



Australian Government

CPCCCO3041A Place concrete

Release 1

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Modification History

This version first released with CPC08 Construction, Plumbing and Services Training Package Version 9.

- Changes to descriptor, elements and performance criteria, required skills and knowledge, critical aspects for assessment, and methods of assessment
- Range of other minor editorial changes

Not equivalent to CPCCCO3021A Place concrete.

Unit Descriptor

This unit of competency specifies the outcomes required to place concrete into prepared formwork or foundations to establish a strong base for further building work.

The unit includes calculating the volume of concrete required for the concrete pour, moving concrete from truck to pour location, and placing and screeding concrete.

Application of the Unit

This unit of competency supports the role of concreters working on residential, commercial or civil construction sites.

Licensing/Regulatory Information

Licensing, legislative, regulatory or certification requirements apply to concreting work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-Requisites

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry
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Employability Skills Information

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

Elements and Performance Criteria

- | | | |
|---|---|--|
| 1 | Plan and prepare. | <p>1.1 Work instructions, <i>work health and safety (WHS) requirements</i> and other <i>information</i> relevant to the work are identified, confirmed and applied for <i>planning and preparation</i> purposes.</p> <p>1.2 <i>Plant, tools and equipment</i> consistent with job requirements are selected and checked for serviceability, and faults are rectified and reported before work begins.</p> <p>1.3 Material quantity requirements, including the volume of concrete required, are identified and calculated according to plans, specifications and <i>quality requirements</i>.</p> <p>1.4 Materials appropriate to the work application are obtained, prepared, safely handled and located ready for use.</p> <p>1.5 Time required for concrete pour is estimated based on size of area to be concreted, volume of concrete required, and level of complexity of concrete pour.</p> <p>1.6 <i>Environmental requirements</i> are identified for the project according to environmental plans and regulatory requirements.</p> |
| 2 | Define and prepare location for concrete placement. | <p>2.1 <i>Location</i> of concrete placement is determined from plans and specifications.</p> <p>2.2 Implications for concrete placement near existing structures are discussed with <i>relevant personnel</i> and appropriate processes are implemented to ensure</p> |

- separation or connection.
- 2.3 Location for placement is checked to be free of debris and waste.
 - 2.4 Safe working area is maintained around pour location using barriers and signage consistent with WHS regulations.
 - 2.5 Plant, tools and equipment are obtained and checked to suit planned placement.
- 3 Receive and dispatch concrete.
 - 3.1 Delivery advice is checked for accuracy against ordered material.
 - 3.2 Access to the site is cleared.
 - 3.3 **Concrete delivery** vehicle is directed to location of discharge.
 - 3.4 Concrete is discharged via chute into **appropriate receptacle**.
- 4 Place concrete.
 - 4.1 **Concrete is placed** in horizontal layers into location according to indicated **levels**.
 - 4.2 Height of vertical drop of concrete is minimised to **avoid segregation of concrete** materials.
 - 4.3 Poured concrete is consolidated during process using approved compaction or vibration method.
 - 4.4 Measurements and calculations are conducted throughout the pour to ensure sufficient concrete is delivered to fill the required area and orders are placed for shortfall as required.
 - 4.5 **Finished** levels are checked against datum using appropriate levelling device.
 - 4.6 Concrete is **screeded** to correct levels and grades using appropriate straight edged tool or formwork mounted screed.

- 5 Clean up.
 - 5.1 Work area is cleared and materials disposed of, reused or recycled according to regulations, codes of practice and job specification.
 - 5.2 Plant, tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and standard work practices.

Required Skills and Knowledge

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

Required skills

- learning skills to:
 - evaluate own actions and make judgments about performance and necessary improvements
 - respond to change, such as differences in work site, and environmental and quality requirements
- numeracy skills to:
 - estimate time required to place concrete
 - calculate and confirm correct quantities of materials and volume of concrete required for work tasks at various times throughout the concrete pour
- oral communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, and share information
 - report work site hazards to appropriate personnel, including faults in tools, equipment or materials
 - use language and concepts appropriate to cultural differences
- reading skills to:
 - interpret documentation, including drawings and specifications
 - interpret manufacturer instructions for safely handling tools, equipment and materials
 - understand written instructions, procedures and signage
- writing skills to complete pre-operational checklists and simple equipment fault forms

Required knowledge

- concreting placement techniques:
 - cold joints and how to manage them effectively
 - compaction techniques
 - concrete reinforcement techniques
 - levelling techniques
 - placing concrete level and multi-level areas
- processes for calculating material requirements at various times throughout the concrete pour
- processes for material storage and environmentally friendly waste management
- properties of concrete, including the importance of maintaining the slump specified in the plans and specifications of the job in order to minimise waste, delay and faults in placing

concrete

- quality requirements relating to placing concrete
- types and applications of concrete materials
- types, characteristics, uses and limitations of plant, tools and equipment relevant to placing concrete
- types, location and use of relevant safety resources and information:
 - job safety analyses (JSA) and safe work method statements (SWMS)
 - safety data sheets (SDS)
 - signage and barricades

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 by performing a range of tasks 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 should demonstrate the ability to place concrete at five different placement sites, each measuring at least 100 square metres with a minimum of three sites requiring consideration for planned load bearing walls or columns, set down or wet areas in the slab, and multiple levels and temporary formwork.

The evidence provided should demonstrate the ability to:

- calculate time required for concrete pour
- estimate required volume of concrete prior to the concrete pour; and conduct relevant checks and calculations near the end of concrete pour and adjust volume of concrete as necessary
- place, screed to level, and compact concrete in a safe and effective way, using appropriate combinations of listed tools and equipment and in the timeframe provided
- locate, interpret and apply relevant information, standards and specifications relating to placing concrete
- comply with site safety plans and procedures
- comply with organisational policies and procedures relating to placing concrete while ensuring the required level of quality
- safely and effectively operate and use plant, tools and equipment required to place concrete
- communicate and work effectively and safely with others.

Context of and specific resources for assessment Assessment of this unit:

- must be in the context of the work environment
- may be conducted in an off-site context, provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills
- must meet relevant compliance requirements.

Resource implications for assessment include:

- an induction procedure

- realistic tasks or simulated tasks covering the mandatory task requirements
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to placing concrete
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- safety data sheets.

Method of assessment Assessment for this unit must verify the practical application of the required skills and knowledge, using a combination of the following methods:

- direct observation of tasks in real or simulated work conditions
- questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- review of relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Guidance information for assessment This unit could be assessed on its own or in combination with other units relevant to the job function for example:

- CPCCCO2022A Use and maintain concreting plant, tools and equipment.

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.

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.

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.

Work health and safety • assistance of others or the use of manual or mechanical lifting

requirements must comply with state and territory legislation and regulations and project safety plan, and may include:

- devices with handling activities where size, weight or other issues, such as disability, are a factor
- emergency procedures, including extinguishing fires, organisational first aid requirements, and evacuation procedures
- hazard control
- hazardous materials and substances
- personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - earth leakage boxes
 - lighting
 - power cables, including overhead service trays, cables and conduits
 - signage and restricted access barriers
 - surrounding structures
 - traffic control
 - trip hazards
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
 - working outdoors in warm climates
- use of firefighting equipment
- use of tools and equipment
- workplace environmental requirements and safety.
- instructions issued by authorised organisational and external personnel
- memos
- regulatory and legislative requirements relating to placing concrete, including Australian standards
- safe work procedures relating to placing concrete
- safety data sheets
- signage
- verbal, written and diagrammatic instructions, including manufacturer specifications and instructions where specified
- work bulletins
- work schedules, plans and specifications.
- assessing conditions and hazards
- calculating time required to complete task
- identifying and rectifying equipment defects

Information may include:

Planning and preparation must include:

Plant, tools and equipment:

- inspecting work sites.
- must include:
 - chutes
 - measuring tapes and rules
 - screed boards
 - shovels
 - trowels
- may include:
 - brooms
 - compressors
 - concrete placing booms
 - kibbles
 - line pumps
 - mechanised dumpers
 - rakes
 - stipple devices
 - trowelling machines
 - vibrators
 - wheelbarrows.

Quality requirements must include:

- internal organisational quality policy and standards
- manufacturer specifications where specified
- relevant regulations and Australian standards
- workplace operations and procedures.

Environmental requirements may include:

- clean-up management
- dust and noise control
- stormwater management
- vibration management
- waste management.

Location must include:

- single slab
- multi-level slab
- set down and wet areas
- temporary formwork.

Relevant personnel may include:

- architect
- client
- site manager or supervisor
- stonemason.

Concrete delivery may include:

- crane and kibble
- pre-mix truck
- wheelbarrow.

Appropriate receptacle

- hopper

may include:

- kibble
- pump
- wheelbarrow.

Placing of concrete may include:

- kibble
- pumping equipment
- shovelling
- tremmies
- truck-placed
- vibrating
- wheelbarrows.

Levels are indicated by:

- level pegs
- lines
- markers.

Methods to ***avoid segregation of concrete*** may include:

- using a tremmie, minimise the height of a vertical drop (no greater than 2 metres high for 20MPA at 80 slump)
- using pumps with a flexible hose.

Finishing techniques may include:

- broom finished
- brushed
- mechanical trowelling
- steel trowelling
- wood float.

Screeding:

- must include a hand screed
- may include:
 - a mechanical vibrating screed
 - magic screeds.

Unit Sector(s)

Concreting

Custom Content Section

Not applicable.