

RIIMPO316E

Conduct Self-Propelled Compactor Operations

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

RIIMPO316E Conduct Self-Propelled Compactor Operations

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.

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1.1 Introduction

These materials are based on the national unit of competency **RIIMPO316E Conduct Self-Propelled Compactor Operations.**

You will learn about:

- ◆ Planning and preparing for operations.
- ◆ Conducting machine pre-operational checks.
- ◆ Operating and relocating the machine.
- ◆ Maintaining the vehicle and cleaning up.



1.1.1 What is a Self-Propelled Compactor?



A self-propelled compactor is a tamping foot drum, wheeled machine that is used to compact a variety of civil construction materials.

The tamping feet on the wheels can vary in size, shape and depth depending on the model of machine.

It is able to operate at high speeds and most will have a dozer blade attached to the front end that allows the machine to doze or fill areas in addition to compacting.

In civil construction operations self-propelled compactors are commonly used for:

- Towing.
- Levelling.
- Compacting.

Self-propelled compactors may also be used in landfills to spread, level, cover and compact materials.

1.1.2 Compactor Components

The following diagram and table outline the basic components of a compactor:



Components	Description
Cabin	Part where operator sits and operates the machine. Controls include: joy stick or control levers, transmission controls, brakes, emergency stop controls.
Engine	Motor or drive unit of the machine. With a compactor this is located behind the cabin.
Steps and Handholds	Allows easy and safe access to the cabin.
Tamping Foot Drum Wheels	The wheels on the compactor are not traditional tyres. They are drums with numerous tamping feet on the surface. These assist in compacting the soil or materials being worked.
Blade	The pushing implement on the machine. It is used to push, level and shape materials.
Hydraulics	Generic name given to all hydro-static drive units including hoses and rams.

For the exact details of the components for the machine you are operating, check your operator's manual.

1.2 Site Policies and Procedures



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.

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.

Your worksite will also have instructions for working safely including:

- ◆ Emergency procedures, including using fire fighting 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.	List 3 things that may be included in 'operations documentation'.	<input type="checkbox"/>
1.		
2.		
3.		

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 obstacles in the way? What are the ground conditions like? Is the site ready for your work to begin? Are there structures, workers, traffic or areas that you need to avoid?
- ◆ **The Weather** – Is there wind, rain or other bad weather? Is it too dark?
- ◆ **Facilities and Services** – Are there power lines or other overhead 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 other people?



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



- ◆ **The Task** – What kind of material is being compacted? How much is there to work with? How long do you have to complete the work? Where will the work be done? Does the job need a special type of attachment?
- ◆ **Plant** – What type of plant will be used? How big is it? How much room does it need?
- ◆ **Attachments** – What equipment will you need to use? Will it need to be towed? Is the equipment available?
- ◆ **Communications** – How are you going to communicate with other workers?
- ◆ **Procedures and Rules** – Do you need any special permits or licences for the work? Are there site rules that affect the way you will do the work e.g. traffic control requirements?

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.

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 Work Method Statements

Many worksites require a work method statement before any work can start. 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).

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



1.3.3 Project Quality Requirements

Every civil construction project will have quality requirements. These outline when tasks need to be completed and the required standard of the work.

Your work instructions and plans or drawings will guide you, and help you to make sure you are achieving the quality standard for the project.

They can include:

- ◆ Project dimensions.
- ◆ Project tolerances.
- ◆ Standards of work.
- ◆ Material standards.



1.3.3.1 Plans, Drawings and Sketches

When looking for information or instructions for a civil construction project, you will come across plans, drawings and sketches. Examples of these are:



- ◆ Project plans.
- ◆ Site plans.
- ◆ Work plans.
- ◆ Project drawings.
- ◆ Sketches made to explain work that is happening on site.

Plans and drawings are useful because they can help you to get an overview of the site and the project as a whole. It can also be the best way to explain exactly what needs to be done.

You need to be familiar with the scale and symbols used in the plans and drawings so you can understand them properly. If you're not sure ask your supervisor, or other site personnel for help.

1.3.3.2 Site Materials and Products

Different types of soils and materials compact in different ways. Some, like sand, will need to be mixed with other materials before any compaction activities could start.

Make sure you are familiar with the site product or materials before you start to compact them. Have a look at the composition of the materials to see what kind of equipment you will need to compact them, and what techniques to use.

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 in the right way.



1.3.3.3 Checking Level and Grade Requirements

You need to check the floor clean up procedures to make sure you are able to achieve the specified levels and grades. These will be outlined in the project details and your instructions.

This could also include other areas such as the pad, road, ramps, and bench clean up procedures.



1.3.4 Civil Construction Sequences

Civil construction projects are made up of a range of smaller tasks or activities. It is important that these are done in the right order for the project to go smoothly.

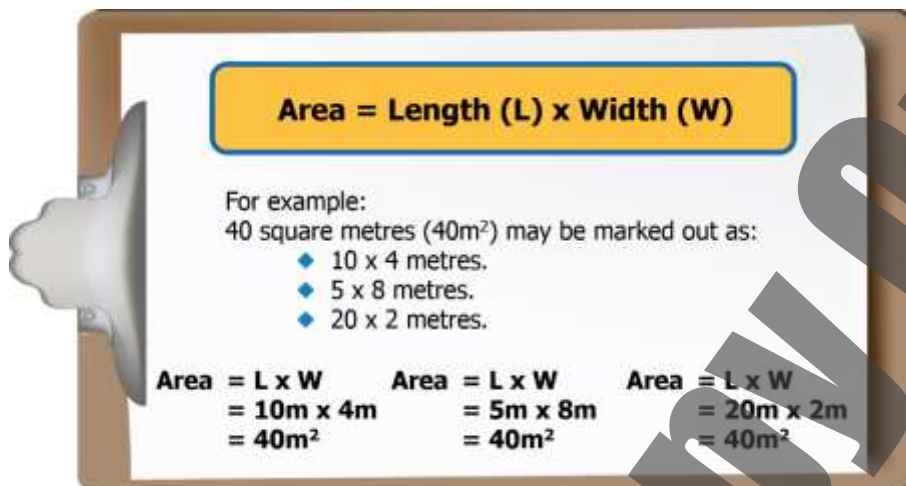
Here is a basic civil construction sequence from clearing the area through to road construction:



1.3.5 Basic Earthworks Calculations

As a compactor operator, the 2 main calculations you will need to be able to apply are for Area and Volume.

Area can be calculated using the following formula:



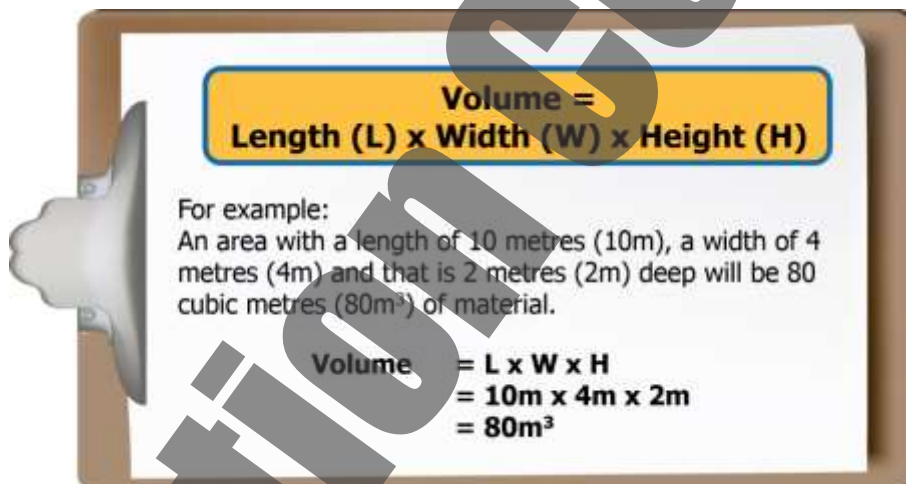
Area = Length (L) x Width (W)

For example:
40 square metres (40m²) may be marked out as:

- ◆ 10 x 4 metres.
- ◆ 5 x 8 metres.
- ◆ 20 x 2 metres.

Area = L x W	Area = L x W	Area = L x W
= 10m x 4m	= 5m x 8m	= 20m x 2m
= 40m ²	= 40m ²	= 40m ²

Volume can be calculated using the following formula:



Volume = Length (L) x Width (W) x Height (H)

For example:
An area with a length of 10 metres (10m), a width of 4 metres (4m) and that is 2 metres (2m) deep will be 80 cubic metres (80m³) of material.

Volume = L x W x H
= 10m x 4m x 2m
= 80m³

Review Questions

2.	What details about the work area can you get from your work instructions?	<input type="checkbox"/>

3.	Why is it a good idea to check your work instructions with your boss or supervisor?	<input type="checkbox"/>

4.	What is a work method statement?	<input type="checkbox"/>

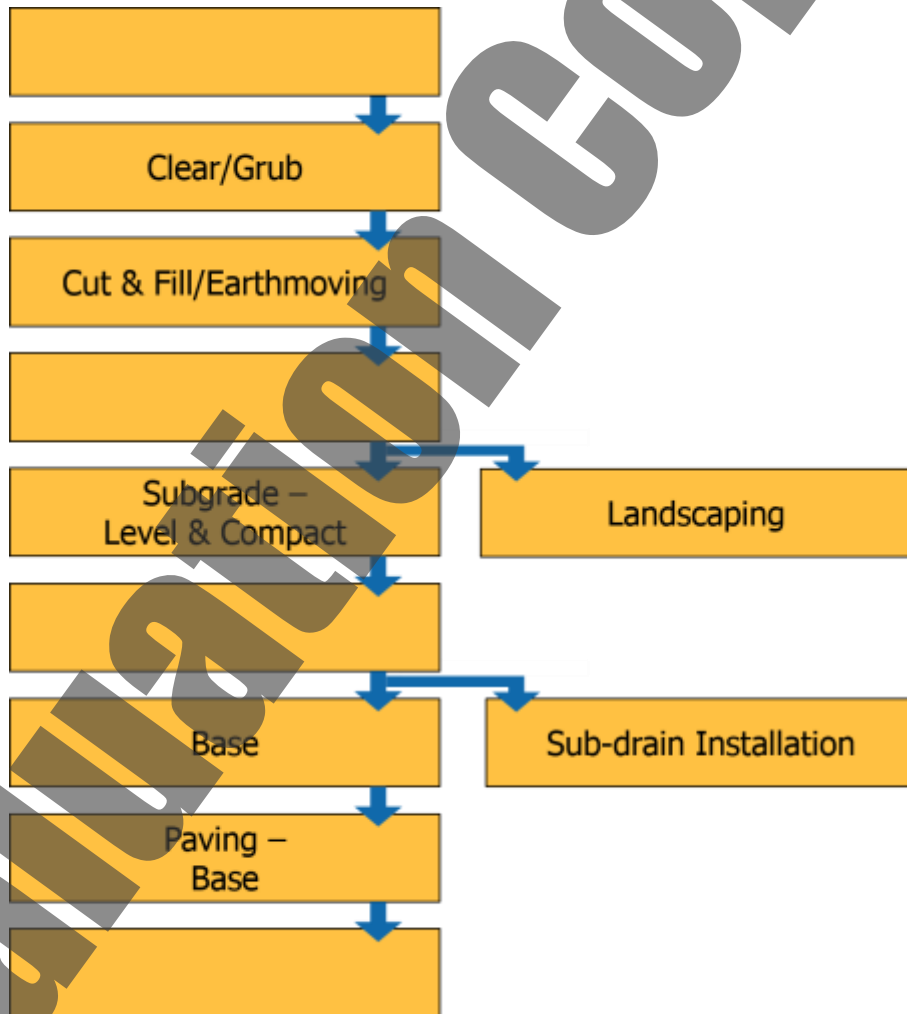
5.

What details are outlined in project quality requirements?



6.

Fill in the blank steps in the civil construction sequence.



7.

What is the formula for calculating area?

8.

What is the area of a space that is 20m wide and 210m long? Show all workings.

9.

What is the formula for calculating volume?

10.

What is the volume of a container that is 2.9m long, 1.8m wide and 1.5m high? Show all workings.