



Australian Government

CPCCCO3052A Conduct concrete boom delivery operations

Release 1

CPCCCO3052A Conduct concrete boom delivery 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 CPCCCO3032A Conduct concrete boom delivery operations

Unit Descriptor

This unit of competency specifies the outcomes required to conduct concrete boom delivery operations, using a vehicle-borne pumping system, in support of construction projects. It covers systems with a minimum of two boom stages.

The unit covers planning and preparing for work; conducting operational checks; the safe and effective operation of the vehicle and pumping system; the safe establishment, use and monitoring of the boom distribution system; and conducting operator maintenance and work finalisation activities.

The unit 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 who deliver concrete placing booms to 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

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. | 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. |
| | | 1.2 | <i>Tools and equipment</i> consistent with job requirements are selected and checked for serviceability, and faults are rectified and reported before work begins. |
| | | 1.3 | Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. |
| | | 1.4 | <i>Environmental requirements</i> are identified for the project according to environmental plans, local council requirements and regulatory obligations. |

- 2 Conduct boom delivery system pre-operational checks.
 - 2.1 Pre-start, start-up, park and shut-down procedures, including emergency shut-down procedures, are carried out on the vehicle and pump according to manufacturer and/or site-specific requirements.
 - 2.2 Vehicle controls and *functions* are checked for serviceability and faults are rectified and reported in vehicle log book.
 - 2.3 Distribution *system components* are checked before use.
 - 2.4 Hoppers are cleaned and serviced prior to use.

- 3 Operate concrete boom delivery vehicle.
 - 3.1 ***Hazards associated with vehicle positioning and operations*** are identified and safe operating techniques are used to minimise risk.
 - 3.2 Engine power is managed to ensure efficiency of concrete pump vehicle platform movements and to minimise damage to engine and gears.
 - 3.3 Engine power is coordinated with gear selection ensuring smooth transition and operation within torque range.
 - 3.4 Truck is operated to work instructions according to company operating procedures.
 - 3.5 Road and traffic conditions are monitored, taking into account road standards, traffic flow, distance and load, and ensuring no injury to people or damage to property, equipment, loads and facilities.
 - 3.6 Truck is brought to a halt smoothly, using the engine retarder, gears and brakes, and minimising wear and tear on vehicle.

- 4 Deliver concrete.
 - 4.1 ***Hazards associated with positioning and operating boom*** delivery components are identified and analysed, and safe operating techniques are used to minimise risk.
 - 4.2 Boom delivery vehicle is positioned at site where it can best service the delivery task and provide access to concrete supply vehicles.

- 4.3 Delivery platform stabilisers are prepared, deployed and checked to manufacturer requirements for operation and safety.
 - 4.4 **Delivery system components** are positioned securely and safely, according to manufacturer specifications, and checked prior to use.
 - 4.5 Pumping systems are test run and prepared for use according to equipment specifications.
 - 4.6 Supply of bulk **concrete mix** to the hopper is coordinated safely with supply vehicle operators.
 - 4.7 Boom delivery system is operated and its positioning is varied to maintain concrete delivery to the required destination.
 - 4.8 Boom delivery system is safely withdrawn at completion of delivery task.
- 5 Carry out operator maintenance.
- 5.1 Boom delivery vehicle is safely parked, prepared for **maintenance** and shut down as per manufacturer manual and organisational requirements.
 - 5.2 Inspection and fault finding on the vehicle, pump and boom system components are conducted according to manufacturer specifications, with outcomes recorded according to workplace procedures.
 - 5.3 Defective parts are removed and replaced safely and effectively according to manufacturer manual and organisational requirements.
 - 5.4 Regular programmed maintenance tasks are carried out according to manufacturer and organisational requirements.
- 6 Clean up.
- 6.1 Work area is cleared and materials disposed of, reused or recycled according to project environmental management plan.
 - 6.2 Vehicle, 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
- 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

- boom and line establishment techniques
- characteristics, technical capabilities and limitations of concrete boom delivery vehicle systems:
 - operational, maintenance and basic diagnostic procedures
 - pumps and pumping system operations
 - safe operating techniques in all terrain
- construction activity sequences relating to bulk concreting operations
- general construction terminology
- quality requirements relating to concrete boom delivery operations
- requirements and methods for safe materials handling
- site and equipment safety requirements:
 - knowing when and how to activate emergency shut-down procedures
 - overhead safety requirements relating to boom operations
- site isolation and traffic control responsibilities and authorities

- state or territory regulatory requirements relating to boom delivery system operations
- types, location and usage of relevant safety information:
 - 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

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:

- conduct concrete boom delivery truck system operations over not less than three shifts at two different sites, which will include demonstration of:
 - positioning of the vehicle
 - preparation and positioning of the booms and lines
 - preparation of the pump and hopper
 - coordination of maintenance of hopper levels
 - delivery of concrete to required location on work site
 - variation of boom delivery system positioning to meet changing requirements
 - withdrawal of the boom delivery system
 - application of emergency procedures
 - authorised operator maintenance
- locate, interpret and apply relevant information, standards and specifications relating to concrete boom delivery operations
- comply with site safety plans and procedures
- comply with organisational policies and procedures, relating to concrete boom delivery operations, including quality requirements
- communicate and work effectively and safely with others during each stage of the concrete boom delivery operation.

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
- 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

- 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,

regulations and project safety plan, and may include:

- 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.

Information may include:

- diagrams or sketches
- instructions issued by authorised organisational and external personnel
- memos
- regulatory and legislative requirements relating to concrete boom delivery
- relevant Australian standards
- safe work procedures relating to concrete boom delivery
- safety data sheets
- signage
- vehicle systems operations and the environment
- verbal, written and graphical 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

Planning and preparation must include:

- identifying and rectifying equipment defects
 - inspecting work sites.
 - designation of a pump washout area
 - clean-up management
 - dust suppression, noise and fume abatement
 - stormwater management
 - vibration management
 - waste management.
- Environmental requirements*** may include:
- Functions*** must include:
- brakes
 - manoeuvrability
 - steering.
- System components*** must include:
- adaptors
 - boom components
 - hoses
 - lines.
- Hazards associated with vehicle positioning and operations*** may include:
- interruption of concrete flow
 - mechanical failure of vehicle or parts
 - positioning hazards:
 - insufficient clearance space between trucks and equipment
 - placing vehicle and pump on sloping or unstable ground
 - proximity of vehicle to trenches
 - traffic-related hazards.
- Hazards associated with positioning and operating boom*** may include:
- mechanical failure of the boom
 - proximity to overhead power lines or electrical equipment
 - traffic-related hazards.
- Concrete delivery systems:***
- must include:
 - boom-mounted conveyors
 - lines
 - may include adaptors.
- Concrete mixes*** vary in water content and, in order from wet to dry, include:
- block-fill
 - pool-mix
 - topping
 - slab
 - footing
 - curb and guttering.
- Operator maintenance:***
- must include:
 - authorised servicing
 - cleaning
 - monitoring, recording and reporting faults

- may include:
 - conducting authorised minor replacements
 - providing assistance to maintenance personnel during maintenance and repair activities.

Unit Sector(s)

Concreting

Custom Content Section

Not applicable.