

# Excavator 180

A10

Below 5 tonne

Technical Test – Practical

## RESOURCES

### Required

Machine	<ul style="list-style-type: none"> <li>• 180 Excavator with: <ul style="list-style-type: none"> <li>– standard excavating buckets on the loader and backhoe</li> </ul> </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 undulating 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 backhoe bucket (for changing task)</li> <li>• Items to create restrictions for manoeuvring</li> <li>• Laser equipped measuring equipment to ensure trench specifications are met</li> <li>• Lifting accessories for the load to be lifted</li> <li>• Measuring tape for measuring the maximum (backhoe) 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 approximately 0.3 tonne</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• The machine selected for the test must be in serviceable condition and conform with current legislation</li> <li>• The operator's manual must be with the excavator</li> <li>• The incline 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 (front) 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>• Manufacturer's data must be checked to ensure the machine is capable of lifting the specified load to the required radius</li> <li>• The slinger and signaller must be certificated and competent</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 and 4 to 7 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 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 in forward and reverse</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 2 x straight trenches in a 'T' pattern with square starts and finishes 5. Load material into a vehicle 6. Change the (backhoe) bucket 7. Lift the load from minimum radius, position the load at 75% of full radius and rotate for 180 degrees. On completion land the load at a given point and detach 8. Reinststate the work area back to the original using all the function of the multi-purpose bucket
Shutting down	9. Park the excavator and carry out shut-down and securing procedures
Notes	<ul style="list-style-type: none"> <li>For activity 5, at least four loads must be placed by the backhoe, which can be loaded whilst excavating the trenches. The remaining capacity to be loaded with the front loader using spoil from the stockpile</li> <li>The backhoe must be used for activity 7</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>

**Activity measurements**

Travel restrictions	<ul style="list-style-type: none"> <li>500 mm</li> </ul>
Trenches depth	<ul style="list-style-type: none"> <li>0.8 metre ±35mm</li> </ul>
Trenches lengths	<ul style="list-style-type: none"> <li>5 metres and 3 metres</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 2 hours and 45 minutes</li> </ul>

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<b>Basic details</b>	Test ref.	Candidate name
	Tester name	Candidate ref.
	Tester ref.	Date of test
	Make and model	Start time of test
		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 Excavator set for travel		
	3 Restrictions cleared		
	4 Encountered hazards cleared		
	5 Travel direction on slopes		
	6 Full control maintained when travelling on slopes		
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 position prior to loading		
	13 Vehicle evenly loaded but not overloaded		
	14 Excavator stability maintained		
	15 Existing bucket removed and replacement bucket installed		
	16 Excavator position prior to lifting loads		
	17 SWL not exceeded at all times		
	18 Lifted, moved and lowered load in a controlled manner		
	19 Stability of the machine maintained at all times		
	20 Excavated area reinstated back to the original state		
Shutdown	21 All shut down and securing procedures		
Other	22 Legislation, manufacturers' and health and safety requirements complied with		
	23 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 and reversing		2	
	3	Maintaining full observation whilst travelling and reversing		3	
	4	Matching travel speed to the ground type and conditions		1	
	5	Selecting appropriate gear ratios		1	
	6	Front loader low but clear of ground when travelling		2	
	7	Boom and dipper extension locked		2	
	8	Positioning and setting for excavating		2	
Working	9	Excavating trenches in layers		1	
	10	Sideswiping with the bucket		1	
	11	Edges of the excavations clean and clear		2	
	12	Placing material cleanly into the loading vehicle		1	
	13	Not using front loader below ground level when loading		2	
	14	Minimising contact with vehicle when loading		3	
	15	Load placing within given tolerances		2	
	16	Keeping load height within given tolerance		1	
	17	Smooth use of steering, hydraulic, braking and transmission controls		2	
<b>Not exceeded 8 penalties</b>				Total penalties	
					Achieved / Not achieved

