



Australian Government

RIIMPO320 Conduct civil construction excavator operations

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Modification History

Release	Comments
1	This unit of competency was first released in RII Resources and Infrastructure Industry Training Package Release 11.0.

Application

This unit describes the skills and knowledge required to operate an excavator to lift, carry and place materials.

This unit applies to those working in site-based roles.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

No pre-requisite units

Competency field(s)

N/A

Unit sector(s)

Civil infrastructure

Elements and Performance Criteria

Element	Performance criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Required knowledge, skills and application should be considered and clearly articulated.</i>
1. Plan and prepare for excavator operations	1.1 Access and apply relevant safety planning documentation, including safe work method statements (SWMS), job safety analyses (JSA) or equivalents, and safe operating procedures (SOP) or safe working instructions (SWI), in accordance with

	applicable legislation, regulatory requirements and worksite instructions 1.2 Confirm task requirements with site personnel in accordance with worksite instructions 1.3 Identify hazards associated with the worksite and plant, and implement required risk control measures in accordance with work health and safety (WHS) requirements and worksite or manufacturer instructions 1.4 Verify that SWMS/JSA or equivalent control measures are in place and implemented in accordance with WHS requirements and worksite instructions 1.5 Wear designated personal protective equipment (PPE) prescribed by site signage and SWMS/JSA or equivalents after confirming serviceability, in accordance with WHS requirements and worksite or manufacturer instructions 1.6 Establish exclusion zones in accordance with the requirements of the worksite SWMS/JSA or equivalents 1.7 Confirm emergency procedures and prepare for accidents and emergencies in accordance with WHS requirements and worksite or manufacturer instructions 1.8 Verify that services have been identified to the required level and that control measures are in place when operating near services, in accordance with relevant Australian Standards, applicable legislation, regulatory requirements and utility service requirements 1.9 Check and confirm that machine servicing status is within the required service interval prior to commencing work, in accordance with WHS requirements and worksite or manufacturer instructions
2. Conduct pre-operational checks	2.1 Conduct prestart and start-up checks and complete a walkaround in accordance with worksite requirements or manufacturer instructions 2.2 Check that the level of critical fluids meets the manufacturer and site requirements 2.3 Check fuel, hydraulic, and coolant lines are secure, undamaged and free from contact with moving parts in accordance with manufacturer requirements 2.4 Check that fire suppression system is operational, where fitted, in accordance with WHS requirements and worksite or manufacturer instructions

	2.5 Confirm that the machine's safety equipment is present and within service dates in accordance with WHS requirements and worksite or manufacturer instructions 2.6 Test communication devices for correct operation in accordance with WHS requirements and worksite or manufacturer instructions 2.7 Rectify faults within scope of own responsibility or report faults in accordance with WHS requirements and worksite or manufacturer instructions
3. Select, fit, test and use attachments	3.1 Select attachment rated for the load and task in accordance with manufacturer instructions 3.2 Fit attachment in accordance with workplace procedures 3.3 Test attachments and confirm correct fitting and operation in accordance with worksite or manufacturer instructions 3.4 Use attachments within design limits and in accordance with worksite instructions
4. Work safely in proximity to powerline infrastructure	4.1 Identify powerline infrastructure relevant to the worksite in accordance with applicable legislation, regulatory requirements and worksite instructions 4.2 Determine and apply minimum approach distances relevant to the work to be performed in accordance with applicable legislation, regulatory requirements and worksite instructions 4.3 Assess work to identify potential encroachment within minimum approach distances and implement required controls in accordance with applicable legislation, regulatory requirements and worksite instructions 4.4 Identify and implement risk control measures within scope of own authority in accordance with worksite safety planning document and worksite instructions 4.5 Discuss safety observer role and responsibilities as per site requirements with relevant personnel including safety observer in accordance with worksite requirements
5. Operate machine in line with established requirements	5.1 Operate the machine using techniques that maintain control and stability in accordance with WHS requirements and worksite or manufacturer instructions 5.2 Control speed in accordance with site limits, road conditions, and load weight in accordance with WHS requirements and worksite or manufacturer instructions

	5.3 Steer smoothly and avoid excessive manoeuvring, particularly on slopes and uneven ground in accordance with WHS requirements and worksite or manufacturer instructions 5.4 Activate or monitor safety features to respond appropriately to site and ground conditions in accordance with WHS requirements and worksite or manufacturer instructions 5.5 Maintain safe distances and adjust operation for visibility and surface conditions 5.6 Respond appropriately to the machine's indications and alarms in accordance with manufacturer instructions 5.7 Remain aware of surroundings and respond appropriately to changing environmental, surface or operational conditions in accordance with WHS requirements and worksite instructions 5.8 Maintain communication with site personnel to remain aware of site activity and avoid collisions or traffic conflicts 5.9 Maintain required safe distances from overhead and underground services in accordance with state or territory requirements 5.10 Operate within the equipment's operating limitations in accordance with manufacturer instructions 5.11 Minimise environmental impact in accordance with applicable legislation, regulatory requirements and worksite instructions
6. Lift/load, secure, carry and place materials to complete work activity	6.1 Position the machine on stable ground at a safe distance from hazards or restricted zones in accordance with WHS requirements and worksite instructions 6.2 Check and verify that loads do not exceed the machine's Safe Working Load (SWL) or other manufacturer specified operating limits in accordance with manufacturer instructions 6.3 Use attachments rated for the load and task in accordance with manufacturer instructions 6.4 Operate the machine at a speed that suits site conditions in accordance with worksite instructions 6.5 Load, lift, secure, carry and place material as required while maintaining communication with others in accordance with worksite instructions
7. Use spreading and levelling techniques	7.1 Plan and sequence spreading and levelling tasks based on ground conditions and site specifications in accordance with worksite instructions

	7.2 Use machine controls to achieve a uniform grade or level surface within required tolerances in accordance with site specifications and worksite instructions 7.3 Verify levels using appropriate tools and make required corrections in accordance with site specifications and worksite instructions 7.4 Finalise levelling activities in accordance with site specifications and worksite instructions 7.5 Make accurate initial passes by controlling depth, attachment angle and alignment with site reference points or levels in accordance with worksite instructions
8. Park up, shutdown and secure the excavator	8.1 Secure any attachments before relocating the machine in accordance with manufacturer instructions 8.2 Relocate machine safely to designated area in accordance with site requirements 8.3 Park the machine on level, stable ground, where possible in accordance with worksite instructions 8.4 Remove, clean and store attachments in designated location in line with workplace procedures 8.5 Lower all raised equipment if fitted, neutralise controls and shut down the engine in accordance with manufacturer instructions 8.6 Engage park braking systems and/or disengage hydraulic controls in accordance with manufacturer instructions
9. Conduct housekeeping activities	9.1 Complete post-operational checks and record or report faults or defects in line with worksite requirements 9.2 Clear work area and dispose of or recycle materials in accordance with worksite requirements 9.3 Clean or arrange for the machine to be cleaned in accordance with manufacturer or worksite requirements 9.4 Secure tools and attachments in accordance with manufacturer requirements

Range of conditions

N/A

Assessment Requirements for RIIMPO320 Conduct civil construction excavator operations

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of excavator operations that safely, effectively and efficiently follows workplace procedures to carry out work activity:

- on at least **two** occasions; and
- on **each** occasion the candidate must use at least **two** different material types; and
- on **each** occasion the candidate must complete **two** different activities from the following:
 - loading, cutting/boxing
 - stripping/spreading
 - lifting and carry materials
 - bulk excavation
 - mixing/backfilling
 - trench excavation
 - stockpiling
 - battering
 - benching
 - site clean up
- and across those occasions the candidate must select, fit, test, use and remove at least **two** attachments, each of which must be certified and approved in line with workplace procedures.

Attachments may include, but are not limited to, the following:

- tilt bucket
- buckets
- lifting device
- vibrating compaction wheel
- ripper/tyne
- compaction plate
- compaction wheel
- rock breaker

- auger
- ground engaging tools.

In the course of the above work the candidate must also:

- conduct prestart checks prior to commencing operations and shutdown procedures on completion of operations
- manage the risks of overhead power lines, including:
 - assessing the work for potential encroachment by person(s) into the minimum approach distance(s)
 - determining communication method with safety observer, if required, as per workplace requirements
 - confirming safety observer, if required, is in position as per workplace requirements
 - drive and operate the equipment, and adjust techniques to site conditions
- complete operations to specification using at least two different material types and activities including:
 - park and secure equipment
 - follow policies and procedures
 - wear personal protective equipment (PPE) as per site requirements
 - carry out vehicle refuelling procedures as required
 - apply safe work practices
 - monitor and manage equipment performance using indicators and alarms
 - apply levelling techniques
 - working within SWL
 - select and use the required tools and equipment
 - change machine attachments where required
 - enter and exit the machine using three point of contact technique
 - use a range of communication techniques and equipment essential to the safe completion of work activity
 - meet reporting requirements and procedures associated with equipment operations
 - arrange work activities to meet all task requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- key policies and procedures, legislation and established requirements for excavator operations, including those relating to:
 - machine isolation requirements
 - responding appropriately to accidents and emergencies
 - work health and safety, including signs of operator fatigue and management
 - handover requirements
 - basic equipment faults
 - housekeeping activities including disposal of waste
 - machine guidance systems
- codes of practice or compliance codes and safe work practices for managing the risks of overhead power lines, including:
 - minimum approach distances
 - No Go Zones
 - safety observer's role and responsibilities and appropriate communication methods
 - impact of contact with the powerline infrastructure
- key factors affecting work activities described in performance evidence above, including:
 - equipment technical capability and limitations
 - ground conditions impacting machine operations
 - determining safe working loads of the machine with specific work tasks
 - Safe work instructions for sloping and benching
 - requirements and procedures for selecting personal protective (PPE), checking PPE serviceability, and ensuring correct fit
- key features associated with civil construction works, including:
 - basic principles of material technology and compaction
 - basic earthworks calculations
 - civil construction activity sequences.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - excavator
 - attachments
 - materials

- personal protective equipment (PPE)
- be conducted in a safe environment; and,
- be assessed in context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Assessor Requirements

In addition to the requirements in applicable vocational education and training legislation, frameworks and/or standards, assessors and industry experts must also have a minimum of two (2) years industry experience, directly relevant to the training and assessment being provided.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

Unit Mapping Information

Previous Code and Title	Equivalence	Comments
RIIMPO320F Conduct civil construction excavator operations	Equivalent	Supersedes and is equivalent.

Links

Companion volumes, including implementation guides, are found on the national training register - <https://training.gov.au/training/details/RII>.