

Model Curriculum

Explosives Handler

SECTOR: Mining
SUB-SECTOR: Mining Operation
OCCUPATION: Blasting
REF ID: MIN/Q0204
NSQF LEVEL: 3



Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

SKILL COUNCIL FOR MINING SECTOR

for

MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/Qualification Pack: '**Explosive Handler**' QP No. '**MIN/Qo2o4 NSQF Level 3**'

Date of Issuance: July 23rd, 2018

Valid up to*: March 31st, 2019

*Valid up to the next review date of the Qualification Pack or the
'Valid up to' date mentioned above (whichever is earlier)

Authorised Signatory
(Skill Council for Mining Sector)



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Explosives Handler

CURRICULUM/SYLLABUS

This program is aimed at training candidates for the job of a “Explosives Handler”, in the “Mining & Allied” Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Explosives Handler		
Qualification Pack Name & Reference ID.	MIN/Q0204		
Version No.	1.0	Version update date	23/07/2018
Pre-requisites to Training	Preferable Class XII		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify and examine explosives. • Illustrate proper procedure to store explosives • Receipt and Issue of explosive material • Ensure the safe transport of explosives • Summarize day to day problem/incidents • Create reports of routine logging and Documentation • Illustrate health and safety measures critical for handling explosives 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Explosives Handler” Qualification Pack issued by “Skill Council for Mining Sector”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Introduction</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 26:00</p> <p>Corresponding NOS Code Bridge Module</p>	<ul style="list-style-type: none"> Outline the general discipline in the class room (Do’s & Don’ts) Explain the role of explosive handler in mining industry Illustrate benching in quarries, dressing of overhangs, undercuts, fencing, first aid and hygiene Illustrate the standing orders in force at the mine. Practice safety in the vicinity of machinery. Recall the characterize the shot-firing and safety regulations. Decide where to take shelter at the time of blasting Use the basic skills of communication Underline the basic reading capabilities to enable reading of signs, notices and/or cautions at site. 	Computer With Internet, LCD Projector,
2	<p>Handling, examining, and identifying explosives</p> <p>Theory Duration (hh:mm) 40:00</p> <p>Practical Duration (hh:mm) 80:00</p> <p>Corresponding NOS Code MIN/N0212</p>	<ul style="list-style-type: none"> Identify the different types of explosives and their use Identify the different types of detonators and their use. Ensure the use of variety gauges and equipment such as galvanometer, multi-meters, ring gauges etc. to detect defects and deterioration in explosive materials. Examine shot holes and test firing circuits Prepare quality deficiency reports 	Helmet, Dust Mask, Goggles, Ear Plug, Gloves, Reflective Jacket, Safety Belt, Gum Boots/ Safety shoes, Fire Extinguisher Cylinders, First Aid Box, Fire Fighting Charts, First Aid Charts, Computer with Internet, Demonstration Table, Aluminum box, Wooden box, Dummy explosive, Exploder, Blasting Cable, Pin Up Boards, White Board
3	<p>Receipt, storage, packing, issue, and transportation of explosives</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 40:00</p> <p>Corresponding NOS Code MIN/N0213</p>	<ul style="list-style-type: none"> Analyze and assign condition codes to stored /received explosives. Ensure proper package of unserviceable explosives for storage Examine damage-in-transit examination of the received explosives Prepare and maintain transit slips for each issue and return transaction Ensures all explosives are properly packaged, marked and labeled in compliance with directives and regulations Examine vehicles prior to loading to determine if the vehicle is suitable for transportation of hazardous materials Recall drivers on proper route plans, fire-fighting procedures and safety concerns prior to release of the vehicle 	Helmet, Dust Mask, Goggles, Ear Plug, Gloves, Reflective Jacket, Safety Belt, Gum Boots/ Safety shoes, Fire Extinguisher Cylinders, First Aid Box, Fire Fighting Charts, First Aid Charts, Computer with Internet, Demonstration Table, Aluminum box, Wooden box, Dummy explosive, Exploder, Blasting Cable, Pin Up Boards, White Board

<p>4</p>	<p>Carry out documentation and reporting</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 37:00</p> <p>Corresponding NOS Code MIN/N0214</p>	<ul style="list-style-type: none"> • Report problems/incidents in a timely manner • Follow reporting procedures as prescribed by the employer • Identify documentation to be completed in one's role • Record details accurately using the appropriate format • Ensure completion of all documentation within stipulated time. • Ensure documents are available to appropriate authorities to inspect. 	<p>Helmet, Dust Mask, Goggles, Ear Plug, Gloves, Reflective Jacket, Safety Belt, Gum Boots/ Safety shoes, Fire Extinguisher Cylinders, First Aid Box, Fire Fighting Charts, First Aid Charts, Computer with Internet, Demonstration Table, Aluminum box, Wooden box, Dummy explosive, Exploder, Blasting Cable, Aluminum container</p>
<p>5</p>	<p>Health & Safety</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 62:00</p> <p>Corresponding NOS Code MIN/N0204</p>	<ul style="list-style-type: none"> • Categorize storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS. • Function how to deal with misfires as per statutory requirement • Outline the safety regulations and procedures in case of fire hazard. • Make use of various grades of fire extinguishers. • Adopt responsibly and safety, so that safety of yourself and other is not at risk, including members of the public • Demonstrate, careful practices in handling explosives. • Identify characteristics of post-blast fumes and take necessary precautions. • Make use of safety gear such as hard hat, respiratory protection, eye protection, ear protection. 	<p>Helmet, Dust Mask, Goggles, Ear Plug, Gloves, Reflective Jacket, Safety Belt, Gum Boots/ Safety shoes, Fire Extinguisher Cylinders, First Aid Box, Fire Fighting Charts, First Aid Charts, Computer with Internet, Demonstration Table, Aluminum box, Wooden box, Dummy explosive, Exploder, Blasting Cable</p>
	<p>Total Duration</p> <p>Theory Duration 105:00</p> <p>Practical Duration 245:00</p>	<p>Unique Equipment Required:</p> <p>Explosive Van as per DGMS, Helmet, Dust Mask, Goggles, Ear Plug, Gloves, Reflective Jacket, Safety Belt, Gum Boots/ Safety shoes, Fire Extinguisher Cylinders, First Aid Box, Fire Fighting Charts, First Aid Charts, Aluminum box, Wooden box, Dummy explosive, Exploder, Blasting Cable</p>	

Grand Total Course Duration: 350 Hours, 0 Minutes

(This syllabus/ curriculum has been approved by SSC: Skill Council for Mining Sector)

Trainer Prerequisites for Job role: “Explosives Handler” mapped to Qualification Pack: “MIN/Q0204”

Sr. No	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “MIN/Q0204”.
2	Personal Attributes	This job requires sensitivity to problem solving, safety orientation, reading, writing and communication skills and good agility. The person should be of good physical condition with good vision and must pass through periodic medical tests.
3	Minimum Educational Qualifications	Class X/ ITI or Diploma in Mining/ Mechanical or B-Tech in Mining/ Mechanical
4a	Domain Certification	Certified for Job Role: “Explosives Handler” mapped to QP: “MIN/Q0204”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score as per SSC guideline is 80%.
5	Experience	<ol style="list-style-type: none"> 1. Class X/ ITI – 6 years 2. Diploma in Mining – 5 years 3. B-Tech in Mining – 4 years

Annexure: Assessment Criteria

Assessment Criteria for Explosives Handler	
Job Role	Explosives Handler
Qualification Pack	MIN/Q0204
Sector Skill Council	Skill Council for Mining Sector

Guidelines for Assessment
1.Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2.The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3.Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4.Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training Centre based on these criteria.
5.To pass the Qualification Pack, every trainee should score a minimum of 50% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessment Outcome	Assessment Criteria	Marks Allocation				
		Total (100)	Marks	Out Of	Theory	Skills Practical
1. MIN/N 0212 (handling, examining, and identifying explosives)	PC1. Identify different types of explosives and their use	25		5	2	3
	PC2. Identify different types of detonators and their use.			5	2	3
	PC3. Use a variety of gauges and equipment such as galvanometer, multimeters, ring gauges etc. to detect defects and deterioration in explosive materials.			5	1	4
	PC4. Examine shot holes and test firing circuits			5	0	5
	PC5. Prepare quality deficiency reports			5	2	3
		Total		25	7	18
2. MIN/ N 0213 (receipt, storage, packing, issue, and transportation of explosives)	PC1. Test and assign condition codes to stored /received explosives.	25		4	1	3
	PC2. Properly packages unserviceable explosives for storage			4	1	3

	PC3. Performs damage-in-transit examination of the received explosives		3	0	3
	PC4. Prepares and maintains transit slips for each issue and return transaction		4	1	3
	PC5. Ensures all explosives are properly packaged, marked and labelled in compliance with directives and regulations		3	1	2
	PC6. Visually examine vehicles prior to loading to determine if the vehicle is suitable for transportation of hazardous materials		3	1	2
	PC7. Briefs drivers on proper route plans, fire-fighting procedures and safety concerns prior to release of the vehicle		4	1	3
		Total	25	6	19
3. MIN /N 0214 (carry out documentation and reporting Explosive Handler)	PC1. Report problems/incidents in a timely manner	25	5	2	3
	PC2. Follow reporting procedures as prescribed by the employer		4	1	3
	PC3. Identify documentation to be completed in one's role		4	1	3
	PC4. Record details accurately using the appropriate format		4	2	2
	PC5. Complete all documentation within stipulated time.		4	1	3
	PC6. Ensure documents are available to appropriate authorities to inspect		4	1	3
		Total	25	8	17
4. MIN/ N0204 (Health and Safety)	PC1. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.	30	4	1	3
	PC2. Deal with misfires as per statutory requirement		3	1	2
	PC3. Comply with safety regulations and procedures in case of fire hazard.		3	2	1
	PC4. Operate various grades of fire extinguishers.		3	0	3

	PC5. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public		3	0	3
	PC6. Demonstrate careful practices in handling explosives.		3	1	2
	PC7. Identify characteristics of post-blast fumes and take necessary precautions.		3	1	2
	PC8. Wears safety gear such as hard hat, respiratory protection, eye		3	0	3
		Total	25	6	19