

# Technical test - Practical

## Excavator 360 – A59

### above 10 tonnes



### 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 5 full bucket loads of the excavator being used for the test</li> <li>• The vehicle must be loaded and discharged at least twice</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>

### Additional resources required – Endorsement C

<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</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>



<p><b>Other equipment</b></p>	<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> <li>• Slinger and signaller assistance</li> <li>• A 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) a boom lowering control device on the raising (main) boom cylinder(s) and meet the requirements of ISO8643:1997</li> <li>b) an RCI* or LMI*</li> </ul> </li> </ul> <p>* An RCI is deemed as a device that meet 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>

<p><b>Sequence</b></p>	<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>
<p><b>Preparing for work</b></p>	<ol style="list-style-type: none"> <li>1. Complete all manufacturers' pre-start and running checks and prepare the excavator for travel as detailed in the operator's manual which must be referred to by the candidate during the activity             <ul style="list-style-type: none"> <li>• Additional information to be identified by the candidate referring to the operator's manual. Tester to decide what information will be identified</li> </ul> </li> </ol>
<p><b>Travelling &amp; manoeuvring</b> <i>(refer to specifications)</i></p>	<ol style="list-style-type: none"> <li>2. Travel to the work area and:             <ul style="list-style-type: none"> <li>- travel up and down the slope</li> <li>- stop and start on the gradient whilst travelling uphill</li> <li>- stop and start on the gradient whilst travelling downhill</li> <li>- track through a chicane which requires left and right hand turns</li> <li>- pass through a restriction</li> <li>- travel over rough terrain</li> </ul> </li> </ol>
<p><b>Setting up for work</b></p>	<ol style="list-style-type: none"> <li>3. Prepare and set the excavator for the relevant work</li> </ol>
<p><b>Working tasks</b> <i>(refer to specifications)</i></p>	<ol style="list-style-type: none"> <li>4. Produce a vertical trench to the specified dimensions</li> <li>5. Complete a square excavation with vertical sides at the end of the dug trench</li> <li>6. Load material into a vehicle</li> <li>7. Establish communication with the machine operator to be loaded</li> <li>8. Change the bucket</li> </ol>
<p><b>Completing work</b></p>	<ol style="list-style-type: none"> <li>9. Reinststate the work area back to the original state</li> </ol>
<p><b>Shutting down</b></p>	<ol style="list-style-type: none"> <li>10. Park the excavator and carry out shut-down and securing procedures</li> </ol>
<p><b>Notes</b></p>	<ul style="list-style-type: none"> <li>• For Activity 2, wheeled excavators must pass through the restriction in both directions (super structure must be slewed 180° when returning through restriction so operator is facing direction of travel).</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>

# Technical test - Practical

## Excavator 360 – A59

### above 10 tonnes

### Activity measurements – Endorsements A and B



AN NOCN JOB CARD

<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 = 15m</li> <li>Over 20 tonnes = 20m</li> </ul> </li> <li>The excavation must be straight within ± 60mm</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>The loading vehicle must require at least 5 x bucket loads to be filled to the capacity</li> <li>The vehicle must be loaded and discharged at least twice</li> </ul>
<b>Test timings</b>	<ul style="list-style-type: none"> <li>The test must be completed within 2 hours and 45 minutes for Endorsements A or B only</li> </ul>

### Activity measurements – 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>	11. Prepare and set the excavator for each lifting operation
<b>Travelling &amp; manoeuvring (refer to specifications)</b>	<p>12. 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>13. 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 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>14. 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>15. 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>16. 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 Activities 10 to 15</li> </ul>

# Technical test - Practical

## Excavator 360 – A59



### above 10 tonnes

### Activity measurements – Endorsements 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>
<b>Test timings</b>	<ul style="list-style-type: none"> <li>The test must be completed in a total time of 3 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)

# Technical test - Practical

## Excavator 360 – A59

### above 10 tonnes

### Basic details



Test ref:	Candidate name:
Tester name:	Candidate ref:
Tester ref:	Date of test:
Endorsement: A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Start time of test:
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)		
	2. Identify and select correct PPE and weather-related equipment to be worn		
<b>Travelling</b>	3. Restrictions cleared		
	4. Excavator set for travel		
	5. Encountered hazards cleared		
	6. Boom/dipper arm position when ascending and descending inclines		
	7. Faced direction of travel whilst moving		
<b>Setting up</b>	8. Allocated area checked and clear of hazards prior to each activity		
<b>Working</b>	9. Excavator laterally level whilst excavating		
	10. Excavated material clear of trench		
	11. Trenches conform to the stated sizes and tolerances		
	12. Full bucket loads when excavating (except for finishing work) and loading		
	13. Establish communication with supporting workers		
	14. Loading vehicle and excavator position prior to loading		
	15. Vehicle evenly loaded but not overloaded		
<b>Shutdown</b>	16. Existing bucket removed and replacement bucket installed		
	17. Excavated area reinstated back to the original contours		
<b>Other</b>	18. All shutdown and securing procedures		
	19. Legislation, manufacturers' and health and safety requirements complied with		
	20. 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. Identify information from the Operator's Manual			2	
	3. Full observation before moving			2	
	4. Full observation whilst travelling			2	
	5. Observation before slewing upper structure			2	
	6. Drive sprockets kept to the rear when travelling			1	
	7. Travel speed matched to the ground type and conditions			1	
	8. Minimising ground damage when turning (tracked machines only)			1	
<b>Working</b>	9. Site and set for excavating			2	
	10. Trench excavated in layers			1	
	11. Sideswiping with bucket			1	
	12. Edges of the excavations clean and clear			2	
	13. Material cleanly placed into the loading vehicle			1	
	14. Contact with vehicle avoided when loading			2	
	15. Use of steering/hydraulic controls			1	
<b>Not exceeded eight penalties</b>			<b>Total penalties</b>		
					<span style="border: 1px solid black; padding: 2px;">Achieved / Not achieved</span>

**Note:** Mandatory item 17 – the candidate must ground the bucket, stop the engine and remove the key before exiting the cab; this must be adhered to at all times during the test.

# Technical test - Practical

## Excavator 360 – A59

### above 10 tonnes

### Basic details – Endorsement C



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

Mandatory		Correctly carried out during the test?	Y/N
Preparing	21. All pre-start and running checks (or responses to relevant questions)		
	22. Identify and select correct PPE and weather-related equipment to be worn		
Travelling with load	23. Excavator set for travel		
	24. Encountered hazards cleared		
	25. Boom/dipper arm position when ascending and descending inclines		
	26. Faced direction of travel when moving		
Setting up	27. Allocated area checked and clear of hazards prior to lifting activity		
	28. Communication arrangements confirmed with slinger/signaller		
	29. Excavator positioning prior to lifting loads		
	30. Excavator level prior to lifting and placing loads		
Lifting operations	31. No contact between load and excavator and/or other obstructions		
	32. Lifted, moved and lowered load in a controlled manner		
	33. Route assessed and travelled with the slung load in a controlled manner		
	34. Instructions conformed with		
	35. Stability of the machine maintained at all times		
	36. SWL not exceeded at any time		
	37. Load remains freely suspended (except during lifting and placing)		
	38. Machine controls isolated when loads being attached/disconnected		
	39. Personnel clear of the 'danger' zone when lifting and moving loads		
Shutdown	40. All shutdown and securing procedures		
Other	41. Legislation, manufacturers' and health and safety requirements complied with		
	42. 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
Travelling with loads	16. Excavator mounting and dismounting		1	
	17. Identify information from the Operator's Manual		2	
	18. Full observation before moving		2	
	19. Full observation whilst travelling with slung load		2	
	20. Observation before slewing upper structure		2	
	21. Drive sprockets kept to the rear when travelling		1	
	22. Travel speed matched to the ground type and conditions		1	
	23. Minimising ground damage when turning with slung load (tracked machines only)		1	
Lifting operations	24. All loads vertically lifted (load not dragged)		2	
	25. Each load lifted clear of surface and checked for integrity		1	
	26. Load swings minimised during travel and static lifts		2	
	27. Keeping load height within given tolerance		1	
	28. All loads placed at given points within the given tolerance		2	
	28. Use of steering/hydraulic controls		1	
<b>Not exceeded eight penalties</b>		<b>Total penalties</b>		
				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.