RIICRC201E

Repair Potholes

Learner Guide Instructions

Who is this document for?

The learner.

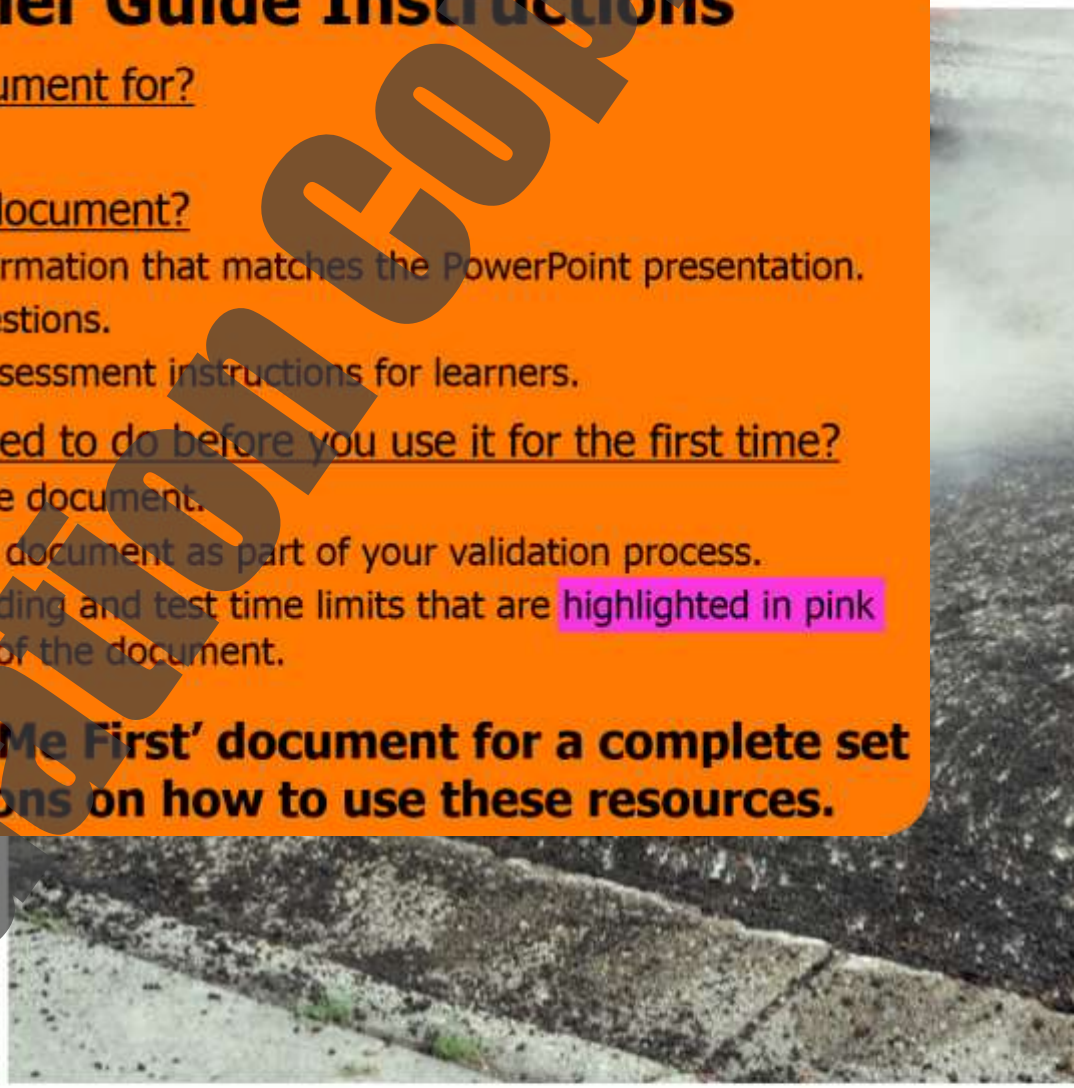
What is in this document?

- Course information that matches the PowerPoint presentation.
- Review questions.
- Practical assessment instructions for learners.

What do you need to do before you use it for the first time?

1. Rebrand the document.
2. Review the document as part of your validation process.
3. Set the reading and test time limits that are highlighted in pink at the end of the document.

See the 'Read Me First' document for a complete set of instructions on how to use these resources.



LEARNER GUIDE

RIICRC201E Repair Potholes

Learner Name:	
Learner ID:	
Learner Contact Number:	
Learner Email Address:	
Date Training Commenced:	

This Book Contains:

- ☐ Course Information.
- ☐ Review Questions.
- ☐ Practical Assessment overview and Instructions.

Table of Contents

1.1 Introduction

These materials are based on the national unit of competency **RIICRC201E Repair Potholes**.

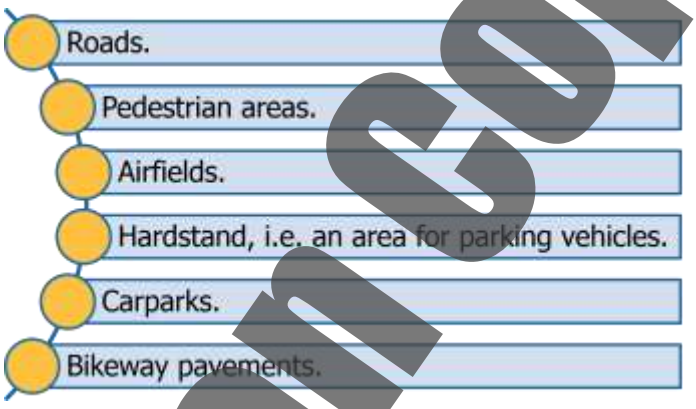
You will learn about:

- Planning and preparing for repair work on potholes.
- Performing the repairs.
- Cleaning up after work is complete.

1.1.1 What are Potholes?

Potholes are formed when the pavement or road surface disintegrates. They often appear after rain or during thaw periods when pavements are weaker. Heat can also be a factor with asphalt melting and/or moving in the hot sun.

Potholes may form on any extensive surface that receives traffic, such as:



Potholes are a hazard on roads, pavements and other surfaces. They can form very quickly or may slowly appear as problems are left untreated.

They can cause traffic delays, damage to vehicles and even injury to travellers. In some instances they may prevent the take-off or landing of aircraft in airfields.

Repairing them is a priority and the sooner this is addressed the less chance there will be of potholes becoming a major problem.

1.1.1.1 Types of Potholes

Potholes commonly include:

- Expanded cracks.
- Subsurface subsidence.
- Surface break up.
- Surface swelling.
- Ruptured asphalt.
- Broken road edge.
- Road surface slippage.

1.1.2 Common Causes of Potholes

When seeking to repair a pothole you need to know how it formed. There are a variety of possible causes, ranging from poor construction techniques, through to external damage and environment issues.

Potholes are most commonly caused by the following conditions:

- Water intrusion.
- Temporary wet conditions, e.g. seepage, irrigation, flooding.
- Poor pavement structure and/or materials used.
- Falling rocks in cuttings or hilly areas.
- Poor road design or construction.
- Chemical spillage, such as diesel.
- Ravelling under traffic, i.e. progressive wear of the surface.
- Traffic damage in hot weather due to:
  - Overloaded trucks.
  - Heavy vehicles causing the surface to move.
- Repetitive heating and cooling - this stretches and contracts the surface causing cracking and fatigue.

Sometimes potholes develop for unusual reasons, such as:

- Excessive salts not identified prior to construction.
- Subsurface digging by animals undercutting the structure.
- Mechanical damage from accident or loads being dropped.
- Water erosion along unsealed joins.
- Hydrophilic (water-loving) plants or those with extensive root systems.

1.2 Working Safely

You must follow all safety rules and instructions when performing any work. If you are not sure about what you should do, ask your boss or supervisor. They will tell you what you need to do and how to do it in a safe way.

1.2.1 Health and Safety Rules

Every workplace has to follow laws and rules to keep everyone safe. There are 4 main types:

Type	Explanation
Acts	These are laws that you have to follow.
Regulations	These explain what the law means and must also be followed.
Codes of Practice	These are instructions on how to follow the law, based on industry standards.
Australian Standards	These tell you what the minimum requirement is for a job, product or hazard.

Some states use OHS laws, and other states use WHS laws. They both talk about the same thing, but use different words or names for people. If you have any questions about safety rules you should talk to your boss or supervisor.

1.2.2 Operations Documentation

Before starting your work you need to make sure you have access to all operations documentation for the job. This will help you to do your work in the safest way and make sure all work is compliant.

Operations documentation includes:

Site Details
The information and safety requirements of the workplace environment (where you will be working).

Hazard Details
Any hazards in the work area or related to the work. This could also include instructions on how to handle dangerous or hazardous materials.

Task Details
Instructions of what the work is or what you will be doing (this can include diagrams or plans). Also instructions on how to safely do the job.

Faulty Equipment Procedures
Isolation procedures to follow or forms to fill out.

Signage
Site signage tells you what equipment you need to have, or areas that are not safe to be in.

Emergency Procedures
Instructions on what to do in emergency situations, for example if there is a fire, accident or emergency where evacuation or first aid is needed.

Equipment and Work Instructions
Details of how to operate plant and equipment and the sequence of work to be done.

1.2.3 How to Keep Everyone Safe

WHS law says that all companies and workers need to keep themselves and other people safe while they work. This is called a duty of care.

To keep yourself and other workers safe you need to:

- Follow your instructions.
- Follow all workplace rules.
- Make sure all equipment is safe to use.
- Carry out your work safely.
- Report any problems.

If you think something is dangerous tell your boss or supervisor as soon as possible.

Your worksite will also have instructions for working safely including:

- Emergency procedures, including using firefighting equipment, first aid and evacuation.
- Handling hazardous materials.
- Safe operating procedures.
- Personal protective clothing and equipment.
- Safe use of tools and equipment.

Review Questions

1.	What are the four (4) types of health and safety laws and rules?	☐

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2.	List three (3) things that may be included in 'operations documentation'.	☐

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1.3 Work Instructions

You need to be clear about what work you will be doing. Make sure you have everything about the job written down before you start. This includes what you will be doing, how you will be doing it and what equipment you will be using.

Make sure you have all of the details about where you will be working. For example:

- **The Site** – Is there clear access for all equipment? Are there buildings, structures, facilities or traffic in the way?
- **The Weather** – Is there wind, rain or other bad weather? Is it too dark?
- **Facilities and Services** – Are there power lines or underground services to think about?
- **Traffic** – Are there people, vehicles or other equipment in the area that you need to think about? Do you need to get them moved out of the area? Do you need to set up barriers or signs?
- **Hazards** – Are there dangerous materials to work around or think about? Will you be working close to traffic or machinery?

You also need to make sure you have all of the details about the kind of work you will be doing:

- **The Task** – What type of pothole needs to be repaired? How big is it? How was it formed? Does it need any materials or binding agents?
- **Equipment and Materials** – What type of equipment will be used? How big is it? How much room does it need? Are there any special materials or chemicals that will be used?
- **Communications** – How are you going to communicate with other workers?
- **Procedures and Rules** – Do you need any special permits or licences? Are there site rules that affect the way you will do the work?

1.3.1 Reading and Checking Your Work Instructions

All work needs to follow worksite, environment and company safety procedures.

Procedures help to make sure that all work is done in a safe way, without damaging equipment or putting people in unsafe situations. They also help to make sure that work is done in the correct order and doesn't interrupt or get in the way of other work that is happening on the site.

Your work instructions will tell you the safest way to do the job, and the equipment that you will need to use. It is a good idea to check your work instructions with your boss or supervisor to make sure you know exactly what you need to do.

In some situations you may be required to put together a clear set of instructions from various sources. To do this you may need to understand and obtain relevant information from site drawings, blueprints or plans.

If you don't know where to get your instructions or you can't understand them, you can ask your boss or supervisor. They will tell you where to find your work instructions and explain what they mean.

1.3.2 Safety Data Sheets

A Safety Data Sheet (SDS) is a detailed document outlining the risks and hazards associated with handling chemicals and other materials.

The SDS will contain details that can help you to identify:

Basic Details of the Chemical or Material	Name, type and identification number.
Hazards Associated with Use of the Material	Whether it is flammable or corrosive.
Safe Handling and Storage Procedures	PPE to use, sealed containers or storage temperatures.
Emergency Procedures	What to do if the chemical or material gets out of hand.
Disposal Procedures	Suggestions for removing the chemical or material from the site.

You will need to be aware of the SDS for every material that you work with on site. Many materials used for repairing potholes can be very toxic.

Talk to your WHS representative or supervisor if you have any questions about legislative requirements relating to your work.

1.3.3 Job Specifications

Some of your work instructions might be given to you in plans, maps, reports and specifications. You will need to get the information out of these documents and use it to do your job.

Project specifications will tell you the types, quantities, grades and classifications of materials you will be working with.

Make sure you are familiar with the site product or materials before you begin work. Some materials are more cohesive or sticky while others may be much less stable to work with, or create hazards like dust, contamination or damage to equipment if they are not handled just the right way. You will need to take these things into consideration when planning and carrying out your work.

Plans are usually "scale drawings" that represent a large area on a small sheet of paper and show proportion at the same time.

Project plans and maps give you an overview of the site, for example:

- The location of your work area in relation to the whole work site.
- The position of stockpiles, work zones, roads and access areas.
- The location of environmentally sensitive or 'no go' areas.
- Contours, or the lay of the land, e.g. slopes, banks, depressions.

Depending on the project, drawings may be very detailed or they could be simple sketches.

You should learn about the conventions and symbols used in the plans and drawings so you can understand what the information means.

Understanding these requirements will help you to make sure you are achieving the required quality standard for the project. It is essential that quality requirements are known, understood, and adhered to in all civil construction activities and tasks. To apply the requirements, you need to follow instructions and procedural documents exactly.

1.3.3.1 Maps

In planning and preparing your work you will be working with road maps and site maps. These are used to locate areas requiring pothole repair, as well as the best access routes.

Key features to look for on a map include:

- Road signs and street names.
- Grid references.
- Key site or area landmarks.
- Height, width and mass limitations of roads, bridges, tunnels and other structures.
- Estimation of distances.
- Map border information and convention symbols.
- Scale, measuring distance and judging distance.
- Ground shape, gradients and line of sight.
- Directions.
- Map orientation and position fixing.

Being able to read the maps and plans you are given will help you to find your way and recognise features on the ground that are represented on the map. It will also help you to understand information on locations or areas of the site.

1.3.4 Organising Work Activities

After receiving and clarifying all of your work instructions and requirements, you will need to organise and plan for your work activities. This is a major component of repairing potholes because each step must be completed before the next step can start.

Organising your work activities involves scheduling your daily and weekly tasks to complete all assigned tasks in the best, most efficient manner that still meets the requirements of the worksite. It will allow you to plan for the time ahead to ensure that you keep to project timelines.

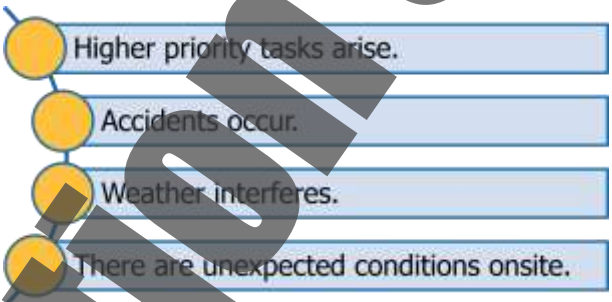
While you will be performing your own work activities you will also be involved with the activities of plant and machinery operators. This means you are required to sequence work activities and work with others onsite concerning timing issues.

Some people prefer a handwritten checklist or work method statement, others a computerised diary entry. What works for you is the most important thing.

A Work Method Statement is a list of steps that outlines how a job will be done. It also includes any hazards that occur at each step, and what you need to do about them. These statements can also be known as Safe Work Method Statement (SWMS), Job Safety Analysis (JSA) or Safe Operating Procedure (SOP).

WMS are a great tool for organising your work activities and making sure you have completed everything. This is because they outline the details of all tools, equipment and coordination with other workers relating to your job. Make sure all of these are available and ready before you start.

Flexibility is important when organising your work priorities to allow you to re-organise if:



1.3.5 Worksite Communications

It is important to coordinate your activities with other workers when you are planning for and carrying out the work to make sure everyone knows:

- The work being completed.
- How, when and where you will be operating.
- What they need to do.

All workers on site must understand their own role and the roles of others before starting work. It helps to make sure work is done safely and efficiently.

Workers you may need to coordinate with on site include:

- Supervisors and management.
- Plant and vehicle operators.
- Traffic controllers or other workers on the site.
- Team leaders.
- Site safety personnel.
- Processing plant operators.
- Maintenance workers.
- Crane and float operators.
- Contractors.
- Inspectors, both internal and external, including WHS, environmental and quality assurance officers.
- Site visitors.

1.3.5.1 Communicating with Others

When communicating with others on site, make sure that you:

- Speak clearly and unambiguously – stick to the important details, don't waffle.
- Give instructions or directions so that they are easily understood.
- Provide complex information or explain issues to your listener in a way that ensures they understand. You could try breaking down the details, simplifying the information or referring to related examples.
- Listen carefully, answer questions and provide clarification as necessary. You can also ask questions to clarify understanding.
- Use all communications equipment appropriately, following the required procedures and protocols.

Communication equipment you might need to use includes:

- Two-way radios.
- Telephones.
- Written reports.
- Emails.
- Text messages.
- Other site-specific systems.

Make sure that you follow your site procedures and protocols for communicating on site. This may include using the correct communication processes for communicating work activities or exclusion zones.

Review Questions

3.	Why is it a good idea to check your work instructions with your boss or supervisor?	☐

4.	Why should you learn about the conventions and symbols used in plans and drawings?	☐

5.	What does organising your work activities involve?	☐

6.	List three (3) workers you may need to coordinate with on site.	☐

1.

2.

3.

7.	When communicating on site, what can you do to ensure understanding?	☐