



Australian Government

CPCCLTC4001 Licence to operate a tower crane

Release: 3

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Modification History

- Release 3 Updated reference to general construction induction training program.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCLTC4001A Licence to operate a tower crane. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely operate a tower crane.

Tower crane work involves a boom crane or a jib crane (with horizontal or luffing jib) mounted on a demountable or permanent tower structure.

Self-erecting tower cranes are not included in this unit of competency.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan task.
 - 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information.
 - 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements.
 - 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements.
 - 1.4 Identify workplace and task-specific hazards, including hazards associated with working at heights, and determine required risk controls and safety measures and equipment, including fall prevention and fall arrest equipment, as required.
 - 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects.
 - 1.6 Calculate load weight in consultation with licensed dogger.
 - 1.7 Consult with licensed dogger to confirm that load weight is within the rated capacity of the crane and the working load limit (WLL) of the lifting gear.
 - 1.8 Determine and inspect crane and load movement paths.
 - 1.9 Confirm implementation of and compliance with traffic management plan.
 - 1.10 Establish required communication methods with relevant persons.
 - 1.11 Establish and maintain communication with relevant persons to ensure lift plan and risk controls are communicated clearly, including any impact on other workplace activities.
- 2 Prepare for task.
 - 2.1 Check signs and labels to ensure visibility and legibility.
 - 2.2 Assess wind and other adverse weather conditions and determine whether their impact on the crane and loads is within the manufacturer requirements for safe operation.

- 2.3 Access crane safely.
 - 2.4 Test crane safety devices in accordance with workplace requirements.
 - 2.5 Carry out pre-start crane checks and report, record and take action on identified damage or defects, in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
 - 2.6 Check that crane logbook has been completed and signed, that it is correct for crane type and current compliance, and that any rectifications have been signed off.
 - 2.7 Start crane, carry out operational checks, check for abnormal noises, smoke or fumes and shut down, tag out, report and record identified abnormalities in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
- 3 Transfer load.
- 3.1 Position boom or jib and hook block over the load as directed by licensed dogger.
 - 3.2 Carry out test lift to allow for checks and adjustments to slinging to be made by licensed dogger.
 - 3.3 Under the direction of the licensed dogger, transfer loads using appropriate crane movements.
 - 3.4 Use radio and interpret hand and whistle signals to communicate with licensed dogger.
 - 3.5 Lower and land load, allowing lifting gear to be disconnected.
- 4 Shut down and secure crane.
- 4.1 Apply hoist, luffing, trolley and travel brakes.
 - 4.2 Shut down crane and place in weather-vane position in accordance with manufacturer requirements.
 - 4.3 Carry out routine shutdown checks, and secure crane and equipment, including cabin, against unauthorised access.
 - 4.4 Exit the crane safely.

- 4.5 Report and record any damage or defects.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLTC4001A Licence to operate a tower crane.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLTC4001 Licence to operate a tower crane

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Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely operating from the cabin, a tower crane with a minimum tower height of 20 m and a maximum rated capacity of at least 3000 kg. The candidate must move four loads of different shapes, sizes and weights in conjunction with a licensed dogger.

For all loads, the candidate must:

- check relevant workplace information, including safe work method statements (SWMSs), and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies
- check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and implement appropriate risk controls and safety measures and equipment
- confirm that load weight is within the rated capacity of the crane
- locate and interpret signs and labels
- check and use safety devices
- lift and move loads using the main hook through an obstacle course including a 90-degree minimum slew, with the load in full view of the candidate and using all crane operational controls:
 - luffing/trolleying levers
 - hoisting and lowering levers
 - slewing levers
 - foot pedals
 - engine speed control

- use two-way radio and interpret hand and whistle signals to communicate with licensed dogger
- implement shutdown procedures.

Movements must include:

- luffing or trolleying
- slewing
- hoisting and lowering.

Loads must include:

- a load of more than 50% of the configured capacity of the crane
- stillage containing at least ten scaffolding standards or loose steel pipes of 200 kg or more that requires a licensed dogger to sling
- an uneven load that requires a licensed dogger to sling
- a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires a licensed dogger to sling.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for operating a tower crane under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in tower crane operations:
 - overhead and underground hazards, including powerlines
 - other cranes and booms
 - other plant
 - obstructions
 - combustible substances, including fuel

- electrical hazards
- insufficient lighting
- traffic
- wind and other adverse weather conditions
- pedestrian traffic
- work required at heights
- risk controls and safety measures and equipment:
 - safety tags on electrical switches and isolators
 - insulated powerlines
 - safety observer
 - exclusion zone
 - disconnected power
 - traffic barricades and controls
 - pedestrian controls
 - movement of obstructions
 - evacuation procedures
 - adequate illumination
 - firefighting equipment, including a fire extinguisher of adequate capacity near the operator's position
 - appropriate earthing for the conditions, such as static electricity build up due to electromagnetic radiation (EMR) or wind
 - fall prevention and fall arrest equipment
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- hand and whistle communication signals:
 - stop
 - hoist up and down
 - luff boom up and down
 - trolley in and out
 - slew left and right
- signs and labels:
 - crane data plates and labels
 - load charts
 - crane decals
 - operational control lever labels
- tower crane safety devices:

- audible and visual devices
- aviation lights
- illumination
- motion limits
- overload limits
- anti-collision devices
- crane controls:
 - luffing levers
 - hoisting and lowering levers
 - slewing levers
 - trolleying levers
 - slew and boom brake and locks
 - foot pedals
 - emergency stop control
 - engine speed control
- crane movements:
 - luffing
 - slewing
 - hoisting and lowering
 - trolleying
- multiple crane communication systems
- processes for responding to unplanned and unsafe situations, including equipment failure or loss of control
- emergency and evacuation procedures, including fire procedures
- shutdown procedures as applicable:
 - raise boom or jib to shutdown position
 - park trolley in shutdown position
 - retract hoist rope and hook block
 - idle engine to stabilise temperature
 - turn off engine
 - place in weather vane mode
 - remove key from ignition
 - isolate electrical supply
 - isolate fuel
 - lock and secure cabin
 - lock and secure platform access hatch
- tower crane characteristics, capabilities and operation to suit loads of different shapes, sizes and weights
- use and interpretation of crane manufacturer specifications, including load charts to enable the crane to be configured within its rated capacity.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- a cabin-operated tower crane with a minimum tower height of 20 m and a maximum rated capacity of at least 3000 kg, which is in a safe and compliant condition
- lifting and other equipment required for operating a tower crane
- risk controls and safety measures and equipment, including a fire extinguisher of adequate capacity near the operator's position
- communication equipment, including whistle and two-way radios
- loads as specified in the Performance Evidence
- licensed dogger to sling and direct loads
- workplace information and records, including:
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including emergency plans
 - equipment manuals and manufacturer specifications.

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