



**Australian Government**

# **CPCCCO3051A Conduct off-form vertical concrete operations**

**Release 1**

## **CPCCCO3051A Conduct off-form vertical concrete operations**

### **Modification History**

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

- Changes to performance criteria, required skills and knowledge, range statement, and methods of assessment
- Range of other minor editorial changes

Not equivalent to CPCCCO3031A Conduct off-form vertical concrete operations

### **Unit Descriptor**

This unit of competency specifies the outcomes required to prepare and apply concrete to a slip or jump formwork structure.

The unit covers sequencing, placing and compacting concrete in formwork. It may include working with others and as a member of a team.

### **Application of the Unit**

This unit of competency supports the role of those working with concrete on residential, commercial or civil construction sites in the construction of multi-storey buildings.

### **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

### **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, <b><i>work health and safety (WH&amp;S) requirements</i></b> and other <b><i>information</i></b> relevant to the work are identified, confirmed and applied for <b><i>planning and preparation</i></b> purposes.</p> <p>1.2 Plant, <b><i>tools and equipment</i></b> 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 are identified and calculated according to plans, specifications and <b><i>quality requirements</i></b>.</p> <p>1.4 <b><i>Materials</i></b> appropriate to the work application are obtained, prepared, safely handled and located ready for use.</p> <p>1.5 <b><i>Environmental requirements</i></b> are identified and applied for the project according to environmental plans and regulatory obligations.</p> |
| 2 | Set out and prepare slip or jump form location. | <p>2.1 Location and size of pour are set out to requirements of job drawings and specifications.</p> <p>2.2 Equipment associated with the installation of <b><i>slip or jump formwork concrete</i></b> projects is prepared.</p> <p>2.3 Edge <b><i>formwork</i></b> is prepared, placed and fixed with plumb and alignment to specification requirements, and is set out.</p> <p>2.4 Form release agent is applied to slip or jump formwork</p>  |

with appliance or machine to specifications.

- |   |   |     |   |
|---|---|-----|---|
| 3 | Place and tie reinforcement and cast-in fittings. | 3.1 | <b>Reinforcement</b> , accessories and <b>cast-in fittings</b> are checked for conformity with design and specifications.   |
|   |   | 3.2 | Reinforcement and accessories are positioned to engineer's drawings and specifications.   |
|   |   | 3.3 | Reinforcement is tied and/or welded in correct placement according to engineer's drawings and specifications.   |
| 4 | Place, finish and cure concrete.                  | 4.1 | <b>Sequencing</b> of concrete placement is determined according to specifications.  |
|   |   | 4.2 | Once transported, concrete is evenly <b>placed</b> into formwork in layers and consolidated to specification, avoiding material segregation and using approved compaction method. |
|   |   | 4.3 | Concrete surface is screeded and finished to specification ensuring cast-in fittings are clear.   |
|   |   | 4.4 | <b>Curing</b> process is applied according to specification.  |
|   |   | 4.5 | Slip or jump formwork is progressed by riggers and placement cycle is continued, avoiding cold joint.   |
| 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:
  - check levels of lubricants in tools
  - calculate and confirm correct quantities of materials for work tasks
- 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
  - understand written instructions, procedures and signage
  - interpret manufacturer instructions for safely handling tools and equipment
- writing skills to complete pre-operational checklists and equipment fault forms

### Required knowledge

- general construction terminology
- principles of concreting, including:
  - techniques for placing, finishing and curing concrete
  - levelling techniques
- principles of slip or jump formwork systems, including:
  - slip or jump formwork vertical concrete materials and techniques
  - slip or jump formwork and reinforcing componentry
- processes for calculating material requirements
- quality requirements relating to each stage of conducting off-form vertical concrete operations
- processes for material storage and environmentally friendly waste management
- sequencing and cold joints use requirements

- types, characteristics, uses and limitations of plant, tools and equipment used in conducting off-form vertical operations
- types, location and usage of relevant safety information such as:
  - job safety analyses (JSA) and safe work method statements (SWMS)
  - safety data sheets (SDS)
  - safety manuals and instructions for plant, tools and equipment
  - signage
  - environmental and work site safety plans
- workplace and equipment safety requirements, including hazard reporting requirements and correct handling of equipment faults

## 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 undertaking 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:

- complete planning, preparation, reinforcement placement and installation of block out; install cast-in fittings; and sequence, place, finish and cure concrete, minimising cold joint and undertaking compaction of concrete for one slip or jump form to engineer's specifications
- locate, interpret and apply relevant information, standards and specifications relating to conducting off-form vertical concrete operations
- comply with site safety plans and procedures
- comply with organisational policies and procedures relating to conducting off-form vertical concrete operations while maintaining quality requirements outlined in job specifications
- safely and effectively operate and use plant, tools and equipment required to conduct off-form vertical concrete operations
- communicate and work effectively and safely with others during each stage of the work task.

**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 activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- research resources and industry-related systems information
- 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.

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

- assistance of others or the use of manual or mechanical lifting 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
  - 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
- 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 off-form vertical concreting
- relevant Australian standards
- safe work procedures relating to off-form vertical concreting
- safety data sheets
- signage
- verbal, written and diagrammatical instructions, including manufacturer specifications and instructions where specified
- work bulletins
- work schedules, plans and specifications.
- assessing conditions and hazards
- determining work requirements and safety plans and procedures
- identifying and rectifying equipment defects
- inspecting work sites.
- must include:
  - hydraulic accessories
  - measuring tapes and rules
  - nips

**Information** may include:

**Planning and preparation** must include:

**Tools and equipment:**

- shovels
- slip or jump formwork
- spanners
- steel fixing reels
- vibrators
- may include:
  - air compressors and hoses
  - hammers
  - nail guns
  - power drills
  - power leads
  - power saws
  - rakes
  - saw stools
  - scaffolding
  - screed boards
  - spirit levels
  - squares
  - wheelbarrows.

**Quality requirements** must include:

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

**Materials** may include:

- cast-in fittings
- concrete
- foam
- release agents
- steel mesh.

**Environmental requirements** may include:

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

**Slip or jump formwork concreting** is conducted:

- in conjunction with other team members involved in the slip or jump form process, including concreters, carpenters, riggers, steel fixers and electricians.

**Formwork** may include:

- steel or timber slip or jump construction.

**Reinforcement** components may include:

- ligatures
- mesh
- reinforcement bars and rods.

- Sequencing** must include:
- minimising cold joint
  - timing and placement of concrete
  - vibrating to specified compaction.
- Placing** methods for concrete may include:
- kibble
  - pumping equipment
  - shovelling
  - tremmies
  - truck-placed
  - vibrating.
- Curing** must include:
- applied moisture
  - coating with a membrane
  - curing compounds
  - flooding
  - plastic sheeting
  - steam.

## **Unit Sector(s)**

Not applicable.

## **Custom Content Section**

Not applicable.