

# NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

**NSDA Reference**

*To be added by NSDA*

## CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

### **Name and address of submitting body:**

Skill Council for Mining Sector (SCMS)  
FIMI House, B-311, Okhla Industrial, Phase-1  
New Delhi-110020

### **Name and contact details of individual dealing with the submission**

**Name:** A. K. Bhandari

**Position in the organisation:** Chief Executive Officer

### **Address if different from above**

Same as above

**Tel number(s):** +91-11-26814593

**E-mail address:** scms@skillcms.in

## **List of documents submitted in support of the Qualifications File**

1. Sector Profiling
2. Occupational Map & Progression matrix
3. Protocol for Affiliation of Assessment Bodies and Assessment Framework
4. List of Companies which participated in the NOS development process including validation
5. Validation of Occupational Standards by Industry

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## SUMMARY

<b>Qualification Title</b>	Jack Hammer Operator
<b>Qualification Code</b>	MIN/Q0212
<b>Nature and purpose of the qualification</b>	<p>This is a Qualification Pack (QP), corresponding to Level – 4 and includes 3 NOSs.</p> <p>Targeted learners: This qualification will equip the trainees to become Jack Hammer Operator. He/she would do operating and servicing of Jack Hammer.</p> <p>Main purpose of the qualification – is to get unemployed people into work and also to upgrade the skills of Skilled Helpers already in employment and to enable them to take up this job roles.</p>
<b>Body/bodies which will award the qualification</b>	Skill Council for Mining Sector (SCMS)
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Skill Council for Mining Sector (SCMS)
<b>Body/bodies which will carry out assessment of learners</b>	<ol style="list-style-type: none"> <li>1. Anant Learning and Development, New Delhi.</li> <li>2. Aspiring minds, New Delhi</li> <li>3. Eduworld Consultants Pvt. Ltd, Punjab</li> <li>4. India Skills Pvt. Ltd, New Delhi</li> <li>5. Navriti Technologies Private limited, Karnataka</li> <li>6. Prima Competencies Pvt. Ltd., New Delhi</li> <li>7. Skill Mantra Edutech Consulting India Pvt. Ltd, MP</li> <li>8. Trendsetters Skill Assessors Pvt. Ltd, Haryana</li> <li>9. METTL, New Delhi</li> <li>10. MFEELD, New Delhi</li> <li>11. SP Institute of Workforce Development, Uttar Pradesh</li> </ol>
<b>Occupation(s) to which the qualification gives access</b>	<p>Jack Hammer Operator</p> <p><b>Brief Job Description:</b> Jack hammers' common application is development of benches in open pit mine. The jack hammer is in regular use in Underground mines face development and overhand drilling in slope shrinkage. The jack hammer operator is responsible for all aspects of the operation, ensuring both stability of the roof and sides and overseeing the support group for bolting, resigning plate tightening etc.</p>
<b>Licensing requirements</b>	No Licensing required. But must undergo Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966.
<b>Level of the qualification in the NSQF</b>	4

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<b>Anticipated volume of training/learning required to complete the qualification</b>	250 Hours		
<b>Entry requirements and/or recommendations</b>	Class-X pass		
<b>Progression from the qualification</b>	<p>The job role allows both horizontal and vertical mobility.</p> <p>a) Horizontal mobility as HEMM / Other extraction machinery operators etc.</p> <p>b) Vertical mobility as Driller, Mining mate / Mining Supervisor with requisite upskilling and qualifications.</p>		
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b>	RPL arrangements for in-service workers at mine location as per policies laid out by MSDE.		
<b>International comparability where known</b>	NA		
<b>Date of planned review of the qualification.</b>	26/09/2019		
<b>Formal structure of the qualification</b>			
<b>Title of component and identification code.</b>	<b>Mandatory/ Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
Includes 3 NOSs -			
1. MIN/N 0241-Carry out pre-operation checks and operation of the Jack Hammer.	M	250 Hours	4
2. MIN/N 0242-Routine maintenance and troubleshooting.	M		
3. MIN/N 0901: Comply with work site health and safety	M		

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## **SECTION 1** **ASSESSMENT**

### **Body/Bodies which will carry out assessment:**

#### **Name of assessment bodies:**

1. Anant Learning and Development, New Delhi.
2. Aspiring minds, New Delhi
3. Eduworld Consultants Pvt. Ltd, Punjab
4. India Skills Pvt. Ltd, New Delhi
5. Navriti Technologies Private limited, Karnataka
6. Prima Competencies Pvt. Ltd., New Delhi
7. Skill Mantra Edutech Consulting India Pvt. Ltd, MP
8. Trendsetters Skill Assessors Pvt. Ltd, Haryana
9. METTL, New Delhi
10. MFEELD, New Delhi
11. SP Institute of Workforce Development, Uttar Pradesh

### **Will the assessment body be responsible for RPL assessment?**

Yes. RPL assessment process as laid out by MSDE.

### **Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:**

In line with defined assessment criteria, Assessment strategy, methodology and process are as per MSDE directives. It has planned to use audio-video recording of assessment.

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## ASSESSMENT EVIDENCE

### CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role:** Jack Hammer Operator

**Qualification Pack:** MIN/Q0212

**Sector Skill Council:** Mining

Sr. No.	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 of the theory/knowledge will be based on written test/viva-voce or both while skill test shall be hands on practical. Behaviours and attitude will be assessed while performing the task.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training Centre (as per assessment criteria given)
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 70% score including Behaviours separately in each attributes.
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 outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Mark	Out Of	Theory	Skills Practical
		<b>100</b>	<b>100</b>	<b>30</b>	<b>70</b>
1. MIN/N0241: pre-operation checks and operation of the Jack Hammer.	PC1.Understand the shift / day's production plan and schedule from Foreman / Mine sirdar / site engineer.	<b>50</b>	4	2	2
	PC2.Understand site information and receive idea about type of rock to be encountered / stability etc.		3	2	1
	PC3. Plan for right air flush or wet flush drilling, type of tool and mounting required.		3	1	2
	PC4.Choose the proper weight of the jackhammer for the job.		3	2	1
	PC5. carry out pre-operational inspection of jackhammer to ensure machine is in good order and all guards, handles and safety mechanisms		4	1	3

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	are fitted and operational;				
	PC6. Inspect electrical cable and junction points to determine whether the cable and plug is in good order or needs replacing; Check whether the electrical lead is connected to an approved safety switch.		3	0	3
	PC7. Check pneumatic connection and hose joints for Pneumatic Jack hammers.		3	0	3
	PC8. Inspect whether right type of chisel bit is fitted and whether the bit/point is in good order or needs replacing.		3	0	3
	PC9. Check whether scaling of loose rocks have been done and the area is safe for operation.		2	1	1
	PC10. Overseeing the support group for bolting, re-syncing plate tightening etc.		2	1	1
	PC11. Check and as and when required, to ensure proper scaling/dressing of loose rocks from the roof and wall of the worksite.		2	0	2
	PC12. Ensure cleaning of the drill site.		3	0	3
	PC13. Operate the Jack Hammer as per production plan and schedule.		4	2	2
	PC14. Periodically check chisel bits for spending need and other operating parameters etc.		2	1	1
	PC15. Shut off the air supply and relieve pressure from the supply hose before changing tool points. Do the same when leaving the jackhammer unattended.		2	0	2
	PC16. Ensure all machine consumables and spares (chisel bits / compressed air / couplings/ rods etc.) are used to their maximum potential.		3	1	2
	PC17. Reduce downtime and wastage.		2	1	1
	PC18. Check and ensure ongoing proper ventilation of the worksite for UG mines.		2	0	2

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			50	15	35
2. MIN/N0242: Routine maintenance and troubleshooting.	PC1. Carry out preliminary & visual checks. Observe any unusual noise, crack, vibration, leak, spillage, accumulation etc. on the Jack Hammer and supply pneumatic / hydraulic /electro pneumatic system and seek corrective measures.	<b>30</b>	3	1	2
	PC2. To check this for proper functionality of gauges, indicators, and sensor. Observe any fault message and diagnose the problem solution. Inform Technician and Fitters for any major repair.		3	1	2
	PC3. Track machine-operating hours to assess the right service schedule.		2	1	1
	PC4. Clean air filters dust bowls. Check for any leakage / damaged hoses.		2	1	1
	PC5. Replace chisel bits when required.		2	0	2
	PC6. Check structural integrity and any crack failure of stand or support structure.		2	1	1
	PC7. Drain water and sediment /fuel separators. Replenish coolants, lubricants and fluids.		2	0	2
	PC8. Carry out required lubrication, greasing and oil change as required.		3	1	2
	PC9. Ensure proper Lock out and Tag out. Ensure the Jack Hammer air supply is shut off and pressure is relieved in the supply hose before changing tool points or carry out any maintenance activity.		2	1	1
	PC10. Ensure cleaning of the drilling site and dispose of waste material and broken parts at appropriate place.		2	0	2
	PC11. Check the machine parameters before restart the machine operation.		2	1	1
	PC12. Assess when the problem is beyond his competence and report the problem to Technicians / Site engineer.		3	0	3
	PC13. Update the daily/weekly maintenance sheets and logbook with works carried out and		2	1	1

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	further works to be done.				
			<b>30</b>	<b>9</b>	<b>21</b>
3. MIN/N0901:  Comply with workplace Health and safety.	PC1. Comply with occupational health and safety regulations adopted by the employer.	<b>20</b>	2	1	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		2	1	1
	PC3. Follow the correct safety steps in case of accident or major failure.		2	1	1
	PC4. Comply with safety regulations and procedures in case of fire hazard.		2	0	2
	PC5. Operate various grades of fire extinguishers.		2	1	1
	PC6. 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		2	1	1
	PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		2	0	2
	PC8. Deal with misfires as per statutory requirement		1	1	0
	PC9. Identify characteristics of post-blast fumes and take necessary precautions.		2	1	1
	PC10. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection.		1	0	2
	PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.		1	0	1
	<b>Total</b>		<b>20</b>	<b>7</b>	<b>13</b>
	<b>QP Total</b>		<b>100</b>	<b>29</b>	<b>71</b>
	<b>Percentage Weightage:</b>			<b>29%</b>	<b>71%</b>
	<b>Minimum Pass% to qualify (aggregate):</b>			<b>70%</b>	

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### **Means of assessment 1**

Written test, viva and practical assessment, in line with defined assessment criteria and approved assessment policy.

### **Pass/Fail**

To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.

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### SECTION 2

#### EVIDENCE OF LEVEL

Summary of Direct Evidence:

Generic NOS is/are linked to the overall authority attached to the job role.

#### OPTION A

Title/Name of qualification/component: <b>Jack Hammer Operator. QP Number - MIN/Q 0212</b>		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<p>This process requires the individual to carry out mine extraction operation using standard machinery. The drilling process demands a team work. It requires the Operator to take responsibility and undertake operation in the confine of the mine in known environments and regular tasks.</p> <p>The individual should also be skilled in consulting teams to desired outcomes in a consistent fashion.</p>	<p>Ensure proper Lock out and Tag out. Ensure the Jack Hammer air supply is shut off and pressure is relieved in the supply hose before changing tool points or carry out any maintenance activity. Work independently in familiar, predictable, routine, situation of clear choice.</p>	4
Professional knowledge	<p>Knowledge about the different types of jackhammer: Pneumatic, Electro mechanical or electro pneumatic, Hydraulic. Type of stand and mounting rigs and their operating principle like Percussive, Rotary Percussive etc. Knowledge about the machines i.e. it is components, assemblies and accessories.</p> <p>Knowledge about compressor, storage and compressed air, pipeline for transmission and assembly of pipes.</p> <p>How to remove and fit handles, mount on the carriage, replace chisels to the body of the jackhammer.</p> <p>Know how to troubleshoots and maintain the jackhammer.</p> <p>Hazardous manual tasks and ergonomic issues associated with the operation of a jackhammer.</p> <p>The performance standard and procedure followed by the</p>	<p>Factual knowledge of field of knowledge or study.</p>	4

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Title/Name of qualification/component: Jack Hammer Operator. QP Number - MIN/Q 0212			Level: 4
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	<p>company. Standing orders in force at the mine. Safety in the vicinity of machinery. Incident Reporting and daily reporting structure in the site. Contact person in case of emergency.</p>		
Professional skill	<ul style="list-style-type: none"> <li>Analyse repetitive issues and discuss with supervisor / mechanic.</li> <li>Decide when to conduct the routine maintenance.</li> <li>Decide on types of tools and tackles to be used.</li> <li>Plan work according to the schedule</li> <li>Provide services of the highest order to ensure customer satisfaction.</li> <li>Report problem that he can't resolve to appropriate authority.</li> <li>Identify sources of support that can be availed for problem solving.</li> <li>Analyze, evaluate and apply the information gathered from observations and experience.</li> </ul>	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts.	4
Core skill	<ul style="list-style-type: none"> <li>Should be able to fill the respective checklist.</li> <li>Should be able to observe the problem in equipment and report it to supervisor.</li> <li>Write requisition to internal customer on the requirement of tools, gauges etc. Read the instructions given in the checklist</li> <li>Read the production plan, components and spares names and nomenclature as per OEM Manuals.</li> <li>Read the log books and any problem reported by co-workers</li> <li>Read the risk management plan of the job.</li> </ul>	Language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social political and natural environment.	4

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Title/Name of qualification/component: Jack Hammer Operator. QP Number - MIN/Q 0212			Level: 4
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Discuss repetitive issue in any particular equipment with supervisor</li> </ul> <p>Discuss task list, schedules and workload with the co-worker</p> <p>Question internal customer/supervisor appropriately in order to understand the nature of the problem.</p>		
Responsibility	<p>Jack hammers' common application is development of benches in open pit mine. The jack hammer is in regular use in Underground mines face development and overhand drilling in slope shrinkage. The jack hammer operator is responsible for all aspects of the operation, ensuring both stability of the roof and sides and overseeing the support group for bolting, resigning plate tightening etc.</p>	<p>Responsibility for own work and learning.</p>	4

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## SECTION 3

### EVIDENCE OF NEED

<p><b>What evidence is there that the qualification is needed?</b></p> <p>SCMS carried out comprehensive survey and collected feedback from industry with respect to roles for which qualification packs development are required. The occupational map was finalised accordingly. The need of this particular qualification was revalidated during the comprehensive interaction with Industry in the process of seeking their input for QP/NOS development.</p>
<p><b>What is the estimated uptake of this qualification and what is the basis of this estimate?</b></p> <ul style="list-style-type: none"><li>• Skills Gap analysis Reports for industry demand.</li><li>• RPL certification of approx. 1000 in-service workers yearly.</li></ul>
<p><b>What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?</b></p> <ul style="list-style-type: none"><li>• NSDC list of Approved and Under-Development QPs were checked prior to commissioning the work.</li><li>• NSDC QRC team also confirmed the same.</li><li>• Checked at <a href="http://www.nqr.gov.in">www.nqr.gov.in</a></li></ul>
<p><b>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?</b></p> <ul style="list-style-type: none"><li>• SCMS Review committee will review all QP/NOS at regular periodicity or as per NSDC guidelines.</li><li>• Review will be based on –<ol style="list-style-type: none"><li>a) Revalidation of minimum requisites to perform in a Job role from pan India industry partners.</li><li>b) Any change in technology and process relevant to the particular QP and Job roles.</li></ol></li></ul>
<p><b>Has the qualification been through a formal approval procedure(s)?</b> <b>(If so, explain the process and the outcome.)</b></p> <p>Yes, NSDC QRC process has been adhered to. This includes minimum 30 validations for the QP from employers in the sector. This has been across small, medium and large companies.</p>
<p><b>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?</b></p> <p>SCMS Review committee will review all QP/NOS at regular periodicity or as per NSDC guidelines. The review will factor in -</p> <ul style="list-style-type: none"><li>• Feedback from the Industry and Industry Association</li><li>• Recommendation and suggestions from the Industry Player and Industry Association</li></ul>
<p><b>What arrangements are in place to inform people about the qualification(s) and the advantages it offers?</b></p> <ul style="list-style-type: none"><li>• Employer workshops for buy-in and recognition</li><li>• Training centres are being enrolled and informed of the potential</li><li>• Counselling sessions by training provider for potential recruits are being encouraged</li></ul>

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## **SECTION 4**

### **EVIDENCE OF PROGRESSION**

**What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?**

**This qualification allows Horizontal and vertical mobility options. Potential mobility options are –**

- a) Horizontal mobility as HEMM / Other extraction machinery operators etc.**
- b) Vertical mobility as Mining mate / Mining Supervisor with requisite upskilling and qualifications.**

**Businesses or organisations are expected to use this qualification as a basis in recruiting workers**

Annexure 1: Occupational Map