

### **Draft 0.1**

This is our work-in-progress update to CPCCCO3041 Place concrete:  
<https://training.gov.au/Training/Details/CPCCCO3041>.

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:**

- code changed to comply with policy for NSSC endorsement required changes to units
- elements and PCs modified to clarify requirements:
  - new PC 3.3 “Check concrete grade to ensure compliance with specifications”
  - PC 3.4 – added “ ... and communicate with relevant persons to maintain safety and quality in accordance with workplace requirements”
  - PC 4.1 – added using plant, tools and equipment (selection and maintenance was included in the unit, but not using plant, tools and equipment)
- Foundation Skills modified to specify numeracy requirements
- knowledge simplified to remove duplication and add specificity, eg:
  - all safety and environmental requirements under WHS and environmental legislation and regulations
  - removed reference to Australian Standard for ‘high performance concreting’
- included new knowledge points:
  - basic science of concrete:
    - chemical structure
    - plastic and hardened states
    - strength as measured using megapascals (MPa)
  - correct positioning of mesh for different concrete products to ensure mesh is free from movement and within height tolerance
  - effects of temperature, wind and low humidity on the properties of concrete and precautions that should be taken to minimise any potential adverse effects when placing concrete
  - purpose and importance of slump test and impact on concrete grade and strength of adding water on site without prior instructions from supplier
  - risks associated with silica exposure
  - purpose of slump testing and impact on concrete grade and strength of adding non-specified water to mix”
  - specifications used to interpret concrete placement requirements:
    - methods for calculating concrete quantities
    - methods for checking minimum strength and mix specifications
    - types and applications of concrete materials
- assessment conditions: standard wording changed and modified requirement for candidates

## Unit of Competency

### CPCCON3041 Place concrete

#### Modification history

Release	Comments
1	Supersedes and equivalent to CPCCCO3041A Place concrete. The unit of competency was updated to the Standards for Training Packages 2012. This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.
2	Supersedes and equivalent to CPCCCO3041 Place concrete. This version first released with CPC Construction, Plumbing and Services Training Package Version 6.0.

#### Application

This unit of competency specifies the skills and knowledge required to place concrete into prepared formwork or foundations to establish a strong base for further building work. It includes receiving and checking concrete against specifications, calculating the required volume of concrete, moving concrete from the truck to the pour location, and placing and screeding concrete.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

#### Prerequisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

#### Unit Sector

Concreting

#### Elements and Performance Criteria

1. Plan and prepare to place concrete.	1.1 Interpret specifications for concrete placement and clarify requirements with relevant persons. 1.2 Assess work site to determine scope of work against specifications. 1.3 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements. 1.4 Calculate material quantity requirements including volume of concrete to meet specifications. 1.5 Estimate and record required time for concrete pour based on size of area to be concreted, volume of concrete, weather conditions and other relevant site factors. 1.6 Select plant, tools and equipment, check for serviceability and rectify or report any faults. 1.7 Select and fit personal protective equipment appropriate for work activities.
2. Prepare location for concrete placement.	2.1 Inspect work site, assess hazards and apply risk controls including required signage and barricades around pour location.

	<p>2.2 Determine location for concrete placement from specifications.</p> <p>2.3 Discuss implications for concrete placement near existing structures with relevant persons and define separation or connection requirements.</p> <p>2.4 Check that location for placement is free of debris and waste.</p> <p>2.5 Ensure site access is clear to allow concrete to be received.</p>
3. Receive concrete.	<p>3.1 Check concrete delivery docket for accuracy against order.</p> <p>3.2 Direct concrete delivery vehicle to location of discharge.</p> <p>3.3 Identify slump tolerance against specifications and Australian Standards for minimum grade.</p> <p>3.4 Monitor concrete discharged via chute into appropriate receptacle and communicate with relevant persons to maintain safety and quality in accordance with workplace requirements.</p>
4. Carry out concrete placement activities.	<p>4.1 Use required plant, tools and equipment to place concrete in horizontal layers into location in accordance with indicated levels.</p> <p>4.2 Ensure vertical drop of concrete is less than two metres to avoid segregation of concrete materials.</p> <p>4.3 Consolidate poured concrete using required compaction or vibration method.</p> <p>4.4 Carry out measurements and calculations throughout pour to ensure sufficient concrete is delivered to fill placement area, and place order for any shortfall in accordance with workplace requirements.</p> <p>4.5 Check finished levels against datum using levelling device and rectify incorrect levels.</p> <p>4.6 Screed concrete to required levels and grades in accordance with specifications.</p>
5. Clean up.	<p>5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.</p> <p>5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' instructions and workplace requirements.</p>

#### Foundation skills

Candidates require:

- numeracy skills to calculate concrete volume ( $m^3$ ) and strength grades in megapascals (MPa).

#### Unit Mapping Information

Supersedes and is equivalent to CPCCCO3041 Place concrete

#### Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

## Assessment Requirements for CPCCON3041 Place concrete

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### Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by placing concrete at five different sites, each measuring at least 100 square metres, with three sites requiring:

- consideration for planned load bearing walls or columns
- set down or wet areas in the slab
- multiple levels and temporary formwork.

### Knowledge Evidence

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

- basic science of concrete:
  - chemical structure
  - plastic and hardened states
  - strength as measured using megapascals (MPa)
- concrete placement techniques:
  - horizontal layering
  - controlling vertical drop
  - cold joints and how to manage them effectively
  - consolidation
  - concrete reinforcement
  - levelling
  - screeding
- correct positioning of mesh for different concrete products to ensure mesh is free from movement and within height tolerance
- effects of weather and climatic conditions on the properties of concrete and precautions that should be taken to minimise any potential adverse effects when placing concrete
- preparation requirements of concrete placement locations:
  - single slab
  - multi-level slab
  - set down and wet areas
  - temporary formwork
- processes for calculating material requirements at various times throughout a concrete pour
- processes for determining levels indicated by:
  - level pegs
  - lines

- markers
- purpose and importance of slump testing and the impact on concrete grade and strength of adding water on site without prior instructions from supplier
- requirements of Australian Standards and the National Construction Code related to placing concrete
- requirements of Commonwealth and state or territory work health and safety and environmental legislation and regulations relevant to placing concrete:
  - hazard identification and risk control
  - hazardous material and waste disposal
  - job safety analyses
  - personal protective equipment
  - risks associated with silica exposure
  - safety data sheets
  - safe work method statements
  - safety manuals and instructions for plant, tools and equipment
  - signage and barricades
- specifications used to interpret concrete placement requirements:
  - methods for calculating concrete quantities
  - methods for checking minimum strength and mix specifications
  - types and applications of concrete materials
- types and purpose of concrete additives
- types, characteristics, uses and limitations of plant, tools, equipment and materials used to place concrete
- workplace requirements for placing concrete:
  - cleaning up
  - maintaining and storing plant, tools and equipment
  - placing orders for shortfalls
  - quality
  - reporting problems.

### Assessment Conditions

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

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

### Links

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