

QUALIFICATION PACK - OCCUPATIONAL STANDARD FOR MINING INDUSTRY

What are Occupational Standard (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standard that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Contents

1. [Introduction and Contacts.....Page.1](#)
2. [Qualification Pack.....Page.2](#)
3. [Glossary of Key Terms Page.3](#)
4. [OS Units.....Page.4](#)

Introduction

Qualifications Pack- Track Layer Operator

SECTOR: MINING

SUB-SECTOR: Underground Mines

OCCUPATION: Mining Operations

REFERENCE ID: MIN/Q 0431

ALIGNED TO: NCO-2004/NIL

A Track layer operator ensures end to end laying of the track and maintenance of the same

Brief Job Description: The role of the person involved in track laying is to lay, maintain, divert and repair the rail tracks in an underground mine used for hauling the extracted mineral or the raw material used for the extraction of the mineral, depending upon the size of tubs used for hauling.

Personal Attributes: Ability to plan and prioritize, quality consciousness, safety orientation, Physique to sustain strenuous conditions, Dexterity, Reading, writing and communication skills, Ability to use fingers, hands and feet with ease to complete the assigned task (Dexterity), high precision and sensitivity to problem solving and sensitivity towards safety for self and equipment.

Job Details

Qualification Pack Code	MIN/ Q0431		
Job Role	Tracklayer Operator		
Credits(NSQF)	TBD	Version number	1.0
Industry	Mining	Drafted on	15/12/2104
Sub-sector	Underground Mines	Last reviewed on	24/03/2015
Occupation	Mining Operations	Next review date	24/03/2017

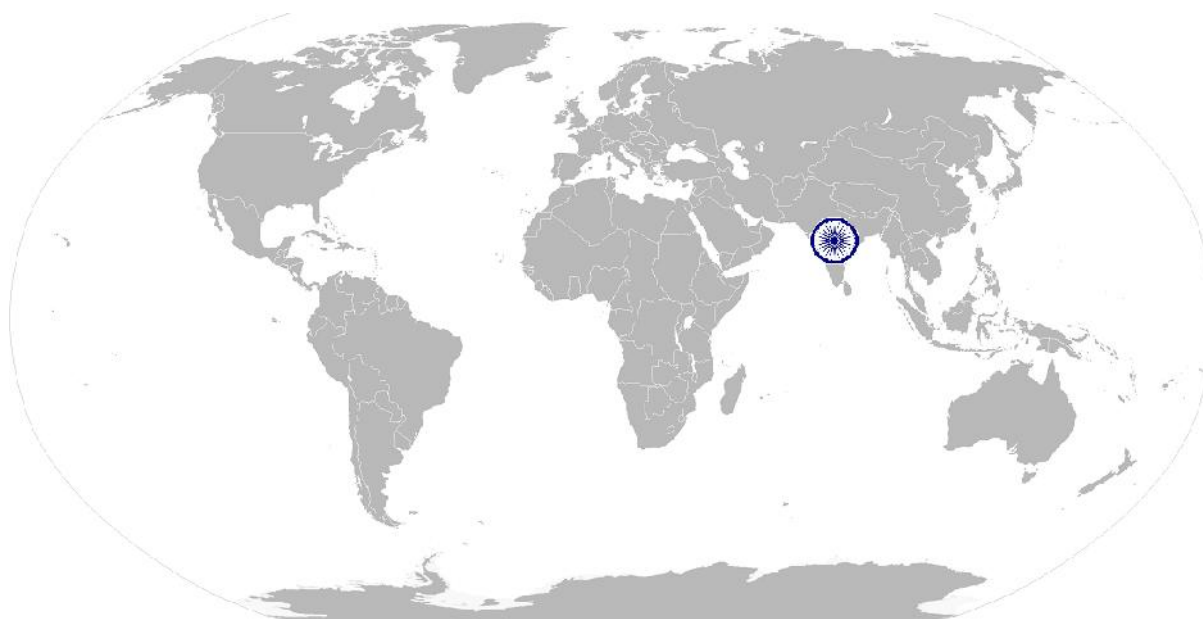
Job Role	Tracklayer Operator
Role Description	Responsible for lay, repair & maintain track activities
NSQF level	4
Minimum Educational Qualification	Class X
Maximum Educational Qualification	NA
Training (Suggested but not mandatory)	<ol style="list-style-type: none"> 1. 5S and safety 2. Quality Management
Experience	0 – 10 Years
Applicable National Occupational Standards	<p>Compulsory: Click on the hyperlink to read/download the required NOS</p> <ol style="list-style-type: none"> 1. MIN/ N0486 (Understand job requirements and related processes) 2. MIN/ N0487 (Carry out Laying, repairing and Maintenance of Track) 3. MIN/ N0901 (Health and Safety) <p>Optional: Not Applicable</p>
Performance Criteria	As described in the relevant NOS units

Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standard are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standard which apply uniquely in the Indian context.
Qualification Pack Code	Qualification Pack Code is a unique reference code that identifies a qualification pack.
Qualification Pack	Qualification Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualification Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard , which is denoted by an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms	Keywords /Terms	Description
	SCMS	Skill council for Mining Sector
	NOS	National Occupational Standard
	NSQF	National Skill Qualification Framework
	NVEQF	National Vocational Educational Qualification Framework
	NVQF	National Vocational Qualification Framework
	OS	Occupational Standard
	PC	Performance Criteria
	QP	Qualification Pack
	SSC	Sector Skill Council

National Occupational Standard



Overview

This unit is about understanding the job requirement and conduct pre-operation activities & equipment associated with the process of track laying, repair and maintenance

MIN/ N0486 Understand job requirement and related processes

National Occupational Standard	Unit Code	MIN/ N0486
	Unit Title (Task)	Understand job requirements and related processes
	Description	This OS unit is about understanding the job requirement and conduct pre-operation activities & equipment associated with the process of track laying, repair and maintenance
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none">Understand the process requirementsConducting pre-operation checks
	Working Conditions	<ul style="list-style-type: none">able to work in confined spaces, including undergroundmay also be required to work in remote areas where conditions can be hot, wet, dirty and dusty.Need to wear protective clothing such as hard hats, safety boots and other safety equipment.may be required to work shifts
Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria	
Understand the process requirements	<p>PC1. Understand the work outputs required from the process and discuss the same with the supervisor</p> <p>PC2. Refer all process related documents</p> <p>PC3. Understand the specifications for various systems as mentioned in the Work Instruction/ SOPs</p> <p>PC4. Prepare sketches or follow blueprints to determine the purpose, location, constraints, risks of the activity to be carried out and the method and materials to be used and to ensure conformance to safety codes.</p>	
Conducting pre-operation checks	<p>PC5. Check for the availability of different associated tools for laying/ maintaining/repairing of the line like rails, dog nail, fish bolts, track sleepers etc.</p> <p>PC6. Understand the production efficiency of the line to be laid and plan accordingly</p> <p>PC7. Identify the width of the track line to be used for hauling as per the standard specified</p> <p>PC8. Check for uniformity of the width of the track line</p> <p>PC9. Refer to plans, blueprints, sketches to determine the position of the track line to be laid</p> <p>PC10. Check radius of the curvature of the curves, if required, for smooth hauling of the tubs</p>	
Knowledge and Understanding (K)		
A. Regulatory context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Different types of mines and detail of the mine he is working in</p>	

MIN/ N0486 Understand job requirement and related processes

(knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))	<p>KA2. Mine Organisation, time keeping, need for discipline and punctuality</p> <p>KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene</p> <p>KA4. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KA5. Shot firing and Safety regulations. How and where to take shelter</p> <p>KA6. Duties of workmen</p> <p>KA7. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KA8. Knowledge of mining safety procedures</p> <p>KA9. Impact of violation of safely procedures</p>
B. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. relevant standard and procedures followed in the company</p> <p>KB2. different types of electrical requirements at the mine</p> <p>KB3. processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution</p>
C. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KC1. different specifications</p> <p>KC2. Sketches, SOPs and drawings</p> <p>KC3. different types of tools and machinery</p> <p>KC4. hazards and safety aspects involved and usage of relevant PPEs</p>

Skills (S) [Optional]

Element	Skills
Element A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to:
	SA1. note down observations (if any)
	SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to:
Element B. Professional Skills	SA3. read and interpret symbols and measurements
	SA4. read information documents
	SA5. understand and analyse the available data about the site
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA6. discuss task lists, schedules and activities
Element C. Transferable Skills	SA7. effectively communicate
	SA8. attentively listen with full attention and comprehend the information given by various sources about the site
Element D. Professional Skills	Plan and Organize

MIN/ N0486 Understand job requirement and related processes

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. plan and organize the work order and jobs</p> <p>SB2. organize all process manuals so that sorting/ accessing information is easy</p>
	Judgment and Critical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. use common sense and make judgments during day to day basis</p> <p>SB4. use reasoning skills to identify and resolve basic problems</p> <p>SB5. use intuition to detect any potential problems which could arise</p>
	Desire to learn and take initiatives
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. follow instructions and work on areas of improvement identified</p> <p>SB7. complete the assigned tasks with minimum supervision</p> <p>SB8. complete the job within timelines and quality norms</p>
	Problem Solving and Decision making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. detect problems in day to day tasks</p> <p>SB10. discuss possible solution with the supervisor for problem solving</p> <p>SB11. make decisions in emergency conditions</p>



MIN/ N0486 Understand job requirement and related processes

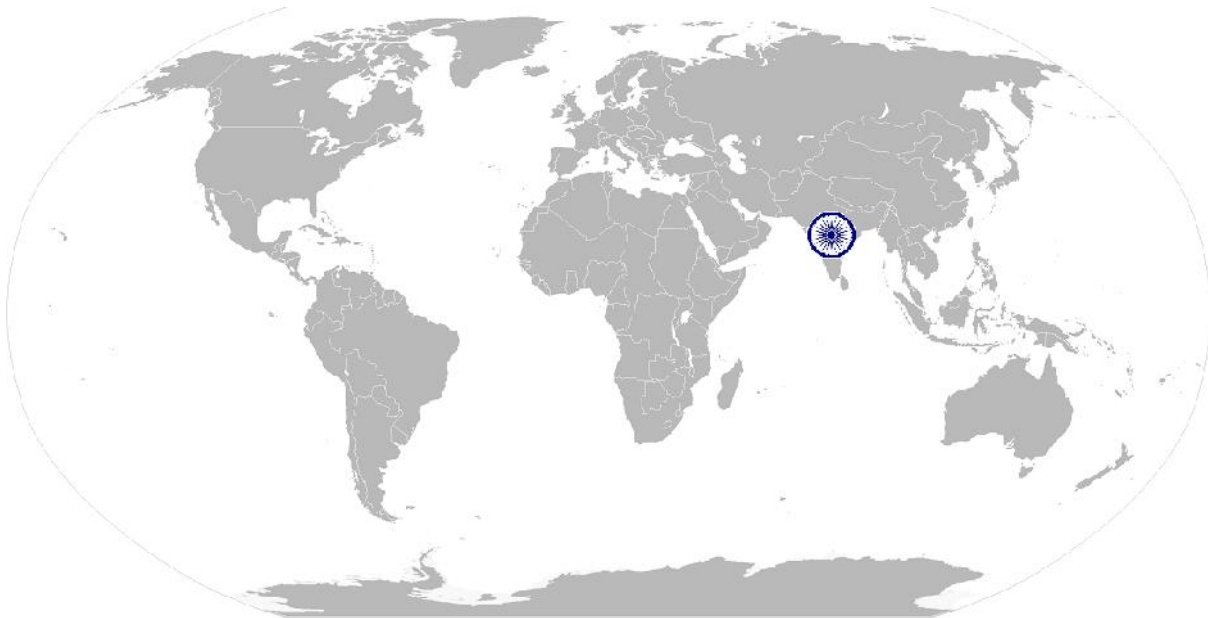
NOS Version Control

NOS Code	MIN/ N0486		
Credits(NSQF)	TBD	Version number	1.0
Industry	Mining	Drafted on	15/12/2014
Industry Sub-sector	Underground Mines	Last reviewed on	24/03/2015
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[Back to Top](#)



National Occupational Standard



Overview

This OS unit is about carrying out Laying, repairing and Maintenance of Track

MIN/ N0487 Carry out Laying, repairing and Maintenance of Track

National Occupational Standard

Unit Code	MIN/ N0487
Unit Title (Task)	Carry out Laying, repairing and Maintenance of Track
Description	This OS unit is about Laying, Repairing & maintaining of the track
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Laying track Installing attachments and accessories Repairing and maintenance of tracks
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
A. Laying Track	<p>PC1. Obtain and interpret the job instruction from relevant reports</p> <p>PC2. Verify the validity of layout, and determine the class of line from design plan</p> <p>PC3. Calculate material quantities in relation to rails, ballast, sleepers and fastenings accurately, over distance</p> <p>PC4. Obtain and verify the material, tools and equipment for correctness</p> <p>PC5. Classify the materials (sleepers, clamp, rails and u-bolts) correctly</p> <p>PC6. Ensure that correct off-sets are calculated in accordance with formula</p> <p>PC7. Bend the rails in accordance with rail bending instructions and specifications</p> <p>PC8. Efficiently lay each track roadway to be of adequate dimensions and, as far as practicable, should be straight and of regular gradient and have tracks properly laid with rails of adequate section</p> <p>PC9. Ensure that track gauge is within tolerance as per design specification</p> <p>PC10. Install Gauge plate/clip combination correctly as per design specification</p> <p>PC11. Replace the existing sleepers with rail girder sleepers and fastened correctly</p> <p>PC12. Install the clamps correctly into track</p> <p>PC13. Place the rails on sleepers and clamps which are fastened correctly with clamps</p> <p>PC14. Calculate the ballast quantity and ensure sufficient ballast is offloaded safely and correctly, according to distance and volume requirements</p> <p>PC15. Pack ballast and ensure that it is boxed in correctly</p> <p>PC16. Install Sleepers and ensure they tamped correctly</p> <p>PC17. Erect the temporary speed restriction boards according to organizational requirements</p>
B. Installing attachments and accessories	<p>PC18. Securely fix pulleys, sheaves and rollers that alter the direction of a rope throughout the track roadway.</p> <p>PC19. Ensure affixing the following contrivances where haulage is effected by one or more ropes-</p> <ul style="list-style-type: none"> At the top of every inclined plane, at least one stop-block or other effective contrivance to arrest tubs from running or moving out of control. At least one run way switch or other effective contrivance below the first stop-block or other effective contrivance at a distance greater than the length of a set or train of tubs: <p>PC20. Fix attachments as required behind an ascending tub or set or train of tubs, of</p>

MIN/ N0487 Carry out Laying, repairing and Maintenance of Track

	<p>a back-stay, drag or other suitable contrivance for preventing the tub, set or train of tubs from running back</p> <p>PC21. Fit Safety hooks, jazz-rails or other suitable mechanisms to prevent runaway in the forward direction.</p> <p>PC22. Install and monitor Tub re-railers at regular intervals, as specified by the supervisor. Where a tubs is re-railed manually, it shall either be detached from the rope or ropes or the haulage engine which works the rope shall be stopped</p> <p>PC23. Install and maintain means of transmitting signal (electrical/ mechanical) from every stopping place on the roadway to the place at which the machinery working the rope is operated</p> <p>PC24. Ensure the maintenance minimum distances at all places where tubs are coupled or uncoupled (there shall be a clear space of not less than one meter between the tubs and one side of the roadway, unless specified otherwise)</p> <p>PC25. Erect a buffer or other mechanisms to prevent accidents, when any roadway or face is in direct line with a haulage track and persons may be exposed to danger from runaway tubs</p> <p>PC26. Install a stop block or other effective mechanism near the entrance of every tramming roadway branching off the main haulage road or roadway, and on every track which slopes towards a shaft.</p>
C. Repair and Maintenance of tracks	<p>PC27. Repair or adjust track switches, using wrenches and replacement parts</p> <p>PC28. Lubricate machines, change oil, or fill hydraulic reservoirs to specified levels.</p> <p>PC29. Drill holes through rails, tie plates, or fishplates for insertion of bolts or spikes, using power drills.</p> <p>PC30. Operate single- or multiple-head spike pullers to pull old spikes from ties.</p> <p>PC31. Grind ends of new or worn rails to attain smooth joints, using portable grinders.</p> <p>PC32. Drive graders, tamping machines, brooms, or ballast spreading machines to redistribute gravel or ballast between rails.</p> <p>PC33. Push controls to close grasping devices on track or rail sections so that they can be raised or moved.</p> <p>PC34. Turn wheels of machines, using lever controls, to adjust guidelines for track alignments or grades, following specifications</p> <p>PC35. Operate tie-ading machines to cut ties and permit insertion of fishplates that hold rails</p> <p>PC36. Spray ties, fishplates, or joints with oil to protect them from weathering.</p>
Knowledge and Understanding (K)	
A. Regulatory context (knowledge of safety guidelines specified by Director	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Different types of mines and detail of the mine he is working in</p> <p>KA2. Mine Organisation, time keeping, need for discipline and punctuality</p> <p>KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene</p> <p>KA4. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KA5. Shot firing and Safety regulations. How and where to take shelter</p> <p>KA6. Duties of workmen</p>

MIN/ N0487 Carry out Laying, repairing and Maintenance of Track

General of Mine Safety (DGMS))	<p>KA7. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KA8. Knowledge of mining safety procedures</p> <p>KA9. Impact of violation of safely procedures</p>
B. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. relevant standard and procedures followed in the company</p> <p>KB2. different types of repair& maintenance requirements at the mine</p> <p>KB3. processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution</p>
C. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KC1. Different types of track support and their applications</p> <p>KC2. Classification of materials used in track laying</p> <p>KC3. Rail profiles and classes</p> <p>KC4. Safe handling of materials, equipment and tools (storage, stacking, loading, off-loading, transportation)</p> <p>KC5. Methods for placing and fastening rails on sleepers</p> <p>KC6. Tamping procedures</p> <p>KC7. Track standard and specifications</p> <p>KC8. Sleepers: Range - Includes but not limited to Steel, concrete, wood, transition ladder, crossing sleepers.</p> <p>KC9. Fastening systems: Range - Includes but not limited to Fist, pendral, fast clip, tubular track, slab track</p>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. note down observations (if any) related to electrical systems and share the same with the supervisor</p> <p>SA2. note down the production data for the respective shifts in the log sheets/ online ERP as per applicability in the organization</p> <p>SA3. write drawings to internal customers on the requirement of apparatus, hand tools etc</p> <p>SA4. write log book in terms of output quantity, set up parameters, machine setting parameters and loss details etc</p> <p>SA5. note measurements, equipment panel readings for various process parameters in the required reporting formats</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. read and interpret engineering drawing and sketches</p> <p>SA7. read equipment manuals and process documents to understand the equipments and processes better</p> <p>SA8. read instructions especially safety instructions especially symbols while using</p>

MIN/ N0487 Carry out Laying, repairing and Maintenance of Track

	the equipments SA9. read internal drawings send by internal customers (other functions within the organization)
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA10. discuss task lists, schedules, and work-loads with co-workers SA11. question internal customers/ supervisor appropriately in order to understand the nature of the problem and make a diagnosis
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB1. plan and organize the work order and jobs received from the internal customers SB2. plan and organize the design documents received from internal customers SB3. organize all process/ equipment manuals so that sorting out information is fast SB4. organize apparatus etc in an orderly manner at proper designated areas
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB5. finalize the optimum levels of physical parameters so that the output meets the prescribed standard
	Problem solving
	The user/individual on the job needs to know and understand how to: SB6. think through the problem, evaluate the possible solution and suggest the best possible solution to the problem SB7. identify immediate or temporary solutions to resolve delays

MIN/ N0487 Carry out Laying, repairing and Maintenance of Track

NOS Version Control



NOS Code	MIN/ N0487		
Credits(NSQF)	TBD	Version number	1.0
Industry	Mining	Drafted on	15/12/2014
Industry Sub-sector	Underground Mines	Last reviewed on	24/03/2015
Occupation	Mining Operations	Next review date	24/03/2017

[Back to Top](#)

National Occupational Standard



Overview

This unit is about health and safety measures critical in mines

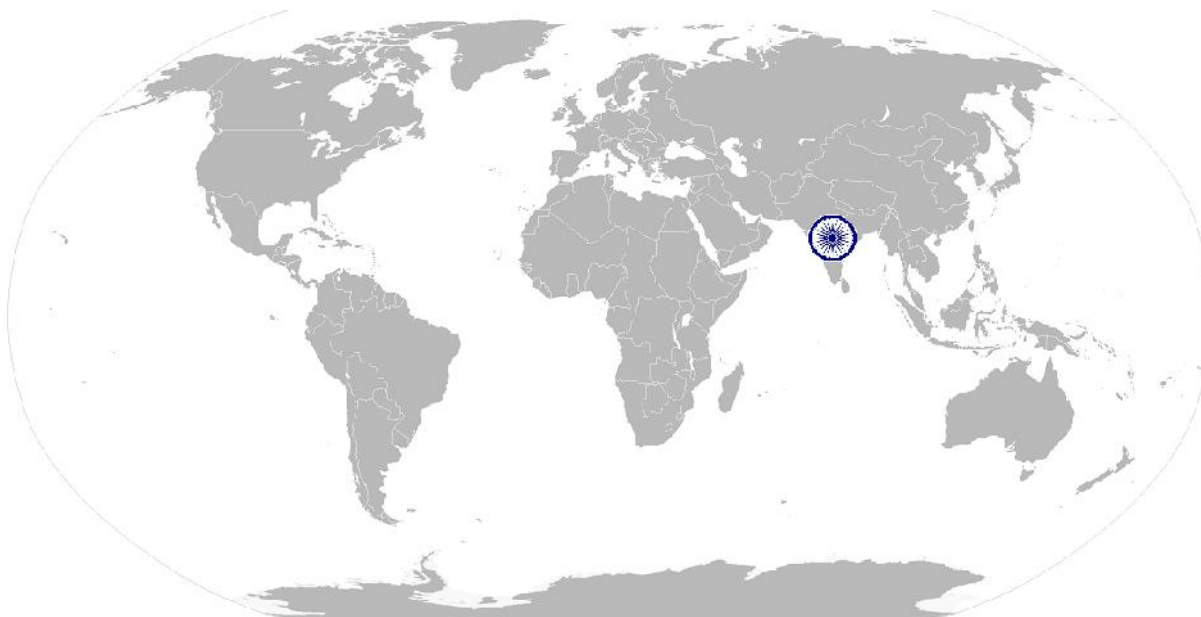
National Occupational Standard	Unit Code	MIN/N 0901
	Unit Title (Task)	Health and Safety
	Description	This unit is about health and safety measures critical in mines
	Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> Health and safety measures critical for personnel in mines
	Element	Performance Criteria
	Safety, Security and Administrative	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Comply with occupational health and safety regulations adopted by the employer.</p> <p>PC2. Follow mining operations procedures with respect to materials handling and accidents</p> <p>PC3. Follow the correct safety steps in case of fire, accident, major failure</p> <p>PC4. Work responsibly and carefully so as not to put the health and safety of self or others at risk.</p> <p>PC5. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.</p> <p>PC6. Comply with safety regulations and procedures in case of fire hazard.</p> <p>PC7. Operate various grades of fire extinguishers.</p> <p>PC8. 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</p> <p>PC9. Demonstrate careful practices in handling explosives and heavy machinery.</p> <p>PC10. Identify characteristics of post-blast fumes and take necessary precautions.</p>

Knowledge and Understanding (K)	
A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Benching in quarries, Dressing of overhangs, undercuts, fencing KA2. First aid and hygiene KA3. Code of practice in specific areas of mine. Significance of fences KA4. Standing orders in force at the mine. Safety in the vicinity of machinery KA5. Shot-firing and Safety regulations. How and where to take shelter KA6. Knowledge of mining safety procedures KA7. Impact of violation of safety procedures KA8. Locally prepared Emergency Preparedness / Disaster Management Plan. KA9. Environmental impact of mining KA10. Sources of dust, noise and vibration and measures to minimise KA11. Hazardous material safety and security rules and regulations as prescribed by DGMS

MIN/ N0901
Health and Safety

NOS Version Control

NOS Code	MIN/ N0901		
Credits(NSQF)	TBD	Version number	1.0
Industry	Mining	Drafted on	15/12/2014
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[Back to Top](#)

CRITERIA FOR ASSESSMENT OF TRAINEES

Tracklayer Operator

MIN/ Q0431

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 centre (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 this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% 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

				Marks Allocation	
Assessable Outcome	Assessment criteria	Total Mark (100)	Out Of	Theory	Skills Practical
1. MIN/ N0486(Understand job requirements and related processes)	PC1. Understand the work outputs required from the process and discuss the same with the supervisor	30	3	2	1
	PC2. Refer all process related documents		3	2	1
	PC3. Understand the specifications for various systems as mentioned in the Work Instruction/ SOPs		3	2	1
	PC4. Prepare sketches or follow blueprints to determine the purpose, location, constraints, risks of the activity to be carried out and the method and materials to be used and to ensure conformance to safety codes.		3	2	1
	PC5. Check for the availability of different associated tools for laying/maintaining/repairing of the line like rails, dog nail, fish bolts, track sleepers etc.		3	2	1
	PC6. Understand the production efficiency of the line to be laid and plan accordingly		3	2	1
	PC7. Identify the width of the track line to be used for hauling as per the standard specified		3	2	1
	PC8. Check for uniformity of the width of the track line		3	2	1

	PC9. Refer to plans, blueprints, sketches to determine the position of the track line to be laid		3	2	1
	PC10. Check radius of the curvature of the curves, if required, for smooth hauling of the tubs.		3	2	1
		Total	30	20	10
2. MIN/ N0487(Carry out Laying, repairing and Maintenance of Track)	PC1. Obtain and interpret the job instruction from relevant reports	40	1	0.5	0.5
	PC2. Verify the validity of layout, and determine the class of line from design plan		1	0.5	0.5
	PC3. Calculate material quantities in relation to rails, ballast, sleepers and fastenings accurately, over distance		1	0.5	0.5
	PC4. Obtain and verify the material, tools and equipment for correctness		1	0.5	0.5
	PC5. Classify the materials (sleepers, clamp, rails and U-bolts) correctly		1	0.5	0.5
	PC6. Ensure that correct off-sets are calculated in accordance with formula		1	0.5	0.5
	PC7. Bend the rails in accordance with rail bending instructions and specifications		1	0.5	0.5
	PC8. Efficiently lay each track roadway to be of adequate dimensions and, as far as practicable, should be straight and of regular gradient and have tracks properly laid with rails of adequate section		1	0.5	0.5
	PC9. Ensure that track gauge is within tolerance as per design specification		1	0.5	0.5
	PC10. Install Gauge plate/clip combination correctly as per design specification		1	0.5	0.5
	PC11. Replace the existing sleepers with rail girder sleepers and fastened correctly		1	0.5	0.5
	PC12. Install the clamps correctly into track		1	0.5	0.5

	PC13. Place the rails on sleepers and clamps which are fastened correctly with clamps
	PC14. Calculate the ballast quantity and ensure sufficient ballast is offloaded safely and correctly, according to distance and volume requirements
	PC15. Pack ballast and ensure that it is boxed in correctly
	PC16. Install Sleepers and ensure they tamped correctly
	PC17. Erect the temporary speed restriction boards according to organizational requirements
	PC18. Securely fix pulleys, sheaves and rollers that alter the direction of a rope throughout the track roadway.
	<p>PC19. Ensure affixing the following contrivances where haulage is effected by one or more ropes-</p> <ul style="list-style-type: none"> • At the top of every inclined plane, at least one stop-block or other effective contrivance to arrest tubs from running or moving out of control. • At least one run way switch or other effective contrivance below the first stop-block or other effective contrivance at a distance greater than the length of a set or train of tubs.
	PC20. Fix attachments as required behind an ascending tub or set or train of tubs, of a back-stay, drag or other suitable contrivance for preventing the tub, set or train of tubs from running back
	PC21. Fit Safety hooks, jazz-rails or other suitable mechanisms to prevent runaway in the forward direction.
	PC22. Install and monitor Tub re-railers at regular intervals, as specified by the supervisor. Where a tubs is re-railed manually, it shall either be detached from the rope or ropes or the haulage engine which works the rope shall be stopped

1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1.5	1	0.5
1.5	1	0.5
1.5	0.5	1
1.5	0.5	1
1.5	0.5	1

	PC23. Install and maintain means of transmitting signal (electrical/mechanical) from every stopping place on the roadway to the place at which the machinery working the rope is operated
	PC24. Ensure the maintenance minimum distances at all places where tubs are coupled or uncoupled (there shall be a clear space of not less than one meter between the tubs and one side of the roadway, unless specified otherwise)
	PC25. Erect a buffer or other mechanisms to prevent accidents, when any roadway or face is in direct line with a haulage track and persons may be exposed to danger from runaway tubs
	PC26. Install a stop block or other effective mechanism near the entrance of every trimmings roadway branching off the main haulage road or roadway, and on every track which slopes towards a shaft.
	PC27. Repair or adjust track switches, using wrenches and replacement parts
	PC28. Lubricate machines, change oil, or fill hydraulic reservoirs to specified levels.
	PC29. Drill holes through rails, tie plates, or fishplates for insertion of bolts or spikes, using power drills.
	PC30. Operate single- or multiple-head spike pullers to pull old spikes from ties.
	PC31. Grind ends of new or worn rails to attain smooth joints, using portable grinders.
	PC32. Drive graders, tamping machines, brooms, or ballast spreading machines to redistribute gravel or ballast between rails.
	PC33. Push controls to close grasping devices on track or rail sections so that they can be raised or moved.
	PC34. Turn wheels of machines, using lever controls, to adjust guidelines for track alignments or grades, following specifications
	PC35. Operate tie-adding machines to cut ties and permit insertion of fishplates that hold rails

1.5	0.5	1
1.5	1	0.5
1.5	1	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5
1	0.5	0.5

	PC36. Spray ties, fishplates, or joints with oil to protect them from weathering.		1	0.5	0.5
		Total	40	20	20
3. MIN/ N0901 (Health and Safety)	PC1. Comply with occupational health and safety regulations adopted by the employer.	30	3	2	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		3	2	1
	PC3. Follow the correct safety steps in case of fire, accident, and major failure.		3	2	1
	PC4. Work responsibly and carefully so as not to put the health and safety of self or others at risk.		3	2	1
	PC5. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		3	2	1
	PC6. Comply with safety regulations and procedures in case of fire hazard.		3	2	1
	PC7. Operate various grades of fire extinguishers.		3	2	1
	PC8. 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	2	1
	PC9. Demonstrate careful practices in handling explosives and heavy machinery.		3	2	1
	PC10. . Identify characteristics of post-blast fumes and take necessary precautions.		3	2	1
		Total	30	20	10