



CONSTRUCTION
Training Group

LEARNER GUIDE

Excavator used as a Crane

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Guidelines for OHS Competency Standards

Loadshifting Equipment

Excavator used as a Crane

Oral/Written Assessment

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Practical Checklist

1. Conducts routine checks on vehicle/equipment:

- Tyre condition and inflation/track tension

Checks liquid levels:

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

Checks structure for defects:

- Damaged or broken parts
- Loose nuts, bolts and couplings

Checks attachments for defects:

- Damage
- Hoses, fittings, hydraulic rams for oil leaks
- Connections for missing pins or keepers
- Grease holes and grease pins

Checks other equipment for defects:

- Wire slings
- Chain slings
- Shackles
- Other gear
- Checks attachments for security

2. Inspects site and plans work:

Identifies hazards:

- Power Lines
- Phone Lines
- Service Drains
- Obstructions

Access and path of movement is indicated:

- To work area
- For loads

Fits appropriate equipment:

- Suitable tools used
- Secures catches
- Correct procedure adopted
- Works safely

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

- Mounts correctly
- Adjusts seat
- In Neutral
- Warning Device
- Engine Start
- Gauges

4. Operates Excavator

- Checks sling attachment point
- Establishes weight of load
- Load not more than SWL for the operation
- Selects appropriate slings and gear
- Raises LUG to connect load
- Supervises correct slinging of the load
- Ensures tag line connected (if required)
- Trial lifts load
- Moves load to hand signals
- Moves load safely
- Lowers load to designated location
- Equipment suitable for the work
- Machine suitable for ground conditions
- Competently shifts load
- Equipment operated at a safe speed
- Signals are interpreted and observed

- Loads placed to ensure stability
- Loads placed to avoid causing hazard

5. Shut Down Equipment and Secure Site

Parks equipment:

- Machine parked in suitable area
- Attachments lowered to ground
- 3 point of contact

Shuts Down Equipment:

- Neutralises controls
- Applies holding brake
- Idles to stop, locks ignition
- Moves controls to release pressure
- Applies safety lock (where applicable)

Avoids hazards:

- Parks away from danger areas
- Removes Keys
- Locks cabin (if applicable)

Excavator Used as a Crane

(Knowledge)

Assessor Guidelines – Specific

ASSESSMENT INSTRUMENT – SPECIFICATIONS

The applicant must pass 75% of all questions in exam

This operator competency based ticket may only be used and awarded as an endorsement in conjunction with LE Excavator competency based assessment

1. To satisfy the requirements for competency the applicant must correctly answer (either in writing or orally) 75% of questioning correctly.
2. Prior Learning and Experience:
An applicant who holds an Excavator Operator ticket may only conduct this assessment or can be assessed in conjunction with the Excavator assessment.
3. The full knowledge assessment of 33 questions can take up to 60 minutes.
4. 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 'N/A'.
Overall competence is achieved when competence in all units has been assessed.

1. Why should the maintenance service logbook be used?

This gives all persons concerned an accurate account of all services, maintenance repairs and the full service history.

2. What procedures should you follow in preparing an operation plan for Excavators?

Job requirements, priorities, workplace rules, procedures, identified hazards and hazard control measures.

3. What types of hazards would you consider for incorporation into your work plan when setting up on site?

- ✓ Powerlines
- ✓ Trees
- ✓ Overhead service lines
- ✓ Bridges
- ✓ Surrounding structures
- ✓ Obstructions
- ✓ Facilities
- ✓ Other equipment
- ✓ Dangerous materials
- ✓ Underground services
- ✓ Recently filled trenches

4. What hazard control strategies would need to be included in the plan for the evaluation procedures?

- ✓ Task being performed
- ✓ Any site hazard
- ✓ PPE required by Excavator personnel
- ✓ Warning signs
- ✓ Barriers
- ✓ Traffic Control
- ✓ Lighting
- ✓ Dangerous/Hazardous materials

5. What should be provided for the Excavator operations working at night or in darkened areas?

There should be sufficient lighting over all the work area

6. What precautions must be observed when working near overhead powerlines?

Never work closer than the minimum distance specified in AS2550. Ensure the Excavator is correctly earthed and that barriers/barricades are erected around the work area for public safety. Safety helmets need to be worn around the site.

7. a) What is the minimum distance any part of an Excavator load is allowed to set up near overhead powerlines?

You must stay 6.4m from domestic powerlines and 10m from high voltage transmission lines

or

With qualified Spotter, you can operate between 3-6.4m from domestic powerlines and 8-10m from high voltage transmission lines

7. b) If you want to work closer than the distances what can you do?

Must seek an exemption from the relevant authority

8. A person dogging a load puts a hand on the hook and starts to shake as though they are getting an electric shock, what should you do?

If possible, lift the hook clear of the person dogging the load to break contact with the earth. Follow relevant first aid procedure as required. If possible, get someone to assist.

9. Who should be involved in process of assessing the load?

The person dogging a load

10. What is the minimum size diameter of tag line to be used?

16mm diameter, dry and of a non conductive material

11. Who would be responsible for checking all lifting gear such as chains and slings?

The person dogging the load

12. Why is it important to separate defective equipment?

To eliminate the possibility of further re-using the faulty or defective equipment

13. When interference (tampering) is identified, to whom should the Excavator driver report any faults?

To an authorised person/employer

14. Give 3 different ways in which the mass (weight) of a 'load' can be determined?

- ✓ The truck driver who delivers the 'load' may have the weight of the 'load' documents, either by delivery dockets or from a public weight bridge,
- ✓ The manufacturer of the 'load' may also have relevant information relating to the weight of the item.
- ✓ The load weight may appear on the 'load' itself or on the packaging in which it is delivered/transported
- ✓ Calculate

15. Where the trial lift reveals there is problems with the lift, what should be done?

Immediately lower the load back down and take necessary corrective action. Do not proceed any further until situation has been rectified.

16. If you heard a loud noise and felt vibration coming from the boom section, what would you do?

Lower the load, cease operation immediately and notify the person dogging the load. Have an inspection carried out to identify whether damage has occurred during the lift.

17. Where are the lifting limits located on the excavator?

On the load chart and Boom, the exact locations vary according to the manufacturer of the Excavator

18. What happens if you overload the excavator?

Damage may be caused to the structure of the excavator and also the boom may bend

19. If you found a defect in one of the main controls that would place the Excavator and/or personnel at risk, what would you do?

Cease operation, secure area, remove keys, tag machine and report to an authorised person

20. If any signals are observed through warning lights, cut outs, or alarms, what action would you take to have the defect rectified?

Assess the situation and take appropriate effective action, cease work and notify supervisor.

21. Why is it important to have the lifting point positioned correctly over the load?

To reduce the risk of overloading or collapsing the Excavator and prevent load from swinging on lift

22. State the reasons why you are not permitted to drag or snig a load?

- ✓ Could cause structural damage to excavator by exceeding the SWL of the excavator.
- ✓ Could cause load to swing
- ✓ Could cause load to topple

23. Are you permitted to allow a person to ride upon the lifting hook, sling, attachment or suspended load?

No, it's against regulations.

24. Explain the requirements that would permit you to lift personnel using the crane?

There are no requirements as this is against regulations

25. What is the maximum wind speed that Excavator can work in?

As per manufactures recommendations and the operating conditions are taken into consideration.

26. Would you track across the side of a hill with a load? Give reasons for your answer.

No, it will put side pull on the boom and overturn the excavator.

27. When tracking a load up a hill, which direction should the load face?

Up hill.

28. If the Excavator was to come into contact with the power lines, what must be done?

- ✓ Remain in Excavator cabin until power is disconnected
- ✓ Warn all other people nearby
- ✓ Try to move the Excavator away from conductors using Excavator controls
- ✓ If you have to leave the Excavator in an emergency, jump clear avoiding contact with ground and Excavator at same time.
- ✓ Machine checked prior to future use

29. What is the safe position to leave the boom during shut down (eg: gale forced winds have been forecasted)?

Hook, lowered, boom secured

30. Can any loads remain suspended from the hook following shut down or when Excavator is unattended?

No. If during the course of a lift the Excavator driver must leave the controls, the load should be placed on the ground and Excavator shut down in the prescribed manner (no driver, no load)

31. What are the key elements involved in AS2550 related to multiple lifts?

- ✓ The size and characteristics of the load
- ✓ The mass (weight) of the load
- ✓ Centre of gravity
- ✓ Mass of lifting gear
- ✓ Number of Excavators involved
- ✓ Calculated share of the load to be handled by each Excavator motions:
 - Raised in a vertical plane
 - Lowered in a vertical plane
 - Speed of operation
- ✓ Pick and carry
- ✓ Wind/weather conditions
- ✓ Supervision – one person to be in overall control of the operation

32. Who would carry out maintenance and replace worn pins in the boom arms?

By a competent person that has been approved by the employer

ASSESSMENT SUMMARY – Based on 75% competency to pass

Form of Assessment	Total number of items in the Assessment	Number of items required to meet standard	Assessment Standard Requirements Achieved	
Written	32	25	Yes	No
Assessment Completed within Time Allowed			Yes	No

Knowledge standard = Number of questions required to meet standard

SUMMARY

Student is (tick the result obtained): _____ Date: _____

- Competent
 Not Yet Competent

Name of Assessor: _____ Signed: _____

Name of Student: _____ Signed: _____

Comments/Feedback: _____
