventilation
 - roof water plumbing and drainage
 - sewerage/septic or similar systems of plumbing and drainage
 - smoke control systems
 - sprinklers and similar systems
 - surface drainage
 - telephone
- structural fit-out systems and fixing, such as:
 - cupboard joinery and finishes
 - floor
 - mouldings
 - wall and ceiling finishes and coatings
 - wall and ceiling linings

RANGE STATEMENT

- wet area floor detailing
- structural openings, such as:
 - braced frame and core
 - diagonal bracing superimposed over frame or tube structure.
 - door types for internal and external use
 - fenestration design based on bracing design
 - fire doors
 - rigid frame and core
 - timber and aluminium-framed windows and doors
 - tube structure
 - vehicle access doors
- structural systems, such as:
 - structural floor systems
 - structural roof systems
 - structural wall systems
- termite control:
 - which can be mechanical and chemical
 - may include other control systems.

Structural principles relate to:

- loads and forces
- stresses and strains applied to:
 - arches
 - beams
 - braces
 - columns
 - concrete floor slabs
 - load-bearing walls
 - roof frames, including trusses
 - structural footings
 - ties.

Unit Sector(s)

Unit sector

Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area