

Tower Crane

A04

Technical Test – Practical

RESOURCES

Required

Machine	<ul style="list-style-type: none"> • Tower crane
Area	<ul style="list-style-type: none"> • Flat surfaces to allow lifting and placing of loads • Structure of at least 5 metres in height within the working radius of the crane • Facilities for out-of-sight lifts to take place
Other equipment	<ul style="list-style-type: none"> • Measuring tape for measuring the full radius of the crane • Slinger and Signaller • Applicable lifting accessories for all loads • Radio communication
Loads	<ul style="list-style-type: none"> • LOAD 1 1 x load being at least 75% of the crane's rated capacity at full radius with 2 falls of rope • LOAD 2 1 x load being a tube or structure not less than 5 metres in length • LOAD 3 1 x load to facilitate activities 7 and 8
Notes	<ul style="list-style-type: none"> • The crane selected must be of an assisted-erect design and cab controlled with an under-hook height of at least 20 metres, meet the specification for the required endorsement, be in serviceable condition and conform with current legislation • The operator's manual must be with the crane • Full radius equates to the configuration of the crane being used for the test • The slinger and signaller must be certificated and competent • All lifting accessories must be fit for purpose and certificated • The weight of all loads must be known

ACTIVITY

Instructions

Sequence	<ul style="list-style-type: none"> • Activity 1 must be undertaken at the start of the test • Activities 3–8 can be undertaken in any order • Activities 6, 7 and 8 may be incorporated with activities 3–5 • Activity 10 must be undertaken at the end of the test <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-use checks and prepare the crane for work
Setting up for work	2 Prepare and set the crane for each lift
Working tasks (refer to specifications)	<p>3 Lift LOAD 1 which must be at least 90% of maximum radius, rotate for at least 180 degrees without changing radius before landing at minimum radius. On completion lift and land at a designated place at mid-radius</p> <p>4 Lift LOAD 1 which must be at mid-radius, rotate over the structure and land in a designated place using a minimum of 75% radius. On completion return the load to the original start point and land at designated place</p> <p>5 Lift LOAD 2 which must be at ground level and at minimum radius and rotate for a minimum of 360 degrees maintaining minimum radius. Land at a designated place</p> <p>6 Lift a load from a designated position, and land at a designated place out-of-sight of the candidate</p> <p>7 Simulate pouring a wall by travelling a load in a straight line for a distance of not less than 6 metres</p> <p>8 Recover simulated 2 metre load swings</p> <p>9 All loads to be made safe following each activity</p>
Shutting down	10 Place the crane in the out-of-service mode and carry out securing procedures
Notes	<ul style="list-style-type: none"> • The Tester must check that the candidate has programmed the RCI/LMI correctly before carrying out each activity • On activities 5 and 7, the load must follow the ground contours and able to be handled by the slinger/signaller • On activity 7, the line must be angled so that both slew and radius change functions are used simultaneously • Activity 9 shall consist of a minimum of 1 x swing in a left to right plane and a minimum of 1 x swing in a forward to reverse plane • Activity 6 must be undertaken twice – once using hand signals and once using radio communication. All other lifts may be undertaken using either radio or hand signals • For the purpose of the test, all hand signals shall conform with BS 7121 Part 1:2006

ACTIVITY CONTINUED

Activity measurements

Load placing	<ul style="list-style-type: none">• To be landed within 100 mm of a designated place
Load swing	<ul style="list-style-type: none">• To be corrected within 3 moves
Test timings	<ul style="list-style-type: none">• The test must be completed within 2 hours

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Basic details	Test reference	Candidate name
	Tester name	Candidate ref.
	Tester ref.	Date of test
	Endorsement A <input type="checkbox"/> 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)		
	2 All crane operations and limit switches checked		
Setting up	3 Area checked and safe prior to setting up for lifting and depositing loads		
	4 Jib positioning prior to lifting loads		
	5 RCI programmed for all lifting duties		
Working tasks	6 Communication arrangements confirmed with the signaller		
	7 SWL not exceeded at all times		
	8 Load integrity & stability maintained at all times		
	9 Loads did not contact any obstructions		
	10 Lifted, moved and lowered all loads in a controlled manner		
	11 All crane movements intentional		
	12 No shock loading		
	13 Combined control use demonstrated/straight line kept during concrete pour		
Shutdown	14 Instructions conformed with		
	15 Loads left in a safe situation		
Other	16 All shut down and securing procedures		
	17 Crane placed into free slew mode		
Other	18 Legislation, manufacturers' and health and safety requirements complied with		
	19 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
Setting up	1 Crane climbing and descending			1	
	2 Full observation prior to moving loads fore and aft			2	
Working tasks	3 Full observation before slewing			2	
	4 Lifting accessories kept clear of the ground			1	
	5 Load swings kept within 0.5 of a metre / rectify swinging			2	
	6 Placing all loads at the given points within the given tolerance			2	
	7 Lifting each load clear of surface and checked for integrity			2	
	8 Lifting all loads vertically (maximum sway – 250 mm)			2	
	9 Landing all loads vertically (maximum sway – 250 mm)			2	
	10 Sequence of using controls			2	
	11 Smooth use of controls			1	
Not exceeded 8 penalties			Total penalties		
					Achieved / Not achieved

