

RESOURCES

REQUIRED

<b>Machine</b>	<ul style="list-style-type: none"> <li>• 360 excavator fitted with a standard excavating bucket using a quick-hitch coupling system (Endorsements A and B).</li> </ul>
<b>Area</b>	<ul style="list-style-type: none"> <li>• Ground, clear of hazards, which must include: <ul style="list-style-type: none"> <li>– level area for excavating (A and B), and lifting operations (C) if applicable</li> <li>– rough terrain (A – C)</li> <li>– slope or slopes (A and B)</li> <li>– spoil/material to load vehicles (A and B).</li> </ul> </li> </ul>
<b>Other equipment</b>	<ul style="list-style-type: none"> <li>• Load-carrying vehicle for spoil/material.</li> <li>• A replacement bucket for reinstating and changing activities.</li> <li>• Items to create restrictions for manoeuvring.</li> <li>• Laser-equipped measuring equipment to ensure trench specifications are met.</li> </ul>
<b>Notes</b>	<ul style="list-style-type: none"> <li>• The machine selected for the test must meet the specification for the required endorsement, be in serviceable condition and conform with current legislation.</li> <li>• The operator's manual must be with the excavator.</li> <li>• The slope must have at least an 18% (1:5.5) incline with sufficient manoeuvring room at the top, or a straight ramp with an up and down route with a flat area at the summit.</li> <li>• The nominated area must be safe to allow excavations up to 2 m deep.</li> <li>• The load-carrying vehicle must have a minimum capacity equivalent to six full bucket loads of the excavator being used for the test.</li> <li>• Minimum bucket sizes apply, as follows: <ul style="list-style-type: none"> <li>– machines up to 20 tonnes – 24 inches (600 mm equivalent)</li> <li>– machines above 20 tonnes – 36 inches (900 mm equivalent).</li> </ul> </li> <li>• The same bucket may be used for reinstating and changing purposes.</li> </ul>

ENDORSEMENT C – ADDITIONAL

<b>Machine</b>	<ul style="list-style-type: none"> <li>• 360 excavator capable of lifting the requisite slung loads, fitted with check valves*, an RCI/LMI* and have a suitable lifting/accessory attachment point.</li> </ul>
<b>Loads (optional)</b>	<ul style="list-style-type: none"> <li>• <b>LOAD A</b> 1 x load, able to be slung and weighing not less than 60% of the machine's maximum lifting/object handling capacity at full radius.</li> <li>• <b>LOAD B</b> 1 x load able to be slung being at least 3 m in length.</li> <li>• <b>LOAD C</b> 1 x load able to be placed behind a structure or below ground level.</li> </ul>
<b>Other equipment</b>	<ul style="list-style-type: none"> <li>• Multi-legged lifting accessories suitable for each load.</li> <li>• Measuring tape for measuring the maximum radius of the excavator.</li> </ul>

ENDORSEMENT C (Cont'd)

<p><b>Other equipment (cont'd)</b></p>	<ul style="list-style-type: none"> <li>• Slinger and signaller assistance.</li> <li>• Structure or below-ground level location for placing a load out-of-sight of the operator.</li> <li>• Items to facilitate the load handling exercise in Activity 12.</li> </ul>
<p><b>Notes: Lifting operations only</b></p>	<ul style="list-style-type: none"> <li>• All lifting accessories must be fit for purpose and certificated.</li> <li>• The weight of all loads must be known.</li> <li>• The rated load/object handling capacity chart must be available for reference by the candidate.</li> <li>• The slinger/signaller must be certificated and competent.</li> <li>• The width of the obstacle for Activity 12 must be minimal allowing the load to be returned to ground level before full radius is reached.</li> <li>• The structure or below-ground level location chosen for <b>LOAD C</b> must be suitable for landing the load, but must be of sufficient height or depth so that the whole of the load and portion of the lower part of the lifting accessory cannot be seen from the operating position. If a below-ground landing place is chosen, it must be a safe environment for the slinger/signaller to handle.</li> <li>• The load: If a ground level structure is chosen, it must be of sufficient strength to resist movement should the load inadvertently contact the structure.</li> <li>• Care must be taken if the machine is fitted with a quick-hitch type coupler as the accessory attachment point may extend the working radius of the machine and exceed the manufacturer's maximum rated lift/object handling capacity.</li> <li>• Machines being used for the test must have:             <ul style="list-style-type: none"> <li>– a boom lowering control device on the raising (main) boom cylinder(s) and meet the requirements of ISO 8643:1997</li> <li>– an RCI* or LMI*.</li> </ul> </li> </ul> <p>* An RCI is deemed as a device that meets the requirements of LOLER 1998 in terms of a device that provides acoustic or visual warnings which indicates to the operator when the object handling capacity or corresponding load moment is reached.</p>

## ACTIVITY

### Instructions (Endorsements A and B)

<b>Sequence</b>	<ul style="list-style-type: none"> <li>Activity 1 must be undertaken at the start of the test.</li> <li>Activities 2, 4 and 5, 6 and 11 to 14 can be undertaken at any time during the test.</li> <li>Activity 9 must be undertaken at the end of the test.</li> </ul> <p>The test must be completed within a given time. The specification section gives further information.</p>
<b>Preparing for work</b>	1. Complete all manufacturers' pre-start and running checks and prepare the excavator for travel.
<b>Travelling and manoeuvring (refer to specifications)</b>	2. Travel to the work area and: <ul style="list-style-type: none"> <li>– travel up and down the slope</li> <li>– pass through a restriction</li> <li>– travel over rough terrain.</li> </ul>
<b>Setting up for work</b>	3. Prepare and set the excavator for the relevant work.
<b>Working tasks (refer to specifications)</b>	4. Produce a vertical trench to the specified dimensions. 5. Complete a square excavation with vertical sides at the end of the dug trench. 6. Load material into a vehicle. 7. Change the bucket.
<b>Completing work</b>	8. Reinstate the work area back to the original state.
<b>Shutting down</b>	9. Park the excavator and carry out shut-down and securing procedures.
<b>Notes</b>	<ul style="list-style-type: none"> <li>For Activity 2, wheeled excavators must pass through the restriction in a forward and reverse direction.</li> <li>For Activity 7, the dipper must be raised and slewed away from the bucket before attaching, if using the same bucket.</li> <li>If the machine is hot, checks unable to be carried out (such as coolant) may be assessed by the tester using verbal questions.</li> </ul>

## SPECIFICATIONS

### Activity measurements (Endorsements A and B)

<b>Travel restrictions</b>	<ul style="list-style-type: none"> <li>800 mm (Activity 2).</li> </ul>
<b>Trench depth</b>	<ul style="list-style-type: none"> <li>1 m ± 35 mm and straight within ± 60 mm.</li> </ul>
<b>Trench length</b>	<ul style="list-style-type: none"> <li>Machine weight: <ul style="list-style-type: none"> <li>– 10 - 20 tonnes = 15 m</li> <li>– Over 20 tonnes = 20 m.</li> </ul> </li> </ul>
<b>Square excavation</b>	<ul style="list-style-type: none"> <li>3 x buckets wide and a depth of 1.5 m ± 35 mm.</li> </ul>
<b>Loading vehicle</b>	<ul style="list-style-type: none"> <li>Loaded to capacity.</li> </ul>
<b>Test timings</b>	<ul style="list-style-type: none"> <li>The test must be completed within two hours and 45 minutes for Endorsements A or B only</li> </ul>

ACTIVITY (Cont'd)

Instructions (Endorsement C)

<b>Sequence</b>	<ul style="list-style-type: none"> <li>Activities 11 to 15 can be undertaken in any order during the test.</li> </ul>
<b>Preparing for Work</b>	10. Prepare and set the excavator for each lifting operation.
<b>Lifting operations</b>	<p>11. Lift <b>LOAD A</b> from minimum radius, position the load at 75% of full radius and rotate for a minimum of 180 degrees. On completion, land the load at a different radius.</p> <p>12. Lift <b>LOAD A</b> and place at minimum radius. Reposition the load to full radius whilst following ground contours. At a point halfway along the load travel route, pass the load over an obstacle whilst following the contours of that obstacle. When at full radius, slew the load for approximately 10 degrees (left or right) and return the load to the start point following ground contours.</p> <p>13. Lift <b>LOAD A</b> and travel for a minimum given distance following a route that includes:</p> <ul style="list-style-type: none"> <li>– passing through a restriction</li> <li>– travelling over rough terrain</li> <li>– executing right and left hand turns.</li> </ul> <p>14. Lift <b>LOAD B</b> and position the dipper arm vertically. Rotate the load for a minimum of 180 degrees and return back to the start point via the same route.</p> <p>15. Lift <b>LOAD C</b> and place at a given point which is below ground level or behind a structure. Once landed return to the original start point.</p>
<b>Notes</b>	<ul style="list-style-type: none"> <li>Activities 1 and 9 need to be undertaken by existing CPCS cardholders holding Category A59 seeking Endorsement C in addition to Items 10 – 15.</li> </ul>

SPECIFICATIONS (Endorsement C)

<b>Load movement</b>	<ul style="list-style-type: none"> <li>Maximum height of underside of the load = 1 m (except Activity 12).</li> </ul>
<b>Load movement (Activity 12)</b>	<ul style="list-style-type: none"> <li>Maximum height of underside of the load from ground contours = 100 mm.</li> <li>Maximum distance from obstacle = 500 mm.</li> </ul>
<b>Obstacle height (Activity 12)</b>	<ul style="list-style-type: none"> <li>Minimum of 1 m.</li> </ul>
<b>Load placing (all activities)</b>	<ul style="list-style-type: none"> <li>100 mm of a given position.</li> </ul>
<b>Travelling with load</b>	<ul style="list-style-type: none"> <li>At least 12 m distance.</li> </ul>

ACTIVITY MEASUREMENTS (Endorsement C – Cont'd)

<b>Test timings</b>	<ul style="list-style-type: none"> <li>The test must be completed in a total time of three hours and 15 minutes if combining Endorsement C with Endorsements A or B, or</li> <li>the test must be completed within 40 minutes if a stand-alone test for existing cardholders adding Endorsement C only.</li> </ul>
---------------------	--

**Note:** The lifting operations activities must follow the requirements laid out in the joint industry 'Guidance on Lifting Operations in the Construction Sector When Using Excavators', published by the Construction-plant Association and can be downloaded free-of-charge from [www.cpa.uk.net](http://www.cpa.uk.net)

<b>Basic details</b>	Test ref:	Candidate name:
	Tester name:	Candidate ref:
	Tester ref:	Date of test:
	Endorsement A <input type="checkbox"/> Endorsement B <input type="checkbox"/>	Start time of test:
	Endorsement C <input type="checkbox"/>	
	Make and model:	Duration:

MANDATORY		Correctly carried out during the test?	Y/N
<b>Preparing</b>	1. All pre-start and running checks (or responses to relevant questions).		
<b>Travelling</b>	2. Restrictions cleared.		
	3. Excavator set for travel.		
	4. Encountered hazards cleared.		
	5. Boom/dipper arm position when ascending and descending inclines.		
<b>Setting up</b>	6. Faced direction of travel whilst moving.		
	7. Allocated area checked and clear of hazards prior to each activity.		
<b>Working</b>	8. Excavator laterally level whilst excavating.		
	9. Excavated material clear of trench.		
	10. Trenches conform to the stated sizes and tolerances.		
	11. Full bucket loads when excavating (except for finishing work) and loading.		
	12. Loading vehicle and excavator position prior to loading.		
	13. Vehicle evenly loaded but not overloaded.		
	14. Existing bucket removed and replacement bucket installed.		
<b>Shutdown</b>	15. Excavated area reinstated back to the original contours.		
	16. All shutdown and securing procedures.		
<b>Other</b>	17. Legislation, manufacturers' and health and safety requirements complied with.		
	18. Test completed within the given time.		

All of these items must be awarded

Achieved/Not achieved

**FAULTS**

Candidate incorrectly carried out the following:

**Fault    Mark    Penalty**

<b>Travelling</b>	1. Excavator mounting and dismounting.		1	
	2. Full observation before moving.		2	
	3. Full observation whilst travelling.		2	
	4. Observation before slewing upper structure.		2	
	5. Drive sprockets kept to the rear when travelling.		1	
	6. Travel speed matched to the ground type and conditions.		1	
	7. Minimising ground damage when turning (tracked machines only).		1	
<b>Working</b>	8. Site and set for excavating.		2	
	9. Trench excavated in layers.		1	
	10. Sideswiping with bucket.		1	
	11. Edges of the excavations clean and clear.		2	
	12. Material cleanly placed into the loading vehicle.		1	
	13. Contact with vehicle avoided when loading.		2	
	14. Use of steering/hydraulic controls.		1	
<b>Not exceeded eight penalties</b>		Total penalties		

Achieved/Not achieved

**Note:** Mandatory Item 16 – the candidate must ground the bucket, stop the engine and remove the key before exiting the cab, and this must be adhered to at all times during the test.

Endorsement C (Lifting operations)

<b>Basic details</b>	Test ref:	Candidate name:
	Tester name:	Candidate ref:
	Tester ref:	Date of test:
	Endorsement A <input type="checkbox"/> Endorsement B <input type="checkbox"/>	Start time of test:
	Endorsement C <input type="checkbox"/>	
	Make and model:	Duration:

MANDATORY		Correctly carried out during the test?	Y/N
<b>Preparing</b>	19. All pre-start and running checks (or responses to relevant questions).		
<b>Travelling with load</b>	20. Excavator set for travel.		
	21. Encountered hazards cleared.		
	22. Boom/dipper arm position when ascending and descending inclines.		
<b>Setting up</b>	23. Faced direction of travel when moving.		
	24. Allocated area checked and clear of hazards prior to lifting activity.		
	25. Communication arrangements confirmed with slinger/signaller.		
<b>Lifting operations</b>	26. Excavator positioning prior to lifting loads.		
	27. Excavator level prior to lifting and placing loads.		
	28. No contact between load and excavator and/or other obstructions.		
	29. Lifted, moved and lowered load in a controlled manner.		
	30. Route assessed and travelled with the slung load in a controlled manner.		
	31. Instructions conformed with.		
	32. Stability of the machine maintained at all times.		
<b>Shutdown</b>	33. SWL not exceeded at any time.		
	34. Load remains freely suspended (except during lifting and placing).		
	35. Machine controls isolated when loads being attached/disconnected.		
<b>Other</b>	36. Personnel clear of the 'danger' zone when lifting and moving loads.		
	37. All shutdown and securing procedures.		
	38. Legislation, manufacturers' and health and safety requirements complied with.		
	39. Test completed within the given time.		

**All of these items must be awarded** Achieved/Not achieved

FAULTS	Candidate incorrectly carried out the following:	Fault	Mark	Penalty
<b>Travelling with load</b>	15. Excavator mounting and dismounting.		1	
	16. Full observation before moving.		2	
	17. Full observation whilst travelling with slung load.		2	
	18. Observation before slewing upper structure.		2	
	19. Drive sprockets kept to the rear when travelling.		1	
	20. Travel speed matched to the ground type and conditions.		1	
<b>Lifting operations</b>	21. Minimising ground damage when turning with slung load (tracked machines only).		1	
	22. All loads vertically lifted (load not dragged).		2	
	23. Each load lifted clear of surface and checked for integrity.		1	
	24. Load swings minimised during travel and static lifts.		2	
	25. Keeping load height within given tolerance.		1	
	26. All loads placed at given points within the given tolerance.		3	
	27. Use of steering/hydraulic controls.		1	
<b>Not exceeded eight penalties</b>		Total penalties		

Achieved/Not achieved

**Note:**

- *Mandatory Items 19, 37 and 39, and Item 15 in the faults section need not be marked if combining Endorsement C with Endorsements A or B.*
- *Existing CPCS cardholders holding Category A59 seeking Endorsement C need to be measured against all marking items in Endorsement C.*
- *Mandatory Item 35 – If the candidate does not isolate the operating controls during the load attaching/detaching activity, the tester must immediately inform the candidate to do so. The candidate has the option to continue the test but be informed they have not achieved on the test at this time.*

