



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPCCCO2004A Carry out concrete work**

**Release: 1**

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### **Modification History**

Not applicable.

### **Unit Descriptor**

This unit of competency specifies the outcomes required to carry out concreting work on general construction projects for the construction of in situ reinforced concrete structures, such as slabs and other common concrete works.

This unit includes setting out, reinforcing, erecting and dismantling formwork, and placing, finishing and curing concrete.

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### **Application of the Unit**

This unit of competency supports the attainment of the understanding and skills to use the tools, equipment and materials to carry out concrete work, which may include working with others and as a member of a team.

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### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

CPCCOHS1001A

Work safely in the  
construction industry

## Employability Skills Information

This unit contains employability skills.

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## 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.

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## Elements and Performance Criteria

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Element	Performance Criteria
1 Plan and prepare.	<p>1.1 Work instructions and operational details are obtained using relevant <b>information</b> , confirmed and applied for <b>planning and preparation</b> purposes.</p> <p>1.2 <b>Safety (OHS)</b> requirements are followed in accordance with safety plans and policies.</p> <p>1.3 Signage and barricade requirements are identified and implemented.</p> <p>1.4 Plant, <b>tools and equipment</b> selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement.</p> <p>1.5 Materials quantity requirements are calculated in accordance with plans, specifications and <b>quality requirements</b> .</p> <p>1.6 <b>Materials</b> appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use.</p>

- 1.7 **Environmental requirements** are identified for the project in accordance with environmental plans and regulatory obligations and applied.
- 2 Prepare concreting materials.
  - 2.1 Location of steel reinforcement and formwork is determined from drawings and reinforcement schedule.
  - 2.2 **Reinforcement** is checked against reinforcement drawings and specifications.
  - 2.3 **Formwork** components and materials are selected consistent with job.
  - 2.4 Fixing and fasteners are selected and used consistent with requirements of the job.
- 3 Set out for concrete work.
  - 3.1 String lines are set accurately from existing pegs.
  - 3.2 Grades are checked to ensure correct fall.
  - 3.3 Services are identified and protected to prevent damage.
- 4 Construct and install reinforcement.
  - 4.1 Reinforcing fabric and bars are cut and bent as required to project drawings and specifications.
  - 4.2 Fabric and bars are tied or fixed to configuration from project drawings and specifications.
  - 4.3 Stiffening rods are attached to panels as required to facilitate handling.
  - 4.4 Reinforcement material is located in formwork and placed on bar chairs/spacers as determined from drawings, noting clearance from formwork.
  - 4.5 **Cast-in items** are located and secured.
- 5 Erect formwork.
  - 5.1 Work area is cleared and surface prepared for safe erection of formwork.
  - 5.2 Formwork is set out to requirements of drawings and specifications.
  - 5.3 Formwork is assembled and erected to specifications.
  - 5.4 Debris, sawdust and other waste material are safely

- removed from formwork.
- 5.5 Form release agent is applied to manufacturer specifications.
- 6 Carry out concrete work.
- 6.1 **Concrete is transported** correctly with wheelbarrow and discharged into formwork, using correct manual handling techniques.
- 6.2 Discharge of concrete from concrete pump line and/or chute into the formwork is controlled correctly.
- 6.3 **Concrete is placed** correctly to instruction and screeded to specified levels and grades.
- 6.4 Concrete is compacted to specification using immersion vibrator or other specified method.
- 6.5 **Concrete is finished and curing** process applied to specifications.
- 6.6 Control joints are positioned and installed to specification and to current Australian standard or codes.
- 6.7 Dowel joints are positioned to specification.
- 6.8 Concrete surface is adequately covered and protected.
- 7 Strip formwork.
- 7.1 Edge boxing and braces are removed carefully, safely and sequentially.
- 7.2 Timber components are derailed, cleaned and stored or stacked.
- 7.3 Steel components are cleaned, oiled and stored or stacked.
- 7.4 Damaged formwork components are discarded after stripping.
- 7.5 Screens are safely cleaned before movement, where applicable.

- 8 Clean up.
  - 8.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification.
  - 8.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.

## Required Skills and Knowledge

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

### Required skills

Required skills for this unit are:

communication skills to:

evaluating own actions and making judgments about performance and necessary improvements

identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials

organisational skills, including the ability to plan and set out work

recognising procedures, following instructions, responding to change and contributing to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems

teamwork skills to coordinate own work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities

technological skills to:

determine requirements

enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand

follow instructions

read and interpret:

report faults

use language and concepts appropriate to cultural differences

use and interpret non-verbal communication, such as hand signals

documentation from a variety of sources

drawings and specifications

use a range of mobile technology, such as two-way radio and mobile phones

voice and hand signals to access and understand site-specific instructions.

### Required knowledge

Required knowledge for this unit is:

concrete characteristics and properties

concreting principles

equipment types, characteristics, technical capabilities and limitations

formwork

general construction terminology

job safety analysis (JSA) and safe work method statements

material safety data sheets (MSDS)

materials handling methods

operational, maintenance and basic diagnostic procedures

processes for interpreting engineering drawings

quality requirements

site and equipment safety requirements

site isolation and traffic control responsibilities and authorities

steel reinforcement characteristics

structural technology.



## 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:

locate, interpret and apply relevant information, standards and specifications

comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations

comply with organisational policies and procedures including quality requirements

safely and effectively operate and use tools, plant and equipment

communicate and work effectively and safely with others

complete at least three concreting projects (each a minimum of two cubic metres of concrete), incorporating a minimum of two different finishes with at least one project containing angled formwork and bent reinforcement and all projects being completed to job specifications.

### 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

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 Integrated Framework 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 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.

**Information** includes:

diagrams or sketches  
instructions issued by authorised organisational or external personnel  
manufacturer specifications and instructions, where specified  
MSDS  
memos  
regulatory and legislative requirements pertaining to carrying out concrete work  
relevant Australian standards  
safe work procedures relating to concreting  
signage  
verbal, written and graphical instructions  
work bulletins  
work schedules, plans and specifications.

**Planning and preparation** include:

assessment of conditions and hazards  
determination of work requirements and safety plans and policies  
equipment defect identification  
work site inspection.

**Safety (OHS)** is to be in accordance with state and territory legislation and regulations and project safety plan and may include:

emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation  
handling activities that may require the assistance of others or the use of manual or mechanical lifting devices where size, weight or other issues, such as a disability are a factor

hazard control  
hazardous materials and substances  
organisational first aid  
PPE prescribed under legislation, regulations  
and workplace policies and practices  
safe operating procedures, including the  
conduct of operational risk assessment and  
treatments associated with:  
use of firefighting equipment  
use of tools and equipment  
workplace environmental requirements and  
safety.  
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

**Tools and equipment include:**

bolt cutters  
brushes  
buckets  
chutes  
curing agent applicator  
edging tools  
floats  
hammers  
hoses  
kibble  
mesh guillotine

nips  
rakes  
reinforcement benders  
rods  
screeds  
short handle shovels  
shutters  
sponges  
steam generator  
tarpaulins  
tremmies  
trowels  
vibrators  
wheelbarrows.

**Quality requirements include:**

internal company quality policy and standards  
manufacturer specifications where specified  
relevant regulations, including Australian standards  
workplace operations and procedures.

**Materials include:**

bar chairs  
cement  
concrete blend  
curing compounds  
form release agents  
formwork components  
membranes  
pre-mix concrete  
sand  
steel reinforcing  
vapour barriers  
water.

**Environmental requirements include:**

clean-up management

	dust and noise
	stormwater management
	vibration
	waste management.
<b>Reinforcement</b> components include:	ligatures
	mesh
	reinforcement bars and rods.
<b>Formwork</b> includes:	expanded polystyrene
	fibreglass
	masonry
	plywood
	steel shutters
	structural cardboard
	timber.
<b>Cast-in items</b> include:	services and fixtures tied to the reinforcement.
<b>Concreting</b> work includes:	beams
	columns
	footings
	footpaths
	lintels
	pads
	ramps
	repairing of kerb and channel
	slabs on ground
	stairs
	structural members
	suspended slab
	walls.
<b>Transporting of concrete</b> includes:	crane and kibble
	pre-mix truck
	pumping equipment

	wheelbarrow.
<b>Placing of concrete</b> includes:	kibble pumping equipment shovelling tremmies truck placed vibrating wheelbarrow.
<b>Concreting finishing</b> techniques include:	broom finished brushed bull float mechanical trowelling machine steel trowel wood float.
<b>Curing</b> includes:	applied moisture coating with a membrane curing compound flooding plastic sheeting steam.

## Unit Sector(s)

Construction  
Construction

## Functional Area

empty  
empt