

# Excavator 360

A59

Above 10 tonne

Technical Test – Practical

## RESOURCES

### Required

Machine	<ul style="list-style-type: none"> <li>• 360 Excavator fitted with a standard excavating bucket using a quick-hitch coupling system</li> </ul>
Area	<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</li> <li>– rough terrain</li> <li>– slope or slopes</li> <li>– spoil/material to load vehicles</li> </ul> </li> </ul>
Other equipment	<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> <li>• Measuring tape for measuring the maximum radius of the excavator</li> <li>• Slinger and signaller assistance</li> </ul>
Loads	<ul style="list-style-type: none"> <li>• 1 x load, able to be slung and weighing not less than 60% of the machine's lifting capacity at full radius</li> </ul>
Notes	<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 metres deep</li> <li>• The load carrying vehicle must have a minimum capacity equivalent to 6 full bucket loads of the excavator being used for the test</li> <li>• All lifting accessories must be fit for purpose and certificated</li> <li>• The weight of the load must be known</li> <li>• Load (lifting) charts for the excavator being used for the test must be available for use</li> <li>• The slinger and signaller must be certificated and competent</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 user for reinstating and changing purposes</li> </ul>

## ACTIVITY

**Instructions**

Sequence	<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, 7 and 8 can be undertaken at any time during the test</li> <li>• Activity 10 must be undertaken at the end of the test</li> </ul> <p>The test must be completed within a given time. The specifications' section gives further information.</p>
Preparing for work	1. Complete all manufacturers' pre-start and running checks and prepare the excavator for travel
Travelling & manoeuvring (refer to specifications)	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>
Setting up for work	3. Prepare and set the excavator for the relevant work
Working tasks (refer to specifications)	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 8. Lift the load 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 given point and detach
Completing work	9. Reinstate the work area back to the original state
Shutting down	10. Park the excavator and carry out shut-down and securing procedures
Notes	<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>• For activity 8, the lift shall be undertaken using static duties only</li> <li>• If the machine is hot, checks unable to be carried out (i.e. coolant) may be assessed by the Tester using verbal questions</li> </ul>

## SPECIFICATIONS

### Activity measurements

Travel restrictions	<ul style="list-style-type: none"> <li>• 800 mm (activity 2)</li> </ul>
Trench depth	<ul style="list-style-type: none"> <li>• 1.0 metre <math>\pm</math> 35 mm and straight within <math>\pm</math> 60 mm</li> </ul>
Trench length	<ul style="list-style-type: none"> <li>• Machine weight: 10–20 tonnes = 15 metres over 20 tonnes = 20 metres</li> </ul>
Square excavation	<ul style="list-style-type: none"> <li>• 3 x buckets wide and a depth of 1.5 metres <math>\pm</math> 35 mm</li> </ul>
Load movement	<ul style="list-style-type: none"> <li>• Maximum height of underside of the load = 1 metre</li> </ul>
Load placing	<ul style="list-style-type: none"> <li>• 100 mm of a given position</li> </ul>
Loading vehicle	<ul style="list-style-type: none"> <li>• Loaded to capacity</li> </ul>
Test timings	<ul style="list-style-type: none"> <li>• The test must be completed within 3 hours and 15 minutes</li> </ul>



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<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
	Make and model	Duration

MANDATORY		Correctly carried out during the test?	Y / N
Preparing	1 All pre-start and running checks (or responses to relevant questions)		
Travelling	2 Restrictions cleared		
	3 Excavator set for travel		
	4 Encountered hazards cleared		
	5 Boom/dipper arm position when ascending and descending inclines		
	6 Faced direction of travel whilst travelling		
Setting up	7 Allocated area checked and clear of hazards prior to each activity		
Working	8 Excavator laterally level whilst excavating		
	9 Excavated material clear of trench		
	10 Trenches conformed to the stated sizes and tolerances		
	11 Full bucket loads when excavating (except for finishing work) and loading		
	12 Loading vehicle and excavator positioned prior to loading		
	13 Vehicle evenly loaded but not overloaded		
	14 Existing bucket removed and replacement bucket installed		
	15 Excavator positioning prior to lifting loads		
	16 SWL not exceeded at all times		
	17 Lifted, moved and lowered load in a controlled manner		
18 Stability of the machine maintained at all times			
Completing	19 Excavated area reinstated back to original contours		
Shutdown	20 All shutdown and securing procedures		
Other	21 Legislation, manufacturers' and health and safety requirements complied with		
	22 Test completed within the given time		
<b>All of these items must be awarded</b>			Achieved / Not achieved

FAULTS	Candidate incorrectly carried out the following:	Fault	Mark	Penalty
Travelling	1 Excavator mounting and dismounting		1	
	2 Full observation before moving		2	
	3 Full observation whilst travelling		2	
	4 Observation before slewing up a 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	
Working	8 Site and set for excavating		2	
	9 Trench excavated in layers		1	
	10 Sideswiping with bucket		1	
	11 Edges of excavation clean and clear		2	
	12 Material cleanly placed into the loading vehicle		1	
	13 Contact with vehicle avoided when loaded		2	
	14 Load placing within given tolerances		2	
	15 Keeping load height within given tolerance		1	
	16 Use of steering/hydraulic controls		1	
<b>Not exceeded 8 penalties</b>			Total penalties	
				Achieved / Not achieved

