



Australian Government

Department of Education, Employment and Workplace Relations

CPCCCA3019A Erect and dismantle formwork to suspended slabs, columns, beams and walls

Release: 1

CPCCCA3019A Erect and dismantle formwork to suspended slabs, columns, beams and walls

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency specifies the outcomes required to erect and dismantle formwork to suspended slabs, columns, beams and walls to contain concrete in above ground construction. It includes timber, metal or prefabricated formwork of modular or in situ design.
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Application of the Unit

Application of the unit	This unit of competency supports achievement of skills for erecting and taking down formwork to place concrete for slabs, walls, columns and beams above ground in a range of construction projects, which includes working with others and as a member of a team.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry

Employability Skills Information

Employability skills 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 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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare.	<ul style="list-style-type: none">1.1. Work instructions, including plans, specifications, quality requirements and operational details, are obtained, confirmed and applied from relevant information for planning and preparation purposes.1.2. Safety (OHS) requirements are followed in accordance with safety plans and policies.1.3. Signage and barricade requirements are identified and implemented.1.4. Plant, tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.1.5. Material quantity requirements are calculated in accordance with plans, specifications and quality requirements.1.6. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use.1.7. Environmental requirements are identified for the project in accordance with environmental plans and statutory and regulatory authority obligations, and are applied.
2. Erect formwork.	<ul style="list-style-type: none">2.1. Work area is cleared and surface prepared for safe erection of formwork for suspended slabs, piers and shutters.2.2. Formwork is set out to requirements of plans and specifications.2.3. Formwork is assembled to plans, specifications and class of surface finish, with support system set to correct height level and line.2.4. Bracing of formwork is placed according to support plans and specifications to maintain rigidity and stability.2.5. Formwork support system is sequentially erected according to initial set out to job specifications.2.6. Formwork shutters and/or edge boxing is constructed to designed form requirements and specified dimensions.2.7. Block-outs and cast-in services are installed to specified locations.2.8. Debris, sawdust and other waste materials are removed from completed formwork in accordance with waste management policy for the site.2.9. Release agent is applied to formwork face to

ELEMENT

PERFORMANCE CRITERIA

manufacturer specifications where specified.

ELEMENT	PERFORMANCE CRITERIA
3. Strip formwork.	<p>3.1. Formwork and bracing/strutting support are removed sequentially and safely.</p> <p>3.2. Timber components are de-nailed, cleaned and stored or stacked safely for reuse or removal from site.</p> <p>3.3. Steel components are cleaned, oiled and stored or stacked to manufacturers' maintenance recommendations.</p> <p>3.4. Damaged formwork components are safely discarded after stripping.</p>
4. Clean up.	<p>4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification.</p> <p>4.2. Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.</p>

Required Skills and Knowledge

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:
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow instructions
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
 - report faults
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- numeracy skills to apply measurements and make calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a

REQUIRED SKILLS AND KNOWLEDGE

range of cultural and ethnic backgrounds and with varying physical and mental abilities

- technological skills to:
 - 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:

- application and requirements for line, level and plumb in construction projects
- concrete properties
- construction terminology
- formwork materials and techniques
- hydraulic pressures applied to formwork
- job safety analysis (JSA) and safe work method statements
- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, specifications and drawings
- plant, tools and equipment types, characteristics, uses and limitation
- processes for setting out and measuring
- processes for calculating material requirements
- purpose, application and properties of commonly used release agents
- quality requirements of formwork to suspended slabs, columns, beams and walls
- workplace and equipment safety requirements.

Evidence Guide

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, OHS regulations and state and territory legislation applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools, plant and equipment
- communicate and work effectively and safely with others
- set out and erect suspended slab formwork (slab size a minimum of 30 square metres), incorporating a beam and two different types of columns with a specified formwork system at a minimum height of 2.4 metres.

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

EVIDENCE GUIDE

- 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 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

EVIDENCE GUIDE

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
- memos
- MSDS
- organisation work specifications and requirements
- plans and specifications
- regulatory and legislative requirements pertaining to erecting and dismantling formwork to suspended slabs, columns, beams and walls
- relevant Australian standards
- safe work procedures related to erecting and

RANGE STATEMENT

dismantling formwork to suspended slabs, columns, beams and walls

- signage
- verbal or written and graphical instructions
- work bulletins
- work schedules.

RANGE STATEMENT

Planning and preparation
include:

- work site inspection
- equipment defect identification
- assessment of conditions and hazards
- determination of work requirements.

Safety (OHS) is to be in accordance with state or territory legislation, regulations, codes of practice, organisational safety policies and procedures, and project safety plan and may include:

- emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
- handling of materials
- hazard control
- hazardous materials and substances
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - earth leakage boxes
 - lighting
 - personnel
 - 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 with dangerous materials
- organisational first aid
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- use of firefighting equipment
- use of tools and equipment
- workplace environment and safety.

Tools and equipment include:

- air compressors and hoses
- automatic levels
- chisels
- hammers
- hand saws
- ladders and scaffolding
- marking equipment

RANGE STATEMENT

- measuring tapes and rules
- nail bags
- nail guns
- pinch bars
- power drills
- power grinders
- power leads
- power saws
- proprietary formwork equipment
- saw stools
- shovels
- spanners
- spirit levels
- squares (combination/tri)
- steel squares
- string lines.

RANGE STATEMENT

<i>Quality requirements</i> include relevant regulations, including:	<ul style="list-style-type: none">• Australian standards• internal company quality policy and standards• manufacturer specifications, where specified• workplace operations and procedures.
<i>Materials</i> include:	<ul style="list-style-type: none">• formwork componentry, including:<ul style="list-style-type: none">• bolts and nuts• coach screws• masonry anchors• metal brackets• nails and spikes• patented metal fasteners• steel tie rods• timber.
<i>Environmental requirements</i> include:	<ul style="list-style-type: none">• clean-up protection• noise and dust• vibration• waste management.
<i>Statutory and regulatory authorities</i> include:	<ul style="list-style-type: none">• federal, state and local authorities administering applicable Acts, regulations and codes of practice.
<i>Formwork:</i>	<ul style="list-style-type: none">• includes prefabricated or in situ, but is to be rigid to withstand the mass of wet concrete and actions imposed during placement• for construction of formwork it is critical to comply with regulations and specifications for height, level and loadings• includes timber, metal and prefabricated components.
<i>Piers</i> include:	<ul style="list-style-type: none">• cardboard• metal• timber.
<i>Surface finish</i> can be:	<ul style="list-style-type: none">• plain or decorative, with quality applicable to its application.
<i>Shutters</i> include:	<ul style="list-style-type: none">• can be timber or metal.
<i>Block-outs and cast-in services:</i>	<ul style="list-style-type: none">• make provision for services by other contractors• may be construction of timber, metal, styrene foam or prefabricated.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area