

# Crusher

## A42

### Technical Test – Theory

Roles and responsibilities	1. What is the definition of, or how can a hazard be described?
	A
	2. What is the purpose of a risk assessment?
	A
	3. List SIX typical subject areas that should be covered in a site induction.
	A
	4. What THREE main duties of the Health and Safety at Work Act must employees follow?
	A
	5. What does the Health and Safety at Work Act require employers to do with regards specifically to plant?
	A
	6. a) What is the purpose of a Method Statement and b) what is required of the operator?
	A
	7. Name FOUR different types or levels of sanctions that can be applied (by employers and judicial bodies) to plant operators who do not comply with, or follow legislation and regulations.
	A
	8. Plant operators are generally regarded as 'safety-critical' workers. What does this mean?
	A

*continued...*

Roles and responsibilities continued	9. Name THREE ways in which an operator can minimise their impact upon the environment whilst using the machine.
	A
	10. In what situation does a hard hat NOT need to be worn when operating a crusher?
	A
	11. The operator has to use a new type of crusher that they are unfamiliar with. What do Regulations (i.e. PUWER 98) and other guidance require the operator to have?
	A
	12. What are the possible outcomes if being prosecuted (by judicial bodies) for not complying with legislation and regulations?
	A
	13. Give TWO examples of where The Work at Height Regulations 1995 may apply to crusher operations.
	A
Preparing for work	14. How can a qualification or card benefit a plant operator?
	A
	15. Name THREE ways that a plant operator can contribute in ensuring repeat business with the client or main contractor.
	A
	16. Where should the crusher's Operator's Manual be kept and why?
	A
	17. If the operator has to top-up the hydraulic oil, state TWO precautions to ensure cleanliness of the system.
A	

*continued...*

Preparing for work continued	<b>For questions 18 and 19 the Operator's Manual for the machine being used for the test MUST be available for reference by the candidate</b>
	18. Using the Operator's Manual, state the procedure for adjusting conveyor belt tension.
	A
	19. Using the Operator's Manual, state the cold-starting procedure for the machine.
	A
	20. If checking the oil level using a dipstick, why must gloves be worn?
	A
	21. Apart from the operator, who else may need to use the machine's Operator's Manual?
	A
	22. What is the purpose of the sizing bars on the crusher feed?
	A
	23. Name a) THREE differences between 'cone' and 'jaw' type crushers and b) ONE suitable application for each.
	A
	24. Name THREE requirements of the Noise at Work Act 1994 that apply to crusher operations.
A	
25. Name FIVE items of specific PPE applicable to crusher operations.	
A	
26. What are the THREE actions or stages that a crusher operator undertakes during pre-use inspections?	
A	

*continued...*

Preparing for work continued	27. Name the FOUR key causes of accidents that occur during crushing operations.
	A
	28. When would a harness be used?
	A
	29. a) What is the purpose of a magnetic separator and b) where would it be located?
	A
	30. During work, the engine starts to overheat. Explain the danger if someone tries to remove the radiator or expansion tank cap.
	A
	31. For mobile crushers, when MUST a banksman/signaller be used before moving a mobile crusher?
	A
Setting up for work	32. What problems and hazards can soft ground cause when travelling a mobile unit across a site?
	A
	33. a) What is the minimum distance allowed near open trenches when travelling with a mobile crusher and b) explain why.
	A
	34. Give THREE reasons that may cause a mobile crusher to tip over sideways during travel.
A	
Setting up for work	35. Give TWO reasons why the operator should have an understanding of the type of material being loaded for crushing.
	A
Setting up for work	36. Explain SIX requirements to be taken into account when positioning a crusher prior to work.
	A

*continued...*

Setting up for work continued	37. Describe ONE method of how to adjust a cone type crusher to produce the desired aggregate size.
	A
	38. a) Which part of the crusher applies loading or pressure to the ground and b) name ONE way that pressure can be reduced.
	A
	39. As far as is reasonably practical, where should crushing operations be kept clear of?
	A
	40. What are the requirements for the ramps that are to be used by loading shovels loading the crusher?
	A
	41. What are the requirements for the standing for loading excavators?
	A
42. If setting up to work near a pedestrianised area, state THREE factors that need to be taken into account.	
A	
43. a) What is the recommended minimum distance to be kept away from overhead power lines mounted on wooden poles when setting up the machine and b) explain why a distance should be kept.	
A	
Working tasks	44. If a trench has a depth of 2.0 metres: a) what is the minimum distance to maintain from the edge of the trench when forming stockpiles and b) explain why.
	A
	45. What FOUR steps should initially be taken should a crusher be blocked before remedial work starts?
A	
46. Why should the engine speed be set to the manufacturer's recommendations on magnet equipped machines?	
A	

*continued...*

Working tasks continued	47. Name FOUR possible causes for blockages in crushers.
	A
	48. Why is it recommended to leave a layer of material in the feed hopper during loading?
	A
	49. A previous, traditional method of clearing blockages was the use of a wedge or mouse. Explain why this method must not be used.
	A
	50. If radios are to be used during the crushing operations, what FOUR actions and checks must be made by the loading and crusher operators before use?
	A
	51. When using water suppression, where should the water be applied?
	A
	52. Apart from water, name THREE other methods that can be used to minimise dust.
	A
	53. Name TWO things that can cause 'bridging'.
	A
	54. Name FIVE possible dangers to health if operating the crusher from the platform.
	A
55. During an unblocking activity, even though the crusher may be switched off: a) what else must be done and b) why?	
A	
56. When is it permitted to enter the crushing chamber area?	
A	

*continued...*

Working tasks continued	57. What TWO problems can wet weather cause?
	A
	58. If a crusher has appeared to stall, what are the THREE initial steps to take before remedial work starts?
Completing work	A
	59. What is the meaning of this hand signal (being demonstrated by the Tester)?
	A
Shutdown	60. What checks should be made to stockpiled materials at the end of a working day?
	A
	61. Before leaving the machine for a rest break, after switching off the machine, what final action must be carried out?
Shutdown	A
	62. If parking a mobile unit away from the working area, name THREE places where the machine should NOT be parked.
	A
	63. The crusher operator has been asked to drive a mobile crusher onto a transporter/trailer. a) Who is responsible for the loading operations and b) state FOUR actions to be considered by the operator before loading commences.
Shutdown	A
	64. Why should a crusher be re-fuelled at the end of the day?
Shutdown	A

# Crusher

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## Technical Test – Practical

### RESOURCES

#### Required

Machine	<ul style="list-style-type: none"> <li>• Mobile or Static Crusher</li> </ul>
Area	<ul style="list-style-type: none"> <li>• Ground, clear of hazards able to accommodate the:             <ul style="list-style-type: none"> <li>– crusher</li> <li>– loading method</li> <li>– unprocessed material</li> <li>– processed material</li> </ul> </li> </ul>
Other equipment	<ul style="list-style-type: none"> <li>• Sufficient material fit for processing</li> <li>• Method of loading material into the crusher</li> <li>• Assistance for loading</li> <li>• Harnesses and other specific PPE</li> </ul>
Notes	<ul style="list-style-type: none"> <li>• The machine selected for the test must not be less than 10 tonnes operating weight, be in serviceable condition and conform with current legislation</li> <li>• The operator's manual must be with the crusher</li> <li>• A specification for processed stone must be made available to the candidate</li> <li>• The crusher may be used in combination with a screener allowing a combined test</li> </ul>

### ACTIVITY

#### Instructions

Sequence	<ul style="list-style-type: none"> <li>• Activity 2 must be undertaken at the start of the test</li> <li>• Activity 11 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	<ol style="list-style-type: none"> <li>1 Certify that the crusher is sited appropriately, stable, level and configured for crushing duties</li> <li>2 Complete all manufacturers' pre-start checks</li> </ol>
Setting up for work	<ol style="list-style-type: none"> <li>3 Ensure the material is suitable for crushing and set the crusher for the given specification</li> <li>4 Ensure discharge area(s) is(are) suitable for receiving processed material</li> <li>5 Agree the work process and signals with others involved in the crushing process</li> <li>6 Start the crusher and engage all systems</li> </ol>
Working tasks (refer to specifications)	<ol style="list-style-type: none"> <li>7 Convert uncrushed material into processed material</li> <li>8 Operate the crusher until a stockpile is produced that is 75% of the discharge conveyer height</li> <li>9 During the crushing process, carry out an emergency stop of operations</li> </ol>
Completing work	<ol style="list-style-type: none"> <li>10 Clear all material from the crusher and immediate area</li> </ol>
Shutting down	<ol style="list-style-type: none"> <li>11 Carry out shut-down and securing procedures</li> </ol>
Notes	<ul style="list-style-type: none"> <li>• If this category is being used in combination with a screener, the work activity is complete only when a stockpile is produced that is 75% of the screener's discharge conveyer height</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

Capacity	<ul style="list-style-type: none"> <li>• 75% of maximum working capacity (for the relevant material to be processed)</li> </ul>
Test timings	<ul style="list-style-type: none"> <li>• The test must be completed within 2 hours and 15 minutes</li> </ul>

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### Technical Test – Practical

<b>Basic details</b>	Test reference	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

		Y / N
Preparing	1 Positioned in relevant location	
	2 Checked for stability, security and configured for processing duties	
	3 All pre-start and running checks (or responses to relevant questions)	
	4 Function of emergency stop	
Setting up	5 Positioning and security of safety rails and other devices	
	6 Checked discharge area for hazards prior to processing	
	7 Crusher set to meet given specification	
	8 Communication systems coordinated with others involved in the processing	
	9 Crusher started and all systems engaged in required sequence	
Working	10 Harness worn and attached	
	11 All systems checked for function prior to processing	
	12 Power unit set to required speed	
	13 Material flow to crushing chamber controlled to prevent overloading	
	14 Output of processed material kept above 75% of maximum operating capacity	
	15 Effective communication with others used during processing	
Completing	16 Emergency stop demonstrated during processing	
	17 Used appropriate procedures if blockages occurred	
	18 Operator stayed in a safe place during work	
Shutdown	19 No contact of discharge stockpile with the crusher	
	20 Crusher cleared of material and disposed of following guidelines/regulations	
Other	21 All shutdown and securing procedures	
	22 Legislation, manufacturers' and health and safety requirements complied with	
	23 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	1 Crusher mounting and dismounting		1	
	2 Full observation before starting and during processing		2	
	3 Unsuitable items removed before and during processing		3	
Working	4 Sequence of using controls		2	
	5 Smooth use of all controls		2	
<b>Not exceeded 8 penalties</b>			Total penalties	
				Achieved / Not achieved

