

CONSTRUCTION
Training Group

LEARNER GUIDE

Compactor CS

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*National Guidelines for
Occupational Health & Safety
Competency Standards for the
Operation of Loadshifting &
Equipment & Other Types of
Specified Equipment*

Compactor Safety – Assessment Instrument

ASSESSMENT

Part 1 Performance

Part 2 Oral/Written

ASSESSOR GUIDELINES – GENERAL

1. Introduction

1.1 Scope

As the assessment instruments follow the guidelines set down by the National Guidelines for Occupational Health and Safety Competency Standards for the operations of Loadshifting and other types of specified equipment, assessors should be familiar with the publication.

1.2 Evidence of Competence

Evidence of competence is established in a number of ways. The methods used in the following instruments involve:

- Assessment of practical performance
- Written and/or oral answers to questions on underpinning knowledge.

2. Preparing for the Assessment

2.1 Study the instruments

You need to read the assessment instruments and specific instructions carefully before beginning an assessment.

2.2 Confirm Appointments

Prior to an assessment, you need to confirm the date, time and location of the assessment with the applicant and any other relevant people.

2.3 Equipment Availability

The availability of equipment, materials and a suitable working area must be organised and confirmed, prior to the assessment.

2.4 Workplace Factors

Because procedures and processes vary greatly between workplaces, it is important for assessors to plan their approaches to meet the requirements of the individual workplace.

Make sure you take the timeframe into account when planning the assessment and also make the applicant aware of any time limits.

2.5 Selecting Questions

Questions for the written/oral assessment should be randomly selected, either by hand or using the computer system, if applicable.

3. Conducting the Assessment

3.1 Provide an Explanation

Begin by explaining clearly to the applicant what is required of them. Check that the applicant has provided (or has been provided with) the necessary tools and equipment.

3.2 Practical Performance

Complete the practical performance checklist, as the applicant works through the required tasks. Wherever possible, this should be done in a normal working environment.

Do not ask the applicant questions while he/she is performing a task, as this can be distracting, and may affect the time taken to complete the assessment.

If, at any time, the applicant is endangering themselves or others, stop the assessment immediately. This indicates that the applicant is not yet competent and may require further training, before being reassessed.

Assessments should also be stopped, if equipment or property is likely to be damaged.

3.3 Knowledge

The knowledge assessment covers both oral and written exercises. The model answers provided with the knowledge assessment instruments are not necessarily exhaustive. Use your own judgement when scoring alternative answers.

3.4 Recording Responses

A box accompanies each item and question on the assessment forms you use. Assessors must complete every box as follows:

CORRECT PERFORMANCE/
ANSWER

X NOT YET ACHIEVED

NA NOT APPLICABLE

ORAL ASSESSMENT

S STIMULATED ASSESSMENT

If a box is marked incorrectly, cross out the mistake, mark the correct response alongside, and initial the change.

4. Determining Competencies

4.1 Assessment Summary

A specific assessment summary is given for each certificate class. This is to be filled in and signed by the assessor and counter signed by the applicant.

Notice of Satisfactory Assessment

The original and duplicate are given to the applicant. The applicant provides the original to the certifying authority. The triplicate is to be retained by the assessor.

4.2 Competency Requirements

In order for you to deem an applicant competent, he or she must have completed each section of the assessment to the standard required. You should note any time constraints when arriving at your decision.

The standard required for each instrument is specified in the specific guidelines and/or on the summary page at the end of each instrument.

4.3 Additional Comments

Where an applicant fails to meet the standard of competence, you should add a written comment on the Assessment Summary, which briefly explains the problem. Advice to the applicant, on the appropriate remedial action should also be included. This will also assist the certificate assessor, in the event that the applicant undergoes future reassessment. Likewise, if an applicant demonstrates outstanding or remarkable performance, this should be noted.

4.4 Further Investigation

As a certificate assessor, it is your role to determine whether or not an applicant has achieved the standard necessary for the certifying Authority to be able to grant a certificate of competency. Whenever you are unsure of the applicant's performance or knowledge, ask additional questions, and obtain additional evidence, before making your final decision.

National Guidelines for OHS Competency Standards

Compactor Safety

PERFORMANCE ASSESSMENT

Assessor Guidelines – Specific (Performance Assessment)

ASSESSMENT INSTRUMENT – SPECIATIONS

The performance assessment covers the following Loadshift elements:

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

1. This assessment requires the operator to check the equipment, plan the work and to safely and competently operate the Compactor.

The Assessment is performed in ten sections:
 - 1.1 Conduct routine pre-operational check on Compactor
 - 1.2 Inspect the site and plan the work
 - 1.3 Conduct pre-operational and post start up checks.
 - 2.1 Drive to the work area.
 - 2.2 Rolls and consolidates the material
 - 3.1 Shut down the equipment and secure the site
2. The performance assessment can be conducted at any location which has:
 - Sufficient clear space to operate the machine
 - Ground suitable for excavating
3. Equipment and Resources Required:
 - Compactor
 - Suitable site on which to use the Compactor and consolidate material.
4. Unless other arrangements are agreed to by the assessor, it will be responsibility of the applicant, applicant's employer or trainer to provide the required equipment and resources.
5. To be assessed, an applicant must wear:
 - Safety helmet (where required)
 - Appropriate footwear
 - Other protective clothing and equipment as appropriate
6. The performance of each applicant is to be recorded to the assessor's checklist.
7. Safety of personnel:
When an applicant is working dangerously, recklessly or without the necessary co-ordination, the assessor must direct the applicant to cease work and terminate those parts of the assessment immediately.

8. The items in the shaded boxes are critical importance. Failing to get any of these correct means that the competency has not been achieved.
9. In cases where criteria cannot be physically performed the applicant is required to demonstrate his/her understanding of these criteria by answering relevant questions orally, or my stimulation.

The type of answer provided is to be shown on the assessment sheet as:

O: Oral Assessment

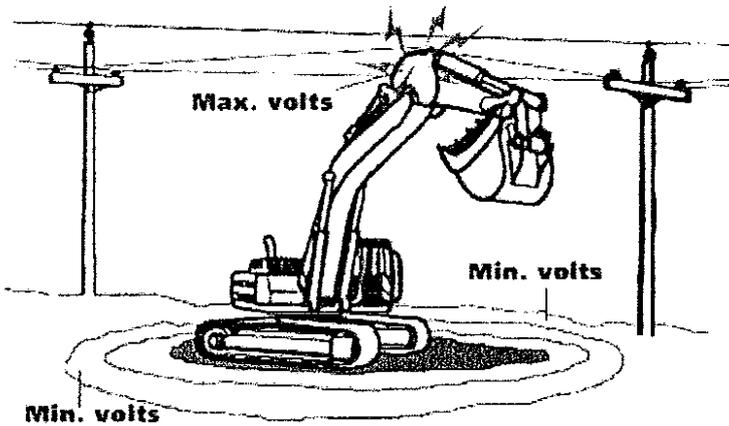
S: Stimulated Assessment

N/A: Not Applicable

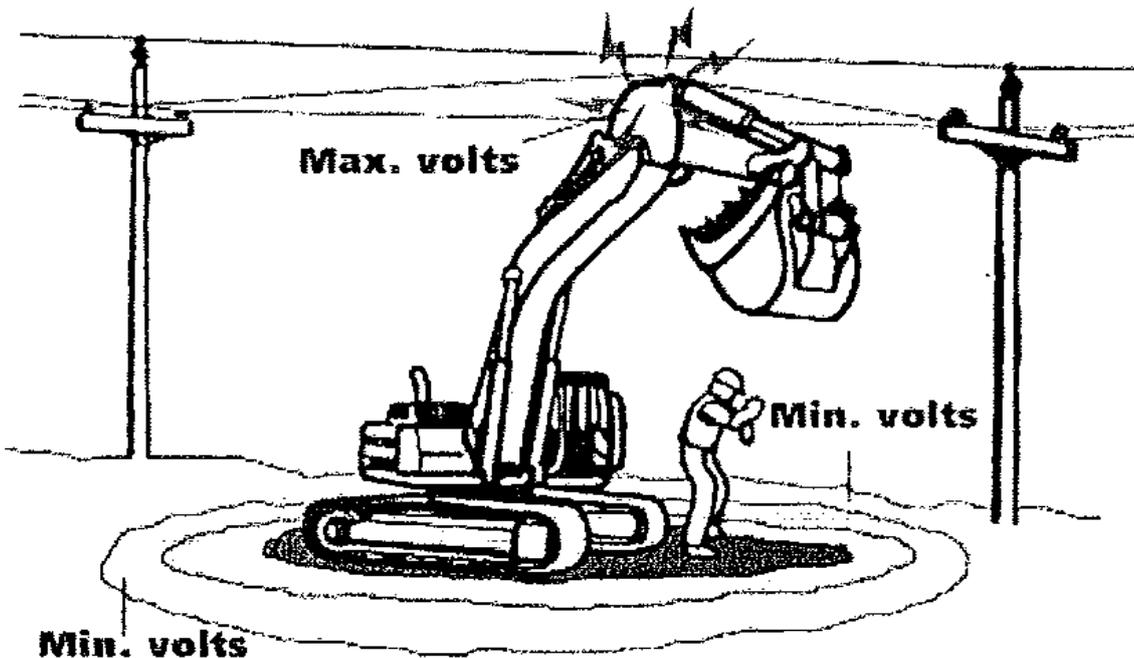
10. Where an applicant is assessed as 'Not Yet Competent' he/she must be informed of the reason for the failure in order to gain further appropriate training.
11. The full performance assessment can take up to forty minutes.
12. The applicant's competence in each unit is to be summarised for both performance and knowledge on the summary sheet. Competence is achieved for a unit when the required number of boxes for that unit have been ticked or marked as 'NA'.

Overall competence is achieved when competence in all units has been assessed.

Diagram 1:



If anything touches a high-voltage power line or if a power line falls to the ground, electricity will flow to the ground energising the tree or equipment and anything in contact with it. The surrounding ground may be extremely hazardous. The voltage gradually decreases from the point of contact until it reaches zero. The safe distance shown here—10 metres — is for line voltages up to and including 66 kV (66,000 V).

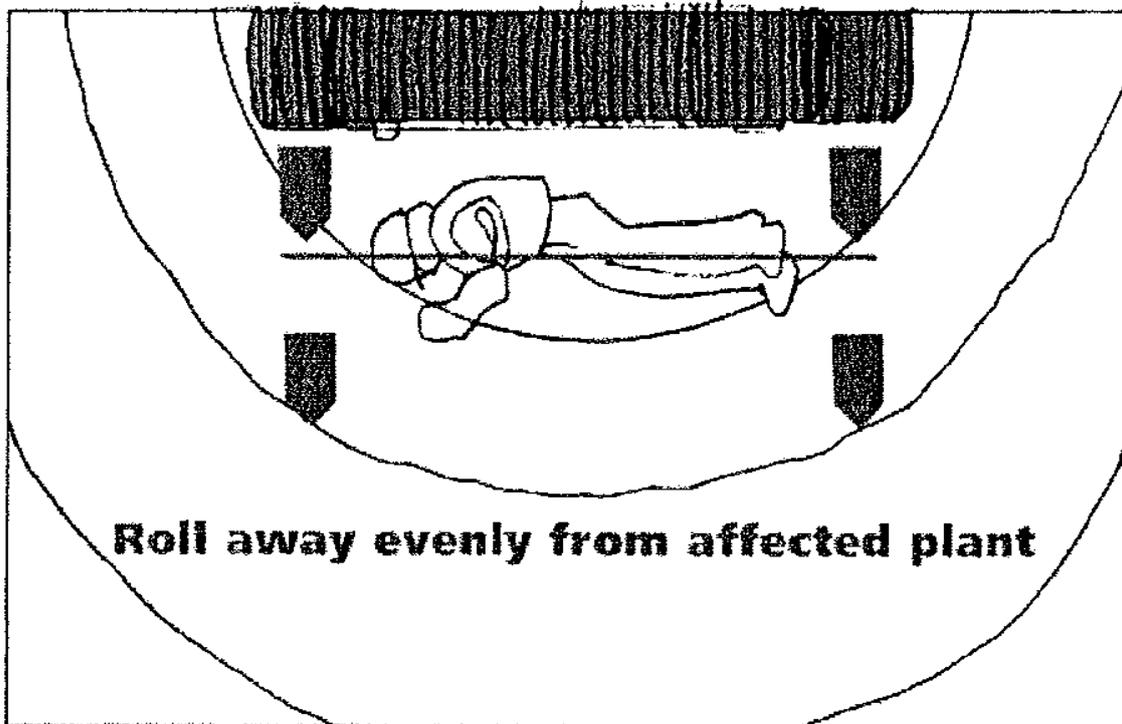
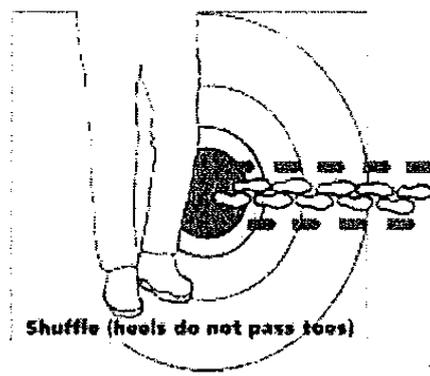
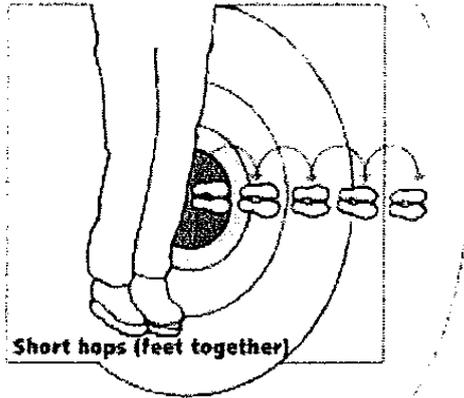


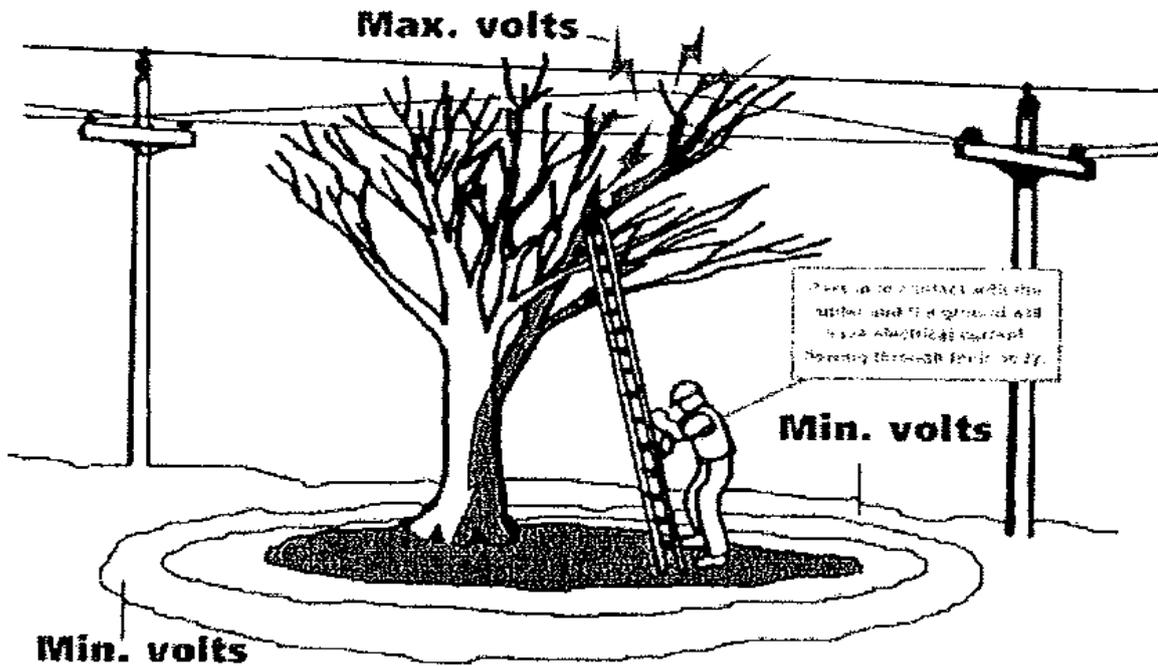
Step potential

Step potential is the voltage difference between two places that are a step apart on energised ground. For example, if you are standing on energised ground, there could be a significant difference in voltage between where one foot and the other are placed, and an electric current could flow up one leg and down the other.

Step potential. If your feet are spread apart on energised ground, electricity can flow through your body from the area of higher voltage to the area of lower voltage

If your feet are close together and touching, you are fairly safe. Since there is almost no voltage difference between the places your feet stand, there is little reason for electricity to seek a path through your body.





Touch potential

Touch potential is another danger that comes from the difference in voltage. It occurs when you touch something that is energised while standing on the lower voltage ground. For example, if some equipment is in contact with a power line, it will be energised to the same voltage as the power line; the surrounding ground will be energised to a lower voltage. If you touch the energised equipment or tree at the same time as you touch the ground with your feet, electricity will flow through your body from the higher voltage equipment to the lower voltage ground.

Touch potential: Trees and equipment become energised when they contact a power line. Electricity can flow through a worker who touches the energised tree or equipment, often causing serious injury or death.

Currents greater than 75 mA can cause ventricular fibrillation (rapid, ineffective heartbeat) and will cause death in a few minutes.

Conduct Routine Checks:

1. Conducts routine checks on vehicle equipment:

- Condition of drums and wheels

Checks liquid levels:

- Fuel
- Hydraulic Oil
- Engine Oil
- Battery
- Coolant
- Transmission

Checks equipment for defects:

- Warning signs
- Safety guards, covers
- Damaged, worn or broken parts
- Cleaner Bars
- Looks nuts, bolts
- Hoses and fittings
- Grease holes and grease pins
- Connections for missing pins or keepers.

2. Inspects site and plans work:

Identifies Hazards:

- Soft and sloping edges
- Rough/uneven/unstable terrain
- Service drains
- Inclines and declines
- Services eg: Power, Gas etc
- Plant, personnel
- Obstructions
- Wet slippery conditions

- Restricted operator vision area

Access and path of movement is indicated:

- To work area
- For loads

Appropriate equipment for the task:

- Equipment is appropriate for the task

OPERATIONAL CHECKS

3. Conducts pre-operations and post start-up checks in accordance with manufacturers specifications/operating manual

- Mounts correctly
- Adjusts seat, secures safety belt
- In neutral. Park, start
- Warning device
- Personnel clear
- Engine start
- Gauges, warning lights
- Braking system
- Steering

DRIVES UNIT

4. Drives to the work area:

- Raises attachments smoothly
- Blade low to allow clear vision
- Ensures travel direction clear
- Selects appropriate route
- Travels at safe speed
- Obeys road, warning signs

COMPACTS AND CONSOLIDATES MATERIAL

(The compacting will depend on work and type of material being compacted)

- Maintains safe distance from edge as directed by Supervisor, Site Instructions, Spotter, Signing or Barricades
- Edges compacted by overlapping each pass, moving out in stages
- Changes lane on a compacted or solid surface
- Overlaps each pass or run
- Uses an appropriate compaction pattern
- Safe and acceptable speed for compaction
- Uses blade at correct depth and angle
- Pushes full blade of material
- Maintains level working surface
- Ensures direction of travel is clear
- Competently compacts and consolidates material
- Equipment operated at a safe speed
- Signals are interpreted and observed

SHUT DOWN EQUIPMENT AND SECURE SITE

5. Shuts down equipment and secures site:

Parks equipment:

- Parks away from danger areas and in a suitable location
- Attachments lowered to the ground

Shuts down equipment:

- Neutralises controls
- Sets parking break, safety locks
- As per Operation Manual
- Removes keys
- Locks cabin (if applicable)
- Dismounts correctly

Post Operational check:

- Minor service
- Checks and reports any damage

National Guidelines for OHS Competency Standards

Compactor Safety

ORAL/WRITTEN ASSESSMENT

Assessor Guidelines – Specific (Knowledge Assessment)

ASSESSMENT INSTRUMENT – SPECIATIONS

The performance assessment covers the following Load shift elements:

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

1. Knowledge assessment for compactor is divided into three units.
2. To satisfy the requirements for competency the applicant must correctly answer (either in writing or orally) the specified number of questions in each of the following sections:

Unit 1.0

1.1 Conduct routine checks

Select 9

1.2 Plan work

Select 10

1.3 Check controls and equipment

Select 2

Unit 2.0

2.1 Drives Unit

Select 10

Unit 3.0

3.1 Shut down equipment

Select 3

3.2 Secure site

Select 1

3. The full knowledge assessment of thirty five (35) questions can take up to 1 hour.

4. The items in the shaded boxes are of critical importance. Failing to get any of these correct means that competency has not been achieved and the applicant must fail.

CONDUCT ROUTINE CHECKS: (Select 9 from Q1-13 including shaded boxes)

1. What should be the first check of your compactor at the start of your shift?

Walk around it looking for visual defects

2. What precautions must be taken when an inspection of work has to be performed under a raised blade or attachment or a crush point area?

Provision provided to prevent personnel from being injured by striking or crushing

3. Name three defects you would look for when conducting a routine check on the hydraulic system of the compactor.

Hydraulic oil leaks, loose connections and hoses for splits, fractures or bulges

4. Name five pre-operational checks that should be carried out on the compactor before it is started.

Radiator, battery, fuel, oil, hydraulic lines, wheels/drums, structural etc

5. What warning device must function on the Compactor to warn personnel that the compactor is to travel, or is travelling in reverse?

A reversing warning device

6. If an air system is installed on the compactor what daily action would you take with the air condensation in the air receiver?

Drain the water from the tank

7. What should be provided on the compactor to prevent the operator from being dislodged from the seat of the compactor?

A safety belt

8. What problem could be indicated by bubbles or milky engine oil in the sump?

Water leaking into the sump

9. Why shouldn't the hydraulic oil storage tank be filled above the filled mark?

Space in the tank is needed for displacement in the system

10. When changing a battery which battery clamp should be removed first?

The earthed battery clamp

11. How would you remove the radiator filler cap of a compactor that has not completely cooled off?

Slightly loosen cap to release pressure and then slowly remove cap

12. How would you establish the service and the frequency of the service to be carried out on the compactor you are required to operate?

By the service manual provided

13. To establish if the required service has been conducted, what document would you refer to?

The log book/service sticker

**PLAN WORK:
(Select 4 from Q14-20 including shaded boxes)**

14. What are the dangers of compacting near the edge of fills – embankments? (List 2)

The edge of fill may collapse. The Compactor could tip or rollover. Injury to operator

15. If there is a likelihood of the Compactor being overturned what must be provided on the compactor to protect the operator?

A rollover protective structure and safety belts

16. Why should side hill travel be avoided where possible?

There is a greater risk of turning the compactor over with side hill travel

17. In hazardous working areas where permission is required to work what must the operator ensure before the work is commenced?

That the required permits have been obtained

18. What should be erected where a dangerous obstruction is caused by earthworks being performed on a public road?

Signs or Barricades

19. When completing a public road where should warning signs be positioned to advise of a potential hazard or condition?

As per regulations – AS1742 Part 3

20. How should the flow of road traffic be controlled where signs and barricades are considered inadequate to control a potential hazard?

By a Traffic Controller or by Police Officer

(Select 6 from Q21-30 including shaded boxes)

21. Under what conditions should a Compactor operator wear respiration equipment?

Where there is a health risk to the operator from dust of contamination in the air

22. When should ear protection be worn?

Where the noise could contribute to the loss of hearing

23. When should a person wear a safety helmet?

Where the person could be struck on the head

24. What is the minimum type of footwear that an operator should wear to operate a compactor?

Non-slip footwear that encloses the foot

25. Which is the preferred route of travel, diagonally across or directly down a sloping surface?

Directly down the sloping surface

26. What gear should be selected to travel down a steep sloping surface?

A low gear. The gear required to climb the sloping surface

27. Describe the advantage of rear axle oscillation.

Keeps all drums/wheels on ground for traction and stability

28. How does a compactor compact the surface?

By the compactors static weight

29. Describe the use of cleaner bars?

Keep wheels/drums free of material, replaceable and adjustable

30. Describe the advantages of articulation

Makes manoeuvring quick and easy

CHECK CONTROLS AND EQUIPMENT
(Select 2 from Q31-39 including shaded boxes)

31. What action would you take with damage and defects found on the machine?

Report the damage and defects to the authorised person and refrain from operating if a danger exists and 'tag out'

32. When should tests, checks and inspections be made by the operator on the Compactor that is to be operated?

Before daily use

33. On the post start-up check you notice a bulge form in a hydraulic hose. What action would you take?

Switch off the machine and have the hose replaced

DRIVES UNIT
(Select 7 from Q34-44 including shaded boxes)

34. Is it permissible to carry passengers on the Compactor?

No. Only if there is approved seating and seatbelts

35. Before reversing a compactor what precaution should be taken?

Ensure the direction of travel is clear

36. Which of the following directions should compaction be performed on a large sloping surface – across, diagonally across, or up and down the sloping surface?

Up and down the sloping surface

37. As an operator would you leave an unattended compactor engine running?

No

38. How can traction be improved if the wheels/drums start to spin?

Gets traction by dropping the load being pushed

39. Is it permissible to use a sling around the blade of the compactor to hoist a load?

No

40. How would you establish the capabilities and limitations of the compactor?

By information provided by the employer and documented by the manufacturer

41. What compaction pattern should be adopted for the runs on a fill?

The runs should overlap the previous run

42. Would you coast the compactor downhill?

No

43. What direction would you approach and how would you cross a ditch?

Nat an angle and slowly

44. When travelling, what would you do before travelling down a steep grade?

Reduce speed with service break and select the appropriate gear for the grade

Select 3 from Q45-49 including shaded boxes)

45. Applicant to state the meaning of the hand signal of 'stop' as demonstrated by the assessor

Stop

46. While operating the compactor what action would you take if a hydraulic hose sprung a leak?

Have repairs carried out. Replace hose

47. How would you dismount from a compactor that has contacted live power lines?

Jump clear ensuring contact with the ground and compactor is not at the same time

48. What actions would you take if a compactor you were operating started to slide over an embankment?

Immediately stop the compactor. Get help if it is not possible to drive or reverse out slowly.

49. If the compactor has insufficient power to climb the hill in the gear that was selected, what action should be taken?

Reverse down the hill and select the correct gear to climb the hill

**SHUT DOWN EQUIPMENT
(Select 3 from Q50-54 including shaded boxes)**

50. Name three areas where you would not park the compactor

Access ways, near overhangs, refuelling sites, tidal or flood areas, adjacent to an excavation

51. When leaving the compactor, what should be done with the attachments?

Attachments lowered to ground and pressure removed from lines

52. Where possible, what type of surface should be selected to park the compactor on?

A level surface

53. Which direction should the compactor face if it has to be parked on a sloping surface?

Across the slope

54. What post-operational checks should be carried out by the operator at the end of the shift?

Check the equipment for defects and wear

**SECURE SITE
(Select 1 from Q55-56)**

55. What shall be provided when a compactor has to be parked on or protrudes onto an access way?

Barricades, lights and signs

56. For what reason should the key be removed from the ignition of the compactor?

To prevent unauthorised

Unit	Form of assessment	Total number of boxes in the assessment	Number of boxes given or NA	Number of boxes required to meet standard	Were all critical boxes given or NA?		Assessment standard requirements achieved *		
					Yes	No	Yes	No	
1	Performance	26		27	Yes	No	Yes	No	
	Knowledge	21		16	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No
2	Performance	19		15	Yes	No	Yes	No	
	Knowledge	10		7	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No
3	Performance	10		7	Yes	No	Yes	No	
	Knowledge	4		3	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No

*Performance standard = Number of items required to meet standard (including all critical boxes)
 Knowledge standard = Number of questions required to meet standard (including all critical boxes)

Summary

Candidate is:

- COMPETENT
- NOT YET COMPETENT

Date: _____

Name of Assessor: _____ Signature: _____

Name of Candidate _____ Signature: _____

Comments/feedback:
