

# 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**

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**Same as above**

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## **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>	Technical Helper- Mechanical
<b>Qualification Code</b>	MIN/Q0306
<b>Nature and purpose of the qualification</b>	<p>This is a Qualification Pack (QP), corresponding to Level – 2 and includes 3NOSs.</p> <p>Targeted learners: This qualification will equip the trainees to become Technical Helper- Mechanical. He/she would assist Technician/Operator in servicing particular machinery or subsection in mines.</p> <p>Main purpose of the qualification – is to get unemployed people into work and also to upgrade the skills of Workers / 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.
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Skill Council for Mining Sector.
<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>Technical Helper- Mechanical</p> <p><b>Brief Job Description:</b> Technical Helper (Mechanical) assists Mechanic or Technician in carrying out inspection of equipment and condition based maintenance, scheduled preventive maintenance of the HEMM, Light vehicles and other mine equipment and assists in repair &amp; troubleshooting in case of breakdown. He has to attend and aid in lifting and welding works as well. Equipments include all machines used in opencast and underground mines, common facilities, machinery used in transportation &amp; material handling, HEMM including Shovel, Dump Trucks, Dozer, Grader, Wheel Loader, Bucket Wheel Excavator, Crane, Reclaimer, Stacker etc. and all Heavy &amp; light vehicles.</p>

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<b>Licensing requirements</b>	NA. 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>	2		
<b>Anticipated volume of training/learning required to complete the qualification</b>	250 Hours		
<b>Entry requirements and/or recommendations</b>	Class-VIII pass		
<b>Progression from the qualification</b>	<p>The job role allows both horizontal and vertical mobility.</p> <ul style="list-style-type: none"> <li>a) Horizontal mobility as Skilled Helper roles in Mining Operation or Engineering services.</li> <li>b) Vertical mobility as Asst. Operator / Operator roles of Mine extraction machinery / HEMM or as Technician in Engineering services with requisite upskilling and qualifications.</li> </ul>		
<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/N0313 – Assist in mechanical maintenance of machinery and HEMM.	M	250 Hours	2
2. MIN/N0314 – Assist in breakdown servicing.	M		
3. MIN/N0901 – Comply with worksite Health & 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 directive of MSDE.

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### ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.

#### CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role:** Technical Helper – Mechanical.

**Qualification Pack:** MIN/Q0306

**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. Behavior 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 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 outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
		100	100	30	70
1. MIN/N0313: To assist in routine and preventive mechanical maintenance of mine machinery, HEMM and equipment.	PC1. To clean the work area and assist the Technician in conducting daily inspection and check of different HEMM machine.	45	3	1	2
	PC2. Carry out preliminary & visual checks. Observe any unusual noise, vibration, leak, spillage, accumulation etc. and communicate the same to Technician / Operator.		3	2	1
	PC3. To check gauges, indicators, and sensor are fully functional. Observe any alarm message and report the same to Technician or Operator.		3	1	2
	PC4. Follow all the work instruction from Fitter / Technician related to routine maintenance.		3	3	0

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PC5. Check oil and lubricant level and perform greasing & lubrication in accordance with charts; check and changes oil, oil filters and air filters, replaces hoses, belts, water pumps and other parts.	3	0	3
PC6. Check fan belts, hoses, wiper blades and other safety equipment; check water and antifreeze levels; check air in tires and inflate tires and changes tires as necessary.	3	0	3
PC7. Check belts, chains and other drive components. Check track chain bolts and give torque if required.	3	0	3
PC8. Take direction from Technician and identify right machine spares, tools and tackles required for the repair and maintenance job on the machines.	2	1	1
PC9. To get necessary authorisation and approval from Technician and mechanic for issuance of the spares and other materials.	2	1	1
PC10. To get the items issued from store and carry right tools and tackles required to attend the breakdown.	2	1	1
PC11. Assist Technician / Fitter to execute preventive maintenance schedule	3	1	2
PC12. Assist in installing new machines.	2	1	1
PC13. Assist mechanic in overhauling of subassemblies like engine, transmission, final drive etc.	3	0	3
PC14. To clean the machine components and assist the technician/mechanics in fitment of the right components.	3	0	3
PC15. Assist in changing the seal kit of hydraulic cylinders. Assist in performing the overhaul of brake and brake system.	3	0	3
PC16. To assist technicians in checking of machine before handing over.	2	1	1

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	PC17. To dispose of waste material and broken parts at appropriate place.		2	0	2
			<b>45</b>	<b>13</b>	<b>32</b>
2. MIN/N0314: To assist in breakdown servicing and repair of mine machinery and vehicles.	PC1.To cleans the work area and broken assemblies; assist the Technician in conducting inspection and check of the machine.	<b>35</b>	4	1	3
	PC2.Carry out preliminary & visual checks. Assist technician in identifying any unusual noise, vibration, leak, spillage, accumulation etc.		3	1	2
	PC3.To check drives, gauges, indicators, and sensor. Observe any alarm message and report the same to Technician or Fitter.		3	1	2
	PC4. To clean the machine components and assist the technician/mechanics in fitment of the right components.		4	1	3
	PC5. Issue spare parts after obtaining Technician's approval and to carry all the tools and tackles and spares required for the job to the worksite.		3	2	1
	PC6.To carry out required lubrication, greasing and oil change as required.		4	1	3
	PC7.To assist technicians in checking of all gauges, indicators and sensor and machine performance before handing over and recommissioning.		4	1	3
	PC8. Carry out Dry acetylene and arc welding. Operate grinding wheel safely and at correct RPM.		4	1	3
	PC9. Fabricate plate, angle, channel etc. and to repair some of the breakdown parts of vehicle, machine and equipment.		4	1	3
	PC10.Barricade the drop zone if welding cutting is being performed at height		2	0	2
			<b>35</b>	<b>10</b>	<b>25</b>

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3. MIN/N0901 Health & 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>30</b>	<b>70</b>	
	<b>Percentage Weightage:</b>		<b>30%</b>	<b>70%</b>	
	<b>Minimum Pass% to qualify (aggregate):</b>		<b>50%</b>		



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### **Means of assessment 1**

As per defined assessment criteria given in qualification packs on practical mode, written and viva.

### **Pass/Fail**

To pass the Qualification Pack, every trainee should score a minimum of 50% 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>Technician Helper-Mechanical. QP Number - MIN/Q 0306</b>			Level: 2
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process	This process requires the individual to concentrate on the job at hand and complete it without any accidents. Diligence and hardworking is a desired attribute for individuals in this role. The individual should also be skilled to assist operator, technician and seniors to service and maintain mine machinery and carry out the necessary instruction given by seniors.	prepares machine/equipments ready, to carry out process that are repetitive on regular basis, more of practice, Follow the correct safety steps in case of accident or major failure.	2
Professional knowledge	Basic knowledge of Mine machinery and their functions and checklist for machine and component condition. Know right lubricants for conveyors, drives, gearboxes, chain and sprocket drives and greasing point of different machines. Know the right set of tools and tackles required for Maintenance. Procedure of acquisitions of tools and tackles from store and return policies. different types of jacks and lifting tackles and their capacity How to operate compressors and other mine machinery with or without load.	Material tools and application in a limited context of visual inspections, understands context of inspection and maintenance work and right quality	2

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Title/Name of qualification/component: <b>Technician Helper-Mechanical. QP Number - MIN/Q 0306</b>		Level: 2	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	How to dismount subassemblies like engine, transmission, final drive etc.		
Professional skill	<p>Planning of work according to the schedule.</p> <p>Decide when to conduct the routine maintenance</p> <p>Decide on types of tools and tackles to be used.</p> <p>Analyze repetitive issues and discuss with supervisor/mechanic.</p> <p>Planning for cleaning of the equipments.</p> <p>Detect problems in day to day tasks.</p> <p>Report problem that he can't resolve to appropriate authority</p> <p>Identify sources of support that can be availed for problem solving.</p>	limited service skill, used in limited context, select and apply tools, assist in operation and maintenance works with no variables,	2
Core skill	<p>Fill the respective maintenance checklist.</p> <p>Create small notes or work documents for Fitter or Technician for any machine problem or observation.</p> <p>Write requisition to internal customer on the requirement of tools, gauges etc.</p> <p>Read the instructions given in the checklist</p> <p>Read the types of lubricants , grease etc.</p> <p>Read the problems reported by the operators</p> <p>Discuss repetitive issue in any particular equipment with seniors.</p> <p>Effectively communicate to Operators, Technicians and others about job completion and any observations.</p> <p>Attentively listen and comprehend the information given by speaker.</p>	receive and transmit written and oral messages, basic arithmetic knowledge, understanding hygiene and environment and work place safety	2
Responsibility	Technical Helper (Mechanical) assists Mechanic or Technician in carrying out inspection of equipment and condition based maintenance, scheduled preventive maintenance of the equipment and assists in repair &	No direct responsibility. Works under instruction and close supervision of Operator and Technicians.	2

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Title/Name of qualification/component: <b>Technician Helper-Mechanical. QP Number - MIN/Q 0306</b>		Level: 2	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	troubleshooting in case of breakdown. He has to attend and aid in lifting and welding works as well. Equipments include all machines used in opencast and underground mines, common facilities, machinery used in transportation & material handling, HEMM including Shovel, Dump Trucks, Dozer, Grader, Wheel Loader, Bucket Wheel Excavator, Crane, Reclaimer, Stacker etc. and all Heavy & light vehicles.		

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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>• Skilling of new inductees and up-skilling of 500 workers has been estimated 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.**

- a) Horizontal mobility as Skilled Helper roles in Mining Operation or Engineering services.**
- b) Vertical mobility as Asst. Operator / Operator roles of Mine extraction machinery / HEMM or as Technician in Engineering services with requisite upskilling and qualifications.**

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

Annexure 1: Occupational Map