Draft 0.1

This is our work-in-progress update to CPCCBC6013A Evaluate materials for multi-storey buildings: https://training.gov.au/Training/Details/CPCCBC6013A.

We are working with industry experts to ensure the updated unit:

- meets current and anticipated industry needs
- complies with current Standards for Training Packages
- is written in clear understandable English.

Information on our training package review and development process is available here: http://www.artibus.com.au/project-stage.

Summary of changes from current endorsed unit

Re-templated to meet Standards for Training Packages 2012.

Sequenced Elements and Performance Criteria.

Specified what and how performance is demonstrated in Performance Evidence.

Captured critical Range Statement items and included industry relevant knowledge in Knowledge Evidence.

Stated mandatory conditions and specific requirements for assessment.

CPCCBC6013
Evaluate materials for multi-storey buildings

Application

This unit of competency specifies the skills and knowledge required to evaluate specified materials for use in the construction of multi-storey buildings. It includes the performance of concrete, the ability of materials to withstand fire and the environmental impact of certain materials in the building process.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for evaluating and considering a range of factors vital to ensuring the integrity of materials used in the construction of commercial and residential multi-storey buildings.

This unit is suitable for those who have a broad range of cognitive, technical and communication skills to identify, analyse, evaluate and synthesise information from a range of sources.

Prerequisite Unit

Nil.

Unit Sector

Construction.

Elements and Performance Criteria

1. Identify and assess the application of concrete materials.	1.1	Identify the application of concrete from project plans, details and specifications for different building and construction types.
	1.2	Determine distribution methods of concrete following analysis of site access.
	1.3	Manage correct distribution and placement methods of concrete.
	1.4	Identify reasons and effects of compaction on both plastic and hardened concrete.
	1.5	Compare immersion, surface and form vibration.
	1.6	Maintain accurate records relating to the application of concrete.
	1.7	Identify and record types of curing methods and detrimental effects of poor or no curing of concrete.
2. Assess the nature and performance of concrete.	2.1	Identify and record plastic and hardened concrete properties for building types.
	2.2	List sources of aggregate and detail the properties of each.
	2.3	Describe and record effects of impurities in concrete.
	2.4	Conduct testing of concrete in accordance with relevant Australian standards.
3. Evaluate methods undertaken to repair concrete.	3.1	Identify live and dormant cracks.
	3.2	Describe and record causes of cracked concrete, concrete cancer and repair methods.
	3.3	Diagnose and record faults in concrete following organisational requirements.

4. Evaluate effects of fire and heat on concrete.	4.1	Identify effects of fire and heat on types of concrete material.
	4.2	Determine and apply methods of fire protection for concrete elements.
	4.3	Establish fire resistance and stability meets the performance requirements of National Construction Code (NCC)
5. Monitor environmental impacts of concrete.	5.1	Use concrete in buildings which complies with organisation's sustainability policies.
	5.2	Monitor and apply new technologies in concrete in the construction of multi-storey buildings.
	5.3	Apply performance requirements of concrete in fire resistance construction in accordance NCC.
	5.4	Identify cost-effectiveness of using recycled materials in accordance with acceptable standard construction practices.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
  - use digital tools and devices to communicate and collaborate effectively with others
  - use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and equivalent to CPCCBC6013A Evaluate materials for multi-storey buildings.

Links

Companion Volume Implementation Guide: to be added.

Assessment Requirements for CPCCBC6013A Evaluate materials for multi-storey buildings

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by evaluating the nature and performance of concrete materials and products that form the structural components of a complex multi-storey building project.

In doing this, the candidate must:

- determine compliance with the National Construction Code (NCC)
- satisfy the performance requirements within the NCC.

Knowledge Evidence

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

- working drawings, details and specifications
- National Construction Code:
    - performance requirements
    - performance solutions
    - deemed-to-satisfy solutions
    - assessment methods
- government building and construction legislation and regulations
- characteristics, applications and limitations of concrete:
    - alternative uses
    - cost effectiveness
    - hazard potential and environmental safety
    - installation requirements
    - needs for use of cranes and hoists
    - recycling capacity
    - rubbish removal demands
    - transport problems and restrictions
- applications of structural principles in buildings
- building types:
    - bridge and pier construction
    - buildings with concrete skeleton and slabs
    - concrete column or wall 10 metres high
    - slab on ground floor
- design principles and behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- work health and safety (WHS) act and regulation and workplace safety requirements
- type, nature and performance of concrete:
    - properties and uses of cement
    - reinforced concrete:
        - methods of pre-stressed concrete
        - principles of reinforced concrete using steel, wire, fibres, etc

    - types of curing methods:
        - accelerated curing
        - continuously wetting concrete
        - impermeable membrane curing
- records include details of:
    - causes of surface defects during concrete placement
    - compaction of concrete
    - finishing processes and surface treatments to slab concrete

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- project working drawings, details and specifications
- government building and construction legislation
- National Construction Code
- sufficient equipment to facilitate evaluation of materials for multi-storey buildings

Links

Companion Volume Implementation Guide: to be added.