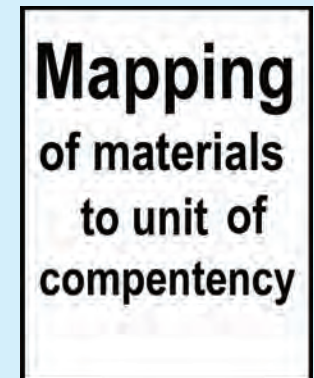
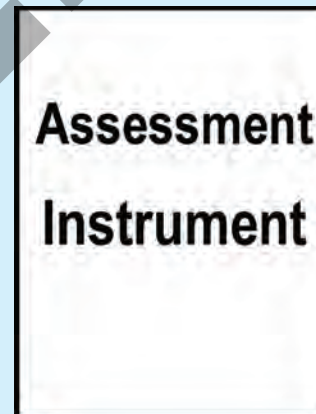
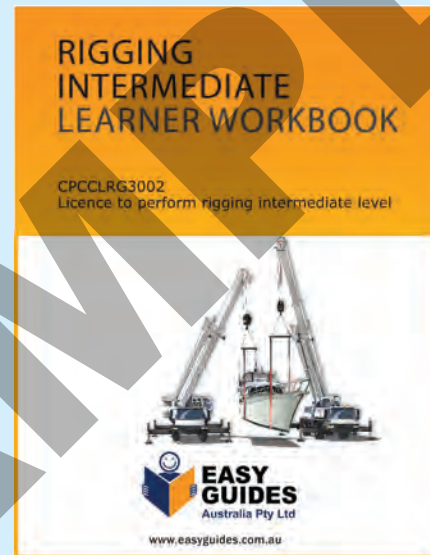


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Training support material for:

RIISAM204E

Operate small plant and equipment

Produced by:



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PREPARE FOR OPERATING SMALL PLANT AND EQUIPMENT

Element 1



Introduction

Operating small plant and equipment efficiently and safely is crucial in various industries, including construction, landscaping, maintenance, and more. Proper preparation and understanding of the equipment are essential to make sure of smooth operations, minimise risks, and achieve optimal results. Here are some key steps to consider when preparing for and operating small plant and equipment:

- Read the manual and familiarise yourself with the equipment
- Do a pre-use inspection
- Check fuel, fluids and batteries
- Wear personal protective equipment (PPE)
- Make sure the work area is suitable
- Understand the operating controls
- Follow safe operating procedures
- Communicate with others you may be working with
- Check equipment during use
- Clean and maintain equipment after use.



1. What types of small plant and equipment are used in this unit of competency?

Generally, 2-3 pieces of small plant and equipment will be used in training. On-site training can be customised to specific items of small plant and equipment. Training can include but is not limited to:



Road saws: Road saws, also known as concrete saws or asphalt saws, are powerful cutting machines used in construction and road maintenance. They are typically equipped with a large circular blade with diamond or abrasive teeth and are designed to cut through concrete, asphalt, and other hard surfaces. Road saws are commonly employed to create expansion joints, remove damaged sections of pavement, or cut trenches for installing utility lines.



Brick / masonry saws: Brick or masonry saws are specialized cutting tools used for precision cutting of bricks, blocks, tiles, and other masonry materials. These saws typically have a diamond blade specifically designed for cutting through hard materials like concrete, stone, and ceramics. They are commonly used in construction, masonry work, and tile installation to achieve accurate cuts for fitting bricks or blocks in various applications. Brick or masonry saws may come in different sizes and configurations, including handheld models or larger, stationary saws for more heavy-duty cutting tasks.

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Compressors: A compressor is a device or machine used to increase the pressure of a gas or air by reducing its volume. It is commonly used in various industries, including manufacturing, refrigeration, air conditioning, and power generation. Compressors are essential components in systems where the compression of gases is required for different purposes.



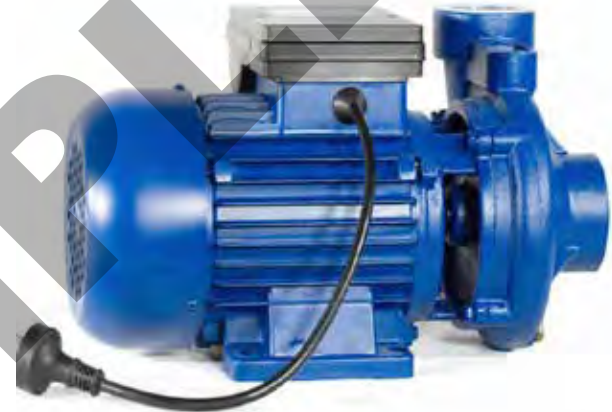
Generators: A generator is a device that converts mechanical energy into electrical energy. It is commonly used to produce electricity when a reliable power source is unavailable or as a backup power supply in case of power outages. Generators are widely used in various applications, including residential, commercial, and industrial settings.

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Concrete mixers: A concrete mixer is a machine or device used to mix cement, aggregates (such as sand or gravel), and water to create concrete. Concrete mixers are commonly used in construction projects, including building construction, road construction, and infrastructure development.



Pumps: Pumps are mechanical devices used to move fluids (liquids or gases) from one place to another. They are commonly used in a wide range of applications, including water supply systems, wastewater treatment, oil and gas production, chemical processing, and various industrial processes.

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Compaction equipment: Compaction equipment refers to a range of machines and tools used to compact or densify various materials, such as soil, asphalt, concrete, and aggregates. Compaction is the process of reducing air voids and increasing the density of a material, which improves its stability, strength, and load-bearing capacity. Compaction equipment is commonly used in construction, road building, landscaping, and other related industries.



Excavation equipment: Excavation equipment refers to machinery and tools used for digging, moving, and removing earth or other materials during excavation and earthwork operations. Excavation is a fundamental process in construction, landscaping, mining, and other industries that involves the removal of soil, rocks, or other materials to create trenches, foundations, ditches, or excavated areas.

Continued next page...

2. What are some examples of maintenance equipment when using small plant and equipment?

Screwdrivers: Tools used for tightening or loosening screws and fasteners.

Pliers: Handheld tools for gripping, bending, and cutting wires or small objects.

Wrenches: Tools for turning nuts and bolts to tighten or loosen them.

Hammers: Used for driving nails or striking objects in maintenance work.

Spanners: Similar to wrenches, but with fixed jaws for specific-sized nuts and bolts.

Saws: Cutting tools for various materials like wood, plastic, or metal during repairs.

Tape measure: A flexible ruler for measuring distances in maintenance tasks.

Spirit level: A tool to check if surfaces are level or plumb during installations or adjustments.

Safety goggles: Protective eyewear to prevent eye injuries while working with tools.

Gloves: Safety gloves to protect hands from cuts, abrasions, or chemicals during maintenance work.



6. What are some examples of small plant and equipment working with clay, silts, stone, gravel, mud, rock and topsoil?

Clay: Clay Mixer

A clay mixer is a small machine used to blend and mix clay with water and other additives to create a consistent and workable clay mixture. This equipment is essential in pottery and ceramics to prepare the clay before shaping it into various forms.



Silts: Silt Fence Installer

A silt fence installer is a small piece of equipment used to install silt fences. Silt fences are temporary barriers made of geotextile fabric used to control erosion and retain sediment (including silts) on construction sites. The installer helps secure the silt fence in place to prevent sediment runoff.



Stone: Stone Masonry Hammer

A stone masonry hammer, also known as a brick hammer or rock hammer, is a small handheld tool used by masons to shape and split stones. It has a chisel-like end for cutting and shaping stone, making it essential for working with stone in construction or artistic projects.



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Gravel: Vibratory Plate Compactor

A vibratory plate compactor is a small machine used to compact gravel and other granular materials, creating a more stable and solid surface. It's commonly used in road construction, landscaping, and other applications where compacted gravel is needed.



Mud: Mud Mixer

A mud mixer is a small device used to mix mud, which typically consists of soil, water, and sometimes additives, to create a slurry-like substance. This mixture is used in various applications, including construction, drilling, and even in some agricultural practices.



Rock: Rock Drill

A handheld rock drill is a small, portable drilling machine used for drilling holes in rock, such as for mining, quarrying, or geological exploration. It's an essential tool for working with hard rock surfaces.



Topsoil: Topsoil Screener

A topsoil screener is a small machine designed to sift and separate topsoil from larger debris like rocks and sticks. It's commonly used in landscaping and construction to ensure that the topsoil used for planting is free of unwanted materials.

Choose and wear personal protective equipment (PPE)

It is important to wear the correct PPE to keep you safe and protected. Here are some examples:

Here are some typical tools and equipment you might need.



11. How do you check for faults in small plant and equipment?

Conduct a visual inspection, checking for visible damage, wear and tear, loose connections, or missing parts.

Make sure the equipment is properly connected to a suitable power source and examine the power cord for any damage.

Check to the user manual or manufacturer's instructions for guidance on common issues and troubleshooting steps.

Test the equipment's functions and features individually to make sure of proper operation.

Check the functionality of safety features like guards, emergency stop buttons, and thermal overload protection.

Check calibration or use reference equipment to ensure accurate measurements, if applicable.

Inspect fluid levels, look for leaks, and ensure they are within recommended ranges.

Check wearable parts and replace or repair any that are worn out or damaged.

Test the equipment under realistic load conditions for performance evaluation.

Keep proper documentation of inspections, maintenance, and repairs for future reference and troubleshooting purposes.



CONDUCT PRE-OPERATIONAL CHECKS



Element 2

60 WEEKS
Pages in triplicate

For users of light and medium sized machinery



14. What fuel and lubricants might you use to operate small plant and equipment?

Fuel: Fuel is what powers the equipment and makes it work. Common fuels for small plants and equipment include petrol and diesel.

Petrol is often used for smaller engines, like those found in lawnmowers or chainsaws.

Diesel fuel is commonly used for larger equipment, such as generators or construction machinery. These fuels are flammable liquids that burn inside the engine to produce the energy needed for the equipment to function.

Lubricants: Lubricants are substances that reduce friction and wear between moving parts in the equipment. They help the components move smoothly and prevent them from overheating or getting damaged.

The specific lubricants used depend on the type of equipment, but some common ones include motor oil, grease, and hydraulic fluids.

Motor oil is used in engines to lubricate the internal parts. Grease is a thicker lubricant that is applied to joints and bearings. Hydraulic fluids are used in hydraulic systems to transmit force and provide lubrication.



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Once the equipment starts, listen for strange sounds or vibrations.

Test the different controls and functions to make sure they work correctly.

Check that all safety features, like emergency stop buttons or kill switches, are working.

Shut-Down Procedure:

Cooling Down: If needed, let the equipment run at a slow speed for a few minutes to cool down. Follow the instructions from the manufacturer.

Turning Off: Switch off any power switches or controls that are running the equipment.

Turn off the ignition or any fuel valves, depending on the type of equipment.

Post-Shut-Down Inspection: After turning off the equipment, check for any leaks, loose parts, or signs of damage.

Clean the equipment if necessary and store it properly.



USE SMALL PLANT AND EQUIPMENT

Element 3



19. How can you identify hazards when operating small plant and equipment?

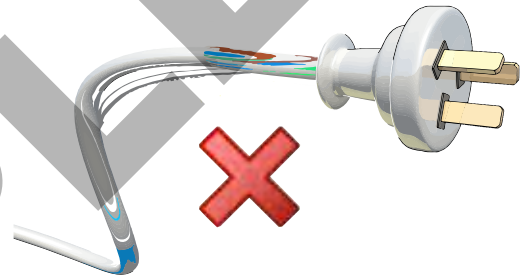
Conduct a pre-operational inspection: Check for visible defects, damage, or wear and tear. Check for loose or missing parts, leaking fluids, frayed cables, or any other signs of potential hazards.

Read the manufacturer's instructions and safety guidelines: Pay attention to any specific hazards associated with the equipment.

Identify electrical hazards: If the equipment is powered by electricity, check for any exposed wires, damaged cords, or faulty electrical connections. Make sure that electrical outlets and connections are properly grounded and that circuit breakers or fuses are in good working condition.

Check the working environment: Consider the surroundings in which the equipment will be used. Look for potential hazards such as uneven terrain, obstacles, overhead power lines, or other structures that could pose a risk during operation. Identify areas with poor lighting, ventilation, or restricted access that could impact safe operation.

Evaluate ergonomic factors: Assess the ergonomics of the equipment to identify potential hazards related to repetitive or awkward movements, excessive vibrations, noise levels, or inadequate operator protection.



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21. How can you get optimum output but stay within specified tolerances?

Understand the specifications: Familiarise yourself with the specified tolerances and performance requirements for the equipment. This ensures you have a clear understanding of the desired output.

Properly calibrate the equipment: Make sure that the equipment is calibrated correctly according to the manufacturer's guidelines. Calibration helps maintain accuracy and ensures that the output aligns with the desired tolerances.

Perform regular maintenance: Follow a scheduled maintenance routine to keep the equipment in good working condition. Regular inspections, lubrication, and component replacements can prevent deviations from the specified tolerances.

Use the appropriate settings and adjustments: Set the equipment to the recommended parameters for the desired output. Adjust settings such as speed, pressure, or temperature according to the specifications to achieve optimum performance.

Monitor and control variables: Continuously monitor and control variables such as material inputs, environmental conditions, or process parameters. This allows you to make adjustments in real-time and ensure that the output remains within the specified tolerances.



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Implement quality control measures: Do quality control checks during the production process. Inspect samples or conduct tests to verify that the output meets the specified tolerances. Identify and fix any deviations at once.

Train operators effectively: Provide proper training to operators on the correct operation of the equipment. Ensure they understand the specified tolerances, the impact of their actions on output quality, and how to make necessary adjustments.

Document and analyse performance data: Keep records of the equipment's performance, including output measurements, adjustments made, and any deviations from the specified tolerances.

Communicate and collaborate with stakeholders: Maintain open communication with supervisors, quality control personnel, and other relevant stakeholders. Share feedback, discuss challenges, and work together to optimise output while staying within specified tolerances.

By following these guidelines, you can maximise the output of small plant and equipment while ensuring that the final results meet the specified tolerances and quality requirements.



22. How can you operate small plant and equipment to produce results within specified workplace tolerances?

Familiarise yourself with the equipment: Understand its components, functions, and any safety guidelines associated with it.

Read instructions and guidelines: Carefully read and understand the operating instructions and guidelines provided by the manufacturer.

Prepare the equipment: Before using the equipment, make sure it is clean, well-maintained, and in proper working condition. Check for any defects or damage that may affect its performance.

Safety first: Always prioritise safety. Wear appropriate personal protective equipment (PPE) such as helmets, gloves, goggles, or any other gear recommended for the specific equipment and task. Make sure the area is clear of obstacles or hazards that could cause accidents.

Follow correct procedures: Operate the equipment according to the correct procedures outlined in the instructions. Take note of any specific settings, adjustments, or controls required for the desired outcome.



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Practice control and precision: Pay attention to details and exercise control over the equipment. Use the appropriate force, speed, or pressure as needed to achieve the desired outcome while staying within the specified workplace tolerances.

Monitor and adjust: Continuously check the performance of the equipment and the results it produces. If necessary, make adjustments to settings or techniques to make sure the output meets the specified tolerances.

Regular maintenance: Maintain the equipment regularly by following the manufacturer's recommendations. This may include cleaning, lubricating, or replacing parts as needed. Well-maintained equipment performs better and produces more consistent results.

Get help if needed: If you have difficulties or are unsure about any aspect of operating the equipment, get help from a supervisor, workmate, or someone experienced in using that specific equipment.

Record and report: Keep a record of any issues, malfunctions, or maintenance performed on the equipment. Report any concerns to the appropriate personnel to ensure proper maintenance and troubleshooting.



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Store them off the ground: Whenever possible, avoid storing the items directly on the ground. Use shelves, pallets, or racks to elevate them and protect against moisture or potential floor damage. This also helps in organizing the storage area more efficiently.

Consider climate control: If your small plants and equipment are sensitive to temperature or humidity, consider storing them in a climate-controlled environment. Extreme temperature changes or high humidity can cause damage, so maintaining a stable environment can help preserve the items' quality.

Secure the storage area: If the items are valuable or require extra security, ensure the storage area is locked or restricted to authorized personnel only. This prevents unauthorised access and reduces the risk of theft or damage.

Regular maintenance checks: Even when not in use, periodically check your stored small plants and equipment for any signs of deterioration, pests, or moisture buildup. This helps identify any issues early on and allows for necessary maintenance or repairs.

By following these simple steps, you can store your small plants and equipment safely, keeping them in good condition and ready for future use.



CARRY OUT OPERATOR MAINTENANCE



...Continued from previous page

Follow Safety Procedures: Emphasise adherence to safety protocols, including lockout/tagout procedures and the use of personal protective equipment (PPE).

Cool Down (if applicable): If the equipment was in use before maintenance, allow it to cool down before starting any work.

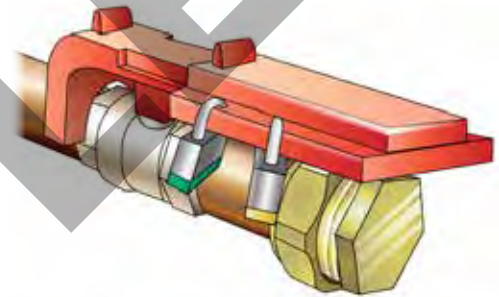
Document Equipment Condition: Take note of the current condition of the equipment, including any visible issues or concerns that need attention.

Assign Responsibilities: Assign specific tasks to the maintenance team members to ensure an organized and efficient process.

Coordinate with Vendors (if necessary): If the equipment is under warranty or requires specialised expertise, coordinate with vendors or technicians for assistance.

Backup Data (if applicable): If the equipment contains data or settings that could be lost during maintenance, ensure proper backups are made.

Communicate with Users: Inform users or relevant departments about the upcoming maintenance, outlining any potential downtime or alternative arrangements.



CONDUCT HOUSEKEEPING ACTIVITIES



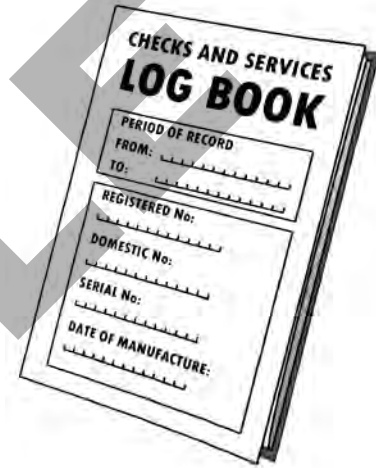
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Document the Issue: Keep a record of the issue, including the date, time, location, and description of the problem. This documentation can be useful for future reference or insurance purposes.

Follow Reporting Procedures: If your workplace has specific protocols for reporting equipment issues, make sure to follow them accordingly. This makes sure that the problem is addressed in a timely and organised manner.

Recommendations for Improvement: If you notice recurring issues or have suggestions to improve equipment performance, share them with your supervisor or management. Your insights can contribute to better maintenance practices.

Avoid Making Repairs Yourself: Unless you are trained and authorized to perform equipment repairs, avoid attempting to fix the issue yourself. Unauthorised repairs can void warranties and may lead to further problems.



30. What written records and reports do you need to do?

When using small plant and machinery, it's important to keep written records and reports.

Maintenance Records: Keep a record of all maintenance tasks you perform on the equipment. Note down the date, type of maintenance, and any parts replaced or repaired.

Inspection Reports: After inspecting the equipment, write a report detailing its condition. Note any issues, damages, or signs of wear you observed.

Accident Reports: If there's an accident or near-miss involving the equipment, create an accident report. Describe what happened, who was involved, and any injuries or damages.

Equipment Logs: Maintain a log that tracks when the equipment was used, who used it, and for what purpose. This helps monitor usage and identify patterns.

Fuel and Fluid Usage: If the equipment runs on fuel or fluids, keep track of the amount used and when it was refueled or replenished.

MAINTENANCE RECORD		
DATE	BY	NEXT DUE

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USE HAND AND POWER TOOLS

Learner Workbook STUDENT COPY

RIISAM204E –
Operate small plant and equipment



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SAMPLE

Knowledge Assessment



The assessor must be satisfied the candidate has successfully demonstrated each element and performance criteria contained in the Unit of Competency.

Knowledge Assessment Instructions



1. This assessment should be completed in writing (pen not pencil). However, where necessary it may be undertaken verbally. If verbal assessment is undertaken the candidates' responses must be clearly recorded by the assessor. The assessor must clearly note on the assessment that it was undertaken verbally.
2. Candidates should be allowed 10 minutes reading time before commencing the assessment and a further 180 minutes to complete the assessment.
3. The assessment should be completed in a quiet area free from distraction.
4. The assessment is to be completed without the assistance of learning resources. Students may ask the assessor for assistance to clarify questions they do not understand.
5. A pass mark of 90% (27/29) must be achieved for a satisfactory result. The assessor must provide feedback to the candidate to clarify any answers deemed to be incorrect.
6. Reasonable adjustment to the assessment is to be made by the assessor where deemed necessary.
7. This Workbook forms formative assessment. It is OPEN BOOK and students may refer to the Learner Guide when completing the workbook.





1. Prepare for operating small plant and equipment





Question 1 (PC 1.1)	
1. What types of small plant and equipment are used in this unit of competency?	

Question 2 (PC 1.1)	
What are some examples of maintenance equipment when using small plant and equipment?	

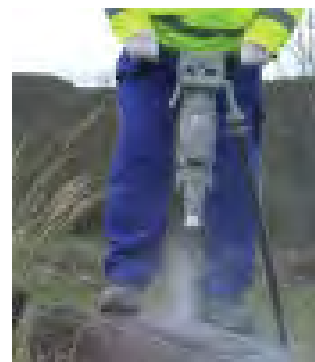
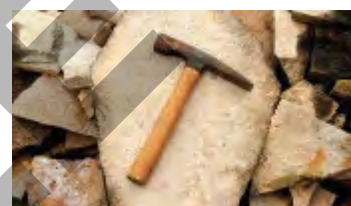
Question 3 (PC 1.1, 1.5)	
What are some examples of power sources when using small plant and equipment?	
	


Question 4 (PC 1.1, 1.5)	
What are key operating techniques when using small plant and equipment?	
	


Question 5 (PC 1.1, 1.5)	
When operating small plant and equipment, what are some examples of material types, characteristics, technical capabilities and limitations, including water, bituminous mixes, timber, fuels and oils and power leads?	
	 


Question 6 (PC 1.1)


What are some examples of small plant and equipment working with clay, silts, stone, gravel, mud, rock and topsoil?





Question 7 (PC 1.1)	
How do I get, understand and check on work requirements?	
	

Question 8 (PC 1.2)	
How do I get documentation and procedures for the job?	
	

Question 9 (PC 1.3)	
What environmental issues may I need to plan for?	
	

Question 10 (PC 1.4)	
What are some examples of ppe you would wear when operating small plant and equipment?	
	

Question 11 (PC 1.5)	
How do you check for faults in small plant and equipment?	
	

Question 12 (PC 1.5)	
How do you make sure you have the right equipment for the activity?	
	

3. Use small plant and equipment



Question 19 (PC 3.1)



How can you identify hazards when operating small plant and equipment?




Question 20 (PC 3.1)

How can you identify and control risks when operating small plant and equipment?



Question 21 (PC 3.2)	
How can you get optimum output but stay within specified tolerances?	
	 

Question 22 (PC 3.3)	
How can you operate small plant and equipment to produce results within specified workplace tolerances?	
	

Question 23 (PC 3.4)	
How can you store small plant and equipment safely when not in use?	

4. Carry out operator maintenance



Question 24 (PC 4.1)	
How can you get small plant and equipment ready for maintenance?	
	 

Practical Assessment



The assessor must be satisfied the candidate has successfully demonstrated each element and performance criteria contained in the Unit of Competency.

It is the assessor's responsibility to decide if the candidate has competently demonstrated a skill. The assessor may question a candidate further if their demonstration needs clarification.



Practical assessment instructions



Practical assessment should be performed in a normal working environment where possible. However, under some circumstances may occur in a simulated work environment (refer to assessment conditions for further information).

The Assessor must:

- Clearly explain to the candidate what is expected of them
- Check that the candidate has been provided with the necessary tools and equipment
- Complete checklists as the candidate goes through the tasks
- Only question a candidate during a practical task if it is safe to do so
- Stop the assessment immediately if the candidate is doing something dangerous
- Stop the assessment immediately if the machine or objects are likely to be damaged
- Inform the candidate of the result of the assessment.

If an assessor needs to stop the assessment because of danger or possible damage, the candidate must be marked as not yet competent. If the assessment is stopped, further training would need to take place before a re-assessment can be undertaken.

Tasks in the assessment do not have to be assessed in isolation they may be done as one continual task.

Assessment Guidelines

This assessment is designed to be used with the learning materials developed by Easy Guides Australia. The assessor must be satisfied the applicant has successfully demonstrated each aspect of the Unit of Competency. The answers provided are model answers only. The written assessment determines the candidate's underpinning knowledge.

This assessment can be customised to suit your requirements. When customising this assessment, you must ensure all performance criteria and knowledge evidence are addressed to maintain the integrity of the assessment.

Reasonable adjustments to assessments should be made to accommodate candidates with special needs.

Practical assessment tasks.



The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

Operate small plant and equipment on at least **two different occasions**, including:

- conducting pre-operational checks
- identifying and managing site hazards
- identifying and using correct operating techniques to achieve optimum output while maintaining specified tolerances
- correctly storing equipment
- completing operator maintenance
- clearing the work area.

During the above, the candidate must:

- locate and apply required documentation, policies and procedures and confirm that the work activity is compliant
- implement the requirements, procedures and techniques required to operate small plant and equipment
- work with others to undertake the operation of small plant and equipment
- communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities.

Assessment scenario – Making a path

The following three tasks use small plant and equipment to make a path. First the topsoil is removed to prepare the area for the concrete pavers. Secondly the crushed stone is flattened using a compactor. Finally the concrete pavers are cut to size where needed using a brick / masonry saw.



Practical Assessment Task 1 – Making a path (Part A)

Excavation equipment

Excavation equipment: Excavation equipment refers to machinery and tools used for digging, moving, and removing earth or other materials during excavation and earthwork operations. Excavation is a fundamental process in construction, landscaping, mining, and other industries that involves the removal of soil, rocks, or other materials to create trenches, foundations, holes, ditches, or excavated areas.



TASK

You have a mini loader. Your job is to remove 150 mm of topsoil ready for the crushed rock. Your trainer will provide a supply of PPE for you to choose from. The mini loader will be supplied. Your trainer will show you the area where the job is to be done. Once the excavation is complete a 100 mm layer of crushed rock can be put into position.

Your trainer will check that you:

- locate and apply required documentation, policies and procedures and confirm that the work activity is compliant
- communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities (if applicable)
- conduct pre-operational checks
- identify and manage site hazards. Explain hazard/s and controls.
- wear appropriate PPE
- identify and use correct operating techniques to achieve optimum output while maintaining specified tolerances
- work with others to undertake the operation of small plant and equipment (if applicable)
- complete operator maintenance (if needed).
- correctly store equipment
- clear the work area.

The applicants' performance in the Practical Assessment was deemed to be:

Satisfactory

Not yet satisfactory

Applicant signature:

Date:

Trainer/assessor signature:

Date:

Assessment Summary – Competency Sign Off

Written / Practical Assessment Summary		Satisfactory	Not Satisfactory
Knowledge Assessment		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 1 – Making a path (Part A)		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 2 – Making a path (Part B)		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 3 – Making a path (Part C)		<input type="checkbox"/>	<input type="checkbox"/>
Optional Task			
Practical Assessment Task		<input type="checkbox"/>	<input type="checkbox"/>
Competency:		Not Yet Competent <input type="checkbox"/> Date _____	Competent <input type="checkbox"/> Date _____
Feedback to be given to candidate or to workplace supervisor			
Trainer / Assessor signature: Date:		The learner has been assessed as <input type="checkbox"/> Not Yet competent / <input type="checkbox"/> competent in the elements and performance criteria, critical aspects for assessment, required skills and knowledge for this unit and the evidence presented is: <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/> Current <input type="checkbox"/> Sufficient	

USE HAND AND POWER TOOLS

Learner Workbook

TRAINER'S MARKING GUIDE

RIISAM204E –

Operate small plant and equipment



This resource was developed by

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1. Prepare for operating small plant and equipment



Question 1 (PC 1.1)

1. What types of small plant and equipment are used in this unit of competency?

Answer may include but is not limited to:

- road saws
- brush cutters
- whipper snippers
- concrete mixers
- pumps
- lifting equipment
- lighting equipment

- brick / masonry saws
- pressure cleaners
- industrial wet and dry vacuum cleaners
- lawn mowers
- wheel barrows
- compressors
- generators
- compaction equipment
- excavation equipment



Question 2 (PC 1.1)

What are some examples of maintenance equipment when using small plant and equipment?

Answer may include but is not limited to:


- **Screwdrivers:** Tools used for tightening or loosening screws and fasteners.
- **Pliers:** Handheld tools for gripping, bending, and cutting wires or small objects.
- **Wrenches:** Tools for turning nuts and bolts to tighten or loosen them.
- **Hammers:** Used for driving nails or striking objects in maintenance work.
- **Spanners:** Similar to wrenches, but with fixed jaws for specific-sized nuts and bolts.
- **Saws:** Cutting tools for various materials like wood, plastic, or metal during repairs.
- **Tape measure:** A flexible ruler for measuring distances in maintenance tasks.
- **Spirit level:** A tool to check if surfaces are level or plumb during installations or adjustments.
- **Safety goggles:** Protective eyewear to prevent eye injuries while working with tools.



<ul style="list-style-type: none"> • Gloves: Safety gloves to protect hands from cuts, abrasions, or chemicals during maintenance work. 	
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Question 3 (PC 1.1, 1.5)


What are some examples of power sources when using small plant and equipment?


<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Batteries: Small plant and equipment can be powered by batteries, which provide electrical energy to run devices like cordless drills, flashlights, or small electronic tools. • Electricity: Many small plant and equipment can be directly connected to electrical outlets using power cords to draw electricity for their operation. • Fuel: Some small plant and equipment, like chainsaws, lawnmowers, or small generators, use fuel, such as gasoline or diesel, to power their engines. • Compressed Air: Certain tools, like pneumatic drills or air compressors, use compressed air as a power source to operate. • Solar Power: Some modern small equipment may have built-in solar panels to harness sunlight and convert it into electrical power for their operation. • Hydraulic Power: Hydraulic systems can power certain small plant and equipment, using pressurized fluids to generate mechanical force for specific tasks. 	
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Question 4 (PC 1.1, 1.5)


What are key operating techniques when using small plant and equipment?



<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Read the Manual: Always read and understand the equipment's instructions before using it. • Safety First: Wear safety gear and prioritise safety during operation. • Inspect Before Use: Check the equipment for damage or issues before starting. • Proper Training: Only trained operators should use the equipment. Use Correctly: Use the equipment only for its intended purpose. Keep Maintained: Regularly maintain and inspect the equipment. Shutdown Safely: Turn off the equipment properly after use. • Be Aware: Pay attention to your surroundings and potential hazards. • Emergency Preparedness: Know how to stop the equipment in emergencies. 	
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Question 9 (PC 1.3)	
What environmental issues may I need to plan for?	
<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Noise pollution: Plan for the potential impact of loud equipment on nearby areas and implement noise reduction measures. • Air pollution: Ensure compliance with emission standards and take steps to minimize air pollutants from equipment. • Soil and water contamination: Prevent spills and leaks of chemicals, fuels, or lubricants to avoid soil and water contamination, and adopt proper storage and disposal practices. • Waste management: Implement effective waste management practices to handle packaging, debris, and hazardous materials generated by the equipment. • Energy consumption: Consider energy-efficient equipment and practices to reduce greenhouse gas emissions and energy consumption. • Habitat disturbance: Identify and protect natural habitats or sensitive ecosystems from disruption caused by equip 	

Question 10 (PC 1.4)	
What are some examples of ppe you would wear when operating small plant and equipment?	
<p>Answer may include but is not limited to:</p> <p>Safety helmet: Protects your head from falling objects or potential head injuries.</p> <p>Safety glasses or goggles: Shields your eyes from flying debris, dust, or chemicals.</p> <p>Earplugs or earmuffs: Reduces the risk of hearing damage from loud equipment or noise exposure.</p> <p>Respiratory protection: Masks or respirators may be required to protect against harmful dust, fumes, or airborne particles.</p> <p>Gloves: Protects your hands from cuts, abrasions, or exposure to chemicals, oils, or other hazardous substances.</p> <p>Safety boots or steel-toed shoes: Provides foot protection against heavy objects, sharp materials, or potential crushing hazards.</p> <p>High-visibility vest or clothing: Enhances visibility and identifies your presence to others, especially in areas with moving vehicles or equipment.</p>	


<p>Question 11 (PC 1.5)</p> <p>How do you check for faults in small plant and equipment?</p>	
<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Conduct a visual inspection, checking for visible damage, wear and tear, loose connections, or missing parts. • Make sure the equipment is properly connected to a suitable power source and examine the power cord for any damage. • Check to the user manual or manufacturer's instructions for guidance on common issues and troubleshooting steps. • Test the equipment's functions and features individually to make sure of proper operation. • Check the functionality of safety features like guards, emergency stop buttons, and thermal overload protection. • Check calibration or use reference equipment to ensure accurate measurements, if applicable. • Inspect fluid levels, look for leaks, and ensure they are within recommended ranges. • Check wearable parts and replace or repair any that are worn out or damaged. • Test the equipment under realistic load conditions for performance evaluation. • Keep proper documentation of inspections, maintenance, and repairs for future reference and troubleshooting purposes. 	

<p>Question 12 (PC 1.5)</p> <p>How do you make sure you have the right equipment for the activity?</p>	
<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Look at the information about the equipment to see what it can do and what it can't do. Think about things like how much power it needs, how much it can hold, how big it is, how fast it is, how precise it is, and what safety features it has. • Find out and compare different options for equipment. Think about how well they work, how efficient they are, how reliable and durable they are, and if they are suitable for the task. • Think about how much money you can spend and how it will affect your budget. Balance the cost with the benefits and long-term value the equipment will give you. • If possible, try out the equipment before you use it for the job. This will help you find any problems or limits that could affect the task. 	



Question 13 (PC 1.6)	
What emergency procedures might you have for operating small plant and equipment?	
<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Be trained on the equipment and ensure you are aware of any specific emergency features or shutdown procedures. • Identify and locate the emergency stop button or switch on the equipment. • Have a reliable way of communication, such as two-way radios or a whistle, to communicate with others in case of an emergency or if help is needed. • Make sure that a fully stocked first aid kit is nearby. Be trained in basic first aid and CPR techniques to provide immediate help in case of injuries. • If working on site know the site's evacuation plan and emergency assembly points. Know the escape routes, emergency exits, and assembly areas in case of a larger emergency that requires evacuation. 	 

2. Conduct pre-operational checks



Question 14 (PC 2.1)	
What fuel and lubricants might you use to operate small plant and equipment?	
<p>Answer may include but is not limited to:</p> <p>Fuel: Fuel is what powers the equipment and makes it work. Common fuels for small plants and equipment include petrol and diesel. Petrol is often used for smaller engines, like those found in lawnmowers or chainsaws.</p> <p>Diesel fuel is commonly used for larger equipment, such as generators or construction machinery. These fuels are flammable liquids that burn inside the engine to produce the energy needed for the equipment to function.</p>	

<p>Lubricants: Lubricants are substances that reduce friction and wear between moving parts in the equipment. They help the components move smoothly and prevent them from overheating or getting damaged.</p> <p>The specific lubricants used depend on the type of equipment, but some common ones include motor oil, grease, and hydraulic fluids.</p> <p>Motor oil is used in engines to lubricate the internal parts. Grease is a thicker lubricant that is applied to joints and bearings. Hydraulic fluids are used in hydraulic systems to transmit force and provide lubrication.</p>	
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<p>Question 15 (PC 2.2)</p>	
<p>When operating small plant and equipment how would you check and adjust fuel, oil, hydraulic fluid and water levels?</p>	
<p>Answer may include but is not limited to:</p> <ul style="list-style-type: none"> • Fuel level: Look at the fuel gauge or check the fuel tank to see how much fuel is remaining. If the fuel level is low, refill the tank with the appropriate type of fuel according to the equipment's requirements. Be careful not to spill fuel and DO NOT SMOKE when handling fuel. • Oil level: Locate the oil dipstick or oil level indicator, usually found near the engine. Pull it out, wipe it clean, and then reinsert it fully. Pull it out again and check the oil level on the dipstick. If the oil level is below the recommended range or if it looks dirty or contaminated, add the recommended oil type slowly and carefully, avoiding overfilling. Use a funnel if needed. • Hydraulic fluid level: Find the hydraulic fluid reservoir, typically located near the hydraulic pump or control panel. Check the fluid level against the markings on the reservoir or using a dipstick if provided. If the level is low, add the recommended hydraulic fluid until it reaches the appropriate range. Again, be cautious not to overfill. • Water level: Some equipment may require water, particularly in cooling systems. Locate the water tank or radiator and check the water level. If it's low, add clean water until it reaches the recommended level. Make sure the engine is cool before opening the radiator cap to avoid potential burns. 	 

4. Carry out operator maintenance

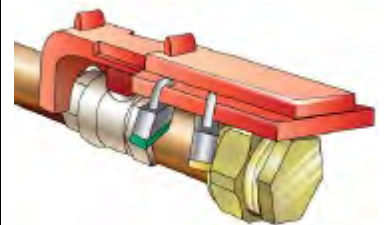


Question 24 (PC 4.1)

How can you get small plant and equipment ready for maintenance?

Answer may include but is not limited to:

- **Notify Relevant Personnel:** Inform the maintenance team and relevant personnel about the scheduled maintenance. Communicate the date, time, and duration of the maintenance activity.
- **Schedule Downtime:** Choose a suitable time to perform maintenance when the equipment is not in use. This prevents disruptions to regular operations.
- **Secure Necessary Resources:** Gather all the tools, equipment, and materials needed for the maintenance tasks.
- **Arrange Spare Parts:** Ensure that you have the necessary spare parts available in case any components need replacement during maintenance.
- **Prepare Work Area:** Clear the area around the equipment and create a safe and organized workspace for the maintenance team.
- **Isolate Equipment:** If possible, disconnect the equipment from its power source and any connected systems to ensure safety during maintenance.
- **Follow Safety Procedures:** Emphasise adherence to safety protocols, including lockout/tagout procedures and the use of personal protective equipment (PPE).
- **Cool Down (if applicable):** If the equipment was in use before maintenance, allow it to cool down before starting any work.
- **Document Equipment Condition:** Take note of the current condition of the equipment, including any visible issues or concerns that need attention.
- **Assign Responsibilities:** Assign specific tasks to the maintenance team members to ensure an organized and efficient process.
- **Coordinate with Vendors (if necessary):** If the equipment is under warranty or requires specialised expertise, coordinate with vendors or technicians for assistance.
- **Backup Data (if applicable):** If the equipment contains data or settings that could be lost during maintenance, ensure proper backups are made.
- **Communicate with Users:** Inform users or relevant departments about the upcoming maintenance, outlining any potential downtime or alternative arrangements.

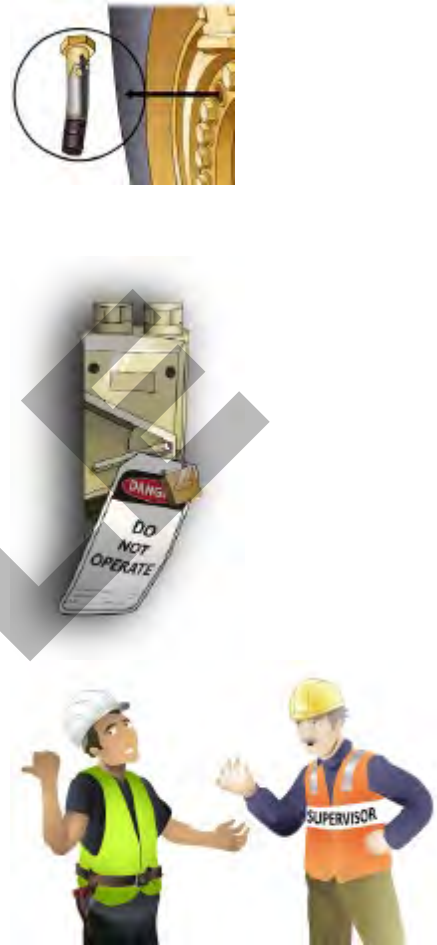


Question 25 (PC 4.2)

How can you inspect, check, and maintain small plant and equipment, to make sure it works correctly and safely?

Answer may include but is not limited to:

- **Visual Inspection:** Look closely at the equipment for any signs of damage, wear, or leaks.
- **Check for Cleanliness:** Ensure the equipment is free from dirt, debris, and material buildup.
- **Test Basic Functions:** Turn on the equipment and check if its basic functions are working properly.
- **Look for Loose Parts:** Check for any loose nuts, bolts, or screws and tighten them securely.
- **Lubricate Moving Parts:** Apply lubricant to movable parts to ensure smooth operation and prevent friction.
- **Check Safety Features:** Verify that all safety features like emergency stop buttons and safety guards are working correctly.
- **Identify Faults:** If you find any issues during the inspection, note them down.
- **Rectify Simple Faults:** If you can fix minor issues, do so using the appropriate tools and techniques.
- **Report Complex Faults:** For more significant problems or faults beyond your ability, report them to the maintenance team or relevant authority.
- **Document Inspection Findings:** Keep a record of the inspection results, including any faults found and actions taken.



Question 26 (PC 4.3)

How can you carry out scheduled maintenance tasks on small plant and equipment?

Answer may include but is not limited to:

- **Create a Maintenance Schedule:** Make a list of all the small plant and equipment that need regular maintenance. Decide how often each item needs maintenance; it could be weekly, monthly, or at other intervals.
- **Gather Necessary Tools and Materials:** Get all the tools and materials you'll need to perform the maintenance tasks. It might include things like lubricants, cleaning supplies, screwdrivers, and wrenches.
- **Read the Manual:** If your small plant and equipment came with a manual, read it carefully. The manual will usually have specific instructions on how to maintain and service the equipment correctly.



5. Conduct housekeeping activities



Question 27 (PC 5.1)

How do you clear the work area and dispose of materials?

Answer may include but is not limited to:

- **Put Away Tools and Equipment:** After using the small plant and equipment, make sure to put them away in their designated storage areas. This prevents accidents and keeps the workspace tidy.
- **Clean Up Debris:** Remove any debris, waste, or leftover materials from the work area. Use a broom or a vacuum to sweep the floor and ensure it is clean and safe.
- **Collect and Sort Waste:** Separate any waste materials generated during the work process. Sort them into different containers or bags based on their type, such as recyclables, general waste, or hazardous materials.
- **Follow Local Regulations:** Check with your local authorities or waste management guidelines on how to properly dispose of the collected waste. Adhere to any specific instructions for recycling, proper disposal, or hazardous materials handling.
- **Dispose of Waste Responsibly:** Take the sorted waste to the appropriate disposal facilities, recycling centers, or collection points. If there are hazardous materials, ensure they are handled according to safety regulations.
- **Store Hazardous Materials Safely:** If you have any hazardous materials left over, store them in designated containers or areas, away from children, pets, and other potential hazards.
- **Clean and Maintain Equipment:** Before storing the small plant and equipment, clean them properly. Remove any dirt, grease, or residue to keep them in good working condition and ready for the next use.
- **Inspect for Damage:** Check the equipment for any signs of damage or wear. If you notice any issues, address them immediately or tag the equipment as "out of service" until it is repaired.
- **Secure the Area:** Lock or secure the work area to prevent unauthorised access and ensure the safety of others when the equipment is not in use.



Practical Assessment



The assessor must be satisfied the candidate has successfully demonstrated each element and performance criteria contained in the Unit of Competency.

It is the assessor's responsibility to decide if the candidate has competently demonstrated a skill. The assessor may question a candidate further if their demonstration needs clarification.



Practical assessment instructions



Practical assessment should be performed in a normal working environment where possible. However, under some circumstances may occur in a simulated work environment (refer to assessment conditions for further information).

The Assessor must:

- Clearly explain to the candidate what is expected of them
- Check that the candidate has been provided with the necessary tools and equipment
- Complete checklists as the candidate goes through the tasks
- Only question a candidate during a practical task if it is safe to do so
- Stop the assessment immediately if the candidate is doing something dangerous
- Stop the assessment immediately if the machine or objects are likely to be damaged
- Inform the candidate of the result of the assessment.

If an assessor needs to stop the assessment because of danger or possible damage, the candidate must be marked as not yet competent. If the assessment is stopped, further training would need to take place before a re-assessment can be undertaken.

Tasks in the assessment do not have to be assessed in isolation they may be done as one continual task.

Assessment Guidelines

This assessment is designed to be used with the learning materials developed by Easy Guides Australia. The assessor must be satisfied the applicant has successfully demonstrated each aspect of the Unit of Competency. The answers provided are model answers only. The written assessment determines the candidate's underpinning knowledge.

This assessment can be customised to suit your requirements. When customising this assessment, you must ensure all performance criteria and knowledge evidence are addressed to maintain the integrity of the assessment.

Reasonable adjustments to assessments should be made to accommodate candidates with special needs.

Notes to Assessor:



Practical components of this assessment may be filmed using a mobile phone to record the practical assessment and note must be made of where the video file is stored.

Note: Use hand and power tools must be demonstrated on at least two occasions.
See appendix for bench mark information on procedure on how to use hand and power tools.

SAMPLE

Practical assessment tasks.



The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

Operate small plant and equipment on at least **two different occasions**, including:

- conducting pre-operational checks
- identifying and managing site hazards
- identifying and using correct operating techniques to achieve optimum output while maintaining specified tolerances
- correctly storing equipment
- completing operator maintenance
- clearing the work area.

During the above, the candidate must:

- locate and apply required documentation, policies and procedures and confirm that the work activity is compliant
- implement the requirements, procedures and techniques required to operate small plant and equipment
- work with others to undertake the operation of small plant and equipment
- communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities.

Assessment scenario – Making a path

The following three tasks use small plant and equipment to make a path. First the topsoil is removed to prepare the area for the concrete pavers. Secondly the crushed stone is flattened using a compactor. Finally the concrete pavers are cut to size where needed using a brick / masonry saw.



Practical Assessment Task 1 – Making a path (Part A)

Excavation equipment

Excavation equipment: Excavation equipment refers to machinery and tools used for digging, moving, and removing earth or other materials during excavation and earthwork operations. Excavation is a fundamental process in construction, landscaping, mining, and other industries that involves the removal of soil, rocks, or other materials to create trenches, foundations, holes, ditches, or excavated areas.



TASK

You have a mini loader. Your job is to remove 150 mm of topsoil ready for the crushed rock. Your trainer will provide a supply of PPE for you to choose from. The mini loader will be supplied. Your trainer will show you the area where the job is to be done. Once the excavation is complete a 100 mm layer of crushed rock can be put into position.

Your trainer will check that you:

- locate and apply required documentation, policies and procedures and confirm that the work activity is compliant
- communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities (if applicable)
- conduct pre-operational checks
- identify and manage site hazards. Explain hazard/s and controls.
- wear appropriate PPE
- identify and use correct operating techniques to achieve optimum output while maintaining specified tolerances
- work with others to undertake the operation of small plant and equipment (if applicable)
- complete operator maintenance (if needed).
- correctly store equipment
- clear the work area.

The applicants' performance in the Practical Assessment was deemed to be:

Satisfactory

Not yet satisfactory

Applicant signature:

Date:


Trainer/assessor signature:

Date:

Assessment Summary – Competency Sign Off

Written / Practical Assessment Summary		Satisfactory	Not Satisfactory
Knowledge Assessment		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 1 – Making a path (Part A)		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 2 – Making a path (Part B)		<input type="checkbox"/>	<input type="checkbox"/>
Practical Assessment Task 3 – Making a path (Part C)		<input type="checkbox"/>	<input type="checkbox"/>
Optional Task			
Practical Assessment Task		<input type="checkbox"/>	<input type="checkbox"/>
Competency:		Not Yet Competent <input type="checkbox"/> Date _____	Competent <input type="checkbox"/> Date _____
Feedback to be given to candidate or to Workplace Supervisor			
Trainer / Assessor signature: Date:		The learner has been assessed as <input type="checkbox"/> Not Yet competent / <input type="checkbox"/> competent in the elements and performance criteria, critical aspects for assessment, required skills and knowledge for this unit and the evidence presented is: <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/> Current <input type="checkbox"/> Sufficient	


LEARNER GUIDE




Training support material for:

RIISAM204E Operate small plant and equipment

Produced by:



EASY GUIDES
Australia Pty Ltd
PICTURE BASED. PLAIN ENGLISH. LEARNING MADE EASY.



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PREPARE FOR OPERATING SMALL PLANT AND EQUIPMENT

Element 1



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PC 1.1. 1.5 PREPARE FOR OPERATING SMALL PLANT AND EQUIPMENT

1. What types of small plant and equipment are used in this unit of competency?

Generally, 2-3 pieces of small plant and equipment will be used in training. On-site training can be customised to specific items of small plant and equipment. Training can include but is not limited to:



Road saws: Road saws, also known as concrete saws or asphalt saws, are powerful cutting machines used in construction and road maintenance. They are typically equipped with a large circular blade with diamond or abrasive teeth and are designed to cut through concrete, asphalt, and other hard surfaces. Road saws are commonly employed to create expansion joints, remove damaged sections of pavement, or cut trenches for installing utility lines.



Brick / masonry saws: Brick or masonry saws are specialized cutting tools used for precision cutting of bricks, blocks, tiles, and other masonry materials. These saws typically have a diamond blade specifically designed for cutting through hard materials like concrete, stone, and ceramics. They are commonly used in construction, masonry work, and tile installation to achieve accurate cuts for fitting bricks or blocks in various applications. Brick or masonry saws may come in different sizes and configurations, including handheld models or larger, stationary saws for more heavy-duty cutting tasks.

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PC 1.1, 1.5 PREPARE FOR OPERATING SMALL PLANT AND EQUIPMENT

(Continued from last page...)



Compressors: A compressor is a device or machine used to increase the pressure of a gas or air by reducing its volume. It is commonly used in various industries, including manufacturing, refrigeration, air conditioning, and power generation. Compressors are essential components in systems where the compression of gases is required for different purposes.



Generators: A generator is a device that converts mechanical energy into electrical energy. It is commonly used to produce electricity when a reliable power source is unavailable or as a backup power supply in case of power outages. Generators are widely used in various applications, including residential, commercial, and industrial settings.

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PC 1.1 PREPARE FOR OPERATING SMALL PLANT AND EQUIPMENT


(Continued from last page...)

Gravel: Vibratory Plate Compactor
 A vibratory plate compactor is a small machine used to compact gravel and other granular materials, creating a more stable and solid surface. It's commonly used in road construction, landscaping, and other applications where compacted gravel is needed.

Mud: Mud Mixer
 A mud mixer is a small device used to mix mud, which typically consists of soil, water, and sometimes additives, to create a slurry-like substance. This mixture is used in various applications, including construction, drilling, and even in some agricultural practices.

Rock: Rock Drill
 A handheld rock drill is a small, portable drilling machine used for drilling holes in rock, such as for mining, quarrying, or geological exploration. It's an essential tool for working with hard rock surfaces.

Topsoil: Topsoil Screener
 A topsoil screener is a small machine designed to sift and separate topsoil from larger debris like rocks and sticks. It's commonly used in landscaping and construction to ensure that the topsoil used for planting is free of unwanted materials.





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PC 1.3 PLAN AND PREPARE TO USE HAND AND POWER TOOLS

Identify and control risks and hazards (continued...)


3. Hazard: Struck-By or Pinch Points (accidental contact)


Control Measures:

Maintain a clear work area: Keep the work area free of clutter and obstructions that could cause tripping or create hazards.

Use tools with safety features: Choose hand tools that have built-in safety mechanisms, such as retractable blades or guards, to minimize the risk of pinch points or accidental contact.

Safe handling techniques: Use proper hand placement on tools, keeping fingers away from potential pinch points. Avoid using excessive force or using tools in





4. Hazard: Electrical Shock

Control Measures:

Grounding and electrical safety: Ensure that power tools are properly grounded or double-insulated to minimise the risk of electrical shock. Inspect power cords for damage before each use and replace any frayed or worn cords.

GFCI (Ground Fault Circuit Interrupter): Utilise GFCI-protected outlets or portable GFCI devices when using power tools in wet or damp environments to quickly interrupt electrical current in case of a fault.

Training and qualification: Ensure that workers are adequately trained in the safe use of power tools, including electrical safety practices, and that only qualified individuals operate the tools.

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PC 1.4 PLAN AND PREPARE TO USE HAND AND POWER TOOLS

Choose and wear personal protective equipment (PPE)

It is important to wear the correct PPE to keep you safe and protected. Here are some examples:

Here are some typical tools and equipment you might need.

Hard hat



Safety gloves



Safety vest



Dust mask



Long sleeved top



Ear muffs



Boots that cover the whole foot



Safety glasses/goggles, Sunglasses



Long pants



Sunscreen



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PC 1.5 PLAN AND PREPARE TO USE HAND AND POWER TOOLS

12. How do you make sure you have the right equipment for the activity?

Understand clearly what task or job needs to be done.

Look at the information about the equipment to see what it can do and what it can't do. Think about things like how much power it needs, how much it can hold, how big it is, how fast it is, how precise it is, and what safety features it has.


Find out and compare different options for equipment. Think about how well they work, how efficient they are, how reliable and durable they are, and if they are suitable for the task.

Think about how much money you can spend and how it will affect your budget. Balance the cost with the benefits and long-term value the equipment will give you.


If possible, try out the equipment before you use it for the job. This will help you find any problems or limits that could affect the task.

Make sure the people who will use the equipment know how to use it right, take care of it, and keep everyone safe.

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or



CONDUCT PRE-OPERATIONAL CHECKS


Element 2

EASY GUIDES
DAILY INSPECTION CHECKLIST

60 WEEKS
Pages to Replicate

For users of light and medium sized machinery

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PC 2.1 CONDUCT PRE-OPERATIONAL CHECKS

14. What fuel and lubricants might you use to operate small plant and equipment?

Fuel: Fuel is what powers the equipment and makes it work. Common fuels for small plants and equipment include petrol and diesel.

Petrol is often used for smaller engines, like those found in lawnmowers or chainsaws.


Diesel fuel is commonly used for larger equipment, such as generators or construction machinery. These fuels are flammable liquids that burn inside the engine to produce the energy needed for the equipment to function.

Lubricants: Lubricants are substances that reduce friction and wear between moving parts in the equipment. They help the components move smoothly and prevent them from overheating or getting damaged.

The specific lubricants used depend on the type of equipment, but some common ones include motor oil, grease, and hydraulic fluids.

Motor oil is used in engines to lubricate the internal parts. Grease is a thicker lubricant that is applied to joints and bearings. Hydraulic fluids are used in hydraulic systems to transmit force and provide lubrication.



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USE SMALL PLANT AND EQUIPMENT

Element 3

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PC 3.1 USE SMALL PLANT AND EQUIPMENT

20. How can you identify and control risks when operating small plant and equipment?



Familiarise yourself with operating procedures: Understand the standard operating procedures (SOPs) for the equipment you're using. This will help you recognize any deviations or gaps in the control measures.

Check the effectiveness of safety controls: Evaluate the existing safety controls, such as emergency stops, guards, or safety interlocks. Check if they are functional and properly maintained..

Evaluate operator training and competency: Determine if operators have received adequate training on the equipment and its safe operation.

Consider the maintenance and inspection routines: Review the maintenance and inspection protocols for the equipment. Check if they are being followed consistently. Inadequate maintenance can increase the risk of control failures.

Assess the availability and adequacy of warning signs and labels: Check if the equipment has appropriate warning signs and labels to communicate potential risks or required safety precautions. Ensure they are visible, legible, and located in relevant areas.

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PC 3.2 USE SMALL PLANT AND EQUIPMENT

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Implement quality control measures: Do quality control checks during the production process. Inspect samples or conduct tests to verify that the output meets the specified tolerances. Identify and fix any deviations at once.

Train operators effectively: Provide proper training to operators on the correct operation of the equipment. Ensure they understand the specified tolerances, the impact of their actions on output quality, and how to make necessary adjustments.

Document and analyse performance data: Keep records of the equipment's performance, including output measurements, adjustments made, and any deviations from the specified tolerances.

Communicate and collaborate with stakeholders: Maintain open communication with supervisors, quality control personnel, and other relevant stakeholders. Share feedback, discuss challenges, and work together to optimise output while staying within specified tolerances.

By following these guidelines, you can maximise the output of small plant and equipment while ensuring that the final results meet the specified tolerances and quality requirements.




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CARRY OUT OPERATOR MAINTENANCE



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PC 4.1 CARRY OUT OPERATOR MAINTENANCE

24. How can you get small plant and equipment ready for maintenance?

Notify Relevant Personnel: Inform the maintenance team and relevant personnel about the scheduled maintenance. Communicate the date, time, and duration of the maintenance activity.



Schedule Downtime: Choose a suitable time to perform maintenance when the equipment is not in use. This prevents disruptions to regular operations.

Secure Necessary Resources: Gather all the tools, equipment, and materials needed for the maintenance tasks.

Arrange Spare Parts: Ensure that you have the necessary spare parts available in case any components need replacement during maintenance.

Prepare Work Area: Clear the area around the equipment and create a safe and organized workspace for the maintenance team.

Isolate Equipment: If possible, disconnect the equipment from its power source and any connected systems to ensure safety during maintenance.

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CONDUCT HOUSEKEEPING ACTIVITIES



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PC 5.1

CONDUCT HOUSEKEEPING ACTIVITIES

27. How do you clear the work area and dispose of materials?

Put Away Tools and Equipment: After using the small plant and equipment, make sure to put them away in their designated storage areas. This prevents accidents and keeps the workspace tidy.



Clean Up Debris: Remove any debris, waste, or leftover materials from the work area. Use a broom or a vacuum to sweep the floor and ensure it is clean and safe.

Collect and Sort Waste: Separate any waste materials generated during the work process. Sort them into different containers or bags based on their type, such as recyclables, general waste, or hazardous materials.

Follow Local Regulations: Check with your local authorities or waste management guidelines on how to properly dispose of the collected waste. Adhere to any specific instructions for recycling, proper disposal, or hazardous materials handling.



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Dispose of Waste Responsibly: Take the sorted waste to the appropriate disposal facilities, recycling centers, or collection points. If there are hazardous materials, ensure they are handled according to safety regulations.

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Mapping of training materials

RIISAM204E Operate small plant and equipment



RIISAM204E Operate small plant and equipment – Mapping Document

This unit describes the skills and knowledge required to operate small plant and equipment in the resources and infrastructure industries.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take responsibility for the quality of own work outcomes.

Licensing, legislative and certification requirements may apply to this unit and can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Note: Use of small plant and equipment must be demonstrated on at least two occasions.

Element 1. Prepare for operating small plant and equipment

Performance Criteria	Learner Guide/PowerPoint	Learner Workbook	
		Knowledge	Performance
1.1 Obtain, interpret, and confirm work requirements	Question/s: 1, 2, 3, 4, 5, 6, 7	Question/s: 1, 2, 3, 4, 5, 6, 7	Task/s: 1, 2, 3
1.2 Access, interpret and apply documentation and procedures	Question/s: 8	Question/s: 8	Task/s: 1, 2, 3
1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures according to workplace procedures	Question/s: 9 Page/s: Identify and control risks and hazards. Page 28	Question/s: 9 Page/s: Identify and control risks and hazards. Page 28	Task/s: 1, 2, 3
1.4 Select and wear personal protective equipment required for work activities	Question/s: 10 Page/s: Choose and wear personal protective equipment (PPE). Page 32	Question/s: 10 Page/s: Choose and wear personal protective equipment (PPE). Page 32	Task/s: 1, 2, 3
1.5 Select and check for faults in plant, tools and equipment, and confirm they are appropriate for the work activity	Question/s: 1, 2, 3, 4, 5, 11, 12	Question/s: 1, 2, 3, 4, 5, 11, 12	Task/s: 1, 2, 3

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1.6 Obtain and interpret emergency procedures and be prepared for emergency situations	Question/s: 13 Page/s: Emergency procedures. Page 37	Question/s: 13 Page/s: Emergency procedures. Page 37	Task/s: 1, 2, 3
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Element 2. Conduct pre-operational checks

Performance Criteria	Learner Guide/PowerPoint	Learner Workbook	
		Knowledge	Performance
2.1 Select and use fuel and lubricants according to workplace procedures	Question/s: 14	Question/s: 14	Task/s: 1, 2, 3
2.2 Check and adjust fuel, oil, hydraulic fluid and water levels	Question/s: 15	Question/s: 15	Task/s: 1, 2, 3
2.3 Inspect, secure and maintain bolts, nuts, guards and attachment couplings	Question/s: 16	Question/s: 16	Task/s: 1, 2, 3
2.4 Check and adjust the function of controls and gauges	Question/s: 17	Question/s: 17	Task/s: 1, 2, 3
2.5 Conduct start up and shut down procedures according to workplace procedures	Question/s: 18	Question/s: 18	Task/s: 1, 2, 3

Element 3. Use small plant and equipment

Performance Criteria	Learner Guide/PowerPoint	Learner Workbook	
		Knowledge	Performance
3.1 Identify hazards during work and establish appropriate risk management controls	Question/s: 19, 20	Question/s: 19, 20	Task/s: 1, 2, 3
3.2 Identify and apply operating techniques to achieve optimum output while maintaining specified tolerances	Question/s: 21	Question/s: 21	Task/s: 1, 2, 3
3.3 Operate plant and equipment to produce results within specified workplace tolerances	Question/s: 22	Question/s: 22	Task/s: 1, 2, 3

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3.4 Store plant and equipment safely when not in immediate use	Question/s: 23	Question/s: 23	Task/s: 1, 2, 3

Element 4. Carry out operator maintenance

Performance Criteria	Learner Guide/PowerPoint	Learner Workbook	
		Knowledge	Performance
4.1 Prepare machine for maintenance	Question/s: 24	Question/s: 24	Task/s: 1, 2, 3
4.2 Conduct inspection and check plant and equipment for serviceability, identify, and rectify and report any faults	Question/s: 25	Question/s: 25	Task/s: 1, 2, 3
4.3 Carry out scheduled maintenance tasks	Question/s: 26	Question/s: 26	Task/s: 1, 2, 3

Element 5. Conduct housekeeping activities

Performance Criteria	Learner Guide/PowerPoint	Learner Workbook	
		Knowledge	Performance
5.1 Clear work area and dispose of materials	Question/s: 27	Question/s: 27	Task/s: 1, 2, 3
5.2 Clean and maintain condition of equipment, ensure suitability for use, and address and report issues	Question/s: 28	Question/s: 28	Task/s: 1, 2, 3
5.3 Complete written records and reports	Question/s: 29, 30	Question/s: 29, 30	Task/s: 1, 2, 3

ASSESSMENT INSTRUMENT (Summative assessment)

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

Operate small plant and equipment on at least two different occasions, including:	
<ul style="list-style-type: none"> conducting pre-operational checks 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> identifying and managing site hazards 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> identifying and using correct operating techniques to achieve optimum output while maintaining specified tolerances 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> correctly storing equipment 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> completing operator maintenance 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> clearing the work area. 	Task/s: 1, 2, 3
During the above, the candidate must:	
<ul style="list-style-type: none"> locate and apply required documentation, policies and procedures and confirm that the work activity is compliant 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> implement the requirements, procedures and techniques required to operate small plant and equipment 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> work with others to undertake the operation of small plant and equipment 	Task/s: 1, 2, 3
<ul style="list-style-type: none"> communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities. 	Task/s: 1, 2, 3

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

Knowledge Evidence	Knowledge Questions
Key policies, procedures and documentation required to operate small plant and equipment, including those related to:	
<ul style="list-style-type: none"> work health and safety procedures 	Question/s: 1, 13, 19
<ul style="list-style-type: none"> environmental issues 	Question/s: 8, 9, 21
<ul style="list-style-type: none"> emergency procedures 	Question/s: 4, 8, 11, 13
<ul style="list-style-type: none"> complying with safety data sheets 	Question/s: 8
<ul style="list-style-type: none"> records and reports 	Question/s: 8
Small plant and equipment types, characteristics, technical capabilities and limitations, including:	
<ul style="list-style-type: none"> power sources 	Question/s: 3
<ul style="list-style-type: none"> compaction equipment 	Question/s: 1, 5
<ul style="list-style-type: none"> excavation equipment 	Question/s: 1
<ul style="list-style-type: none"> maintenance equipment 	Question/s: 2
<ul style="list-style-type: none"> water equipment 	Question/s: 1, 5, 6
<ul style="list-style-type: none"> lighting equipment 	Question/s: 1
<ul style="list-style-type: none"> lifting materials 	Question/s: 1
<ul style="list-style-type: none"> key operating techniques 	Question/s: 4
Material types, characteristics, technical capabilities and limitations, including:	
<ul style="list-style-type: none"> water 	Question/s: 5
<ul style="list-style-type: none"> bituminous mixes 	Question/s: 5
<ul style="list-style-type: none"> timber 	Question/s: 5
<ul style="list-style-type: none"> fuels and oils 	Question/s: 5
<ul style="list-style-type: none"> power leads 	Question/s: 5
Applications of small plant and equipment working with:	
<ul style="list-style-type: none"> clay 	Question/s: 6
<ul style="list-style-type: none"> silts 	Question/s: 6
<ul style="list-style-type: none"> stone 	Question/s: 6
<ul style="list-style-type: none"> gravel 	Question/s: 6

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• mud	Question/s: 6
• rock sand	Question/s: 6
• topsoil	Question/s: 6
Key industry and site specific terminology	Question/s: 1 to 30

SAMPLE

Assessment Conditions

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

- include access to:
 - personal and protective equipment
 - equipment required to use hand and power tools
 - relevant documentation
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes 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.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements.

This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

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*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guides is found on VETNet

- <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>