

## Qualification Pack



# Driver Special Utility Vehicle

U/G Metal/ Opencast/ U/G Coal

Other Special Vehicle/ Explosive-van & Diesel-tanker

QP Code: MIN/Q1301

Version: 1.0

NSQF Level: 4

Skill Council for Mining Sector || FIMI House, B-311, Okhla Industrial Area, Phase-I  
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## Qualification Pack

### MIN/Q1301: Driver Special Utility Vehicle

#### Brief Job Description

Driver Special Utility Vehicle in mining industry is an ancillary job role. The individual assigned in this role could be driving a sprinkler truck to control dust on a haul-road or an explosive carrier truck used to deliver explosives to mine sites or other vehicle used in mining such as maintenance van, personal carrier, scissor lift etc. The role requires the individual to know and understand the basic of mining operations, traffic rules to be followed in the mining area and safety guidelines for mining operations in line with MVTR.

#### Personal Attributes

The person should be of good physical condition with good vision and must pass through periodic medical tests.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [MIN/N1301: Conducting pre-operation checks](#)
2. [MIN/N1302: Perform basic maintenance and troubleshooting of the vehicle](#)
3. [MIN/N1303: Carry out reporting and documentation related to the vehicle Operation](#)
4. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

##### Electives (mandatory to select at least one):

###### Elective 1: U/G Metal

1. [MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines \(UMM\) \(Including Mine Vocational Training Rule and Mine Rescue Rule\)](#)

###### Elective 2: Opencast

1. [MIN/N1703: Follow Health, Safety, and Environmental Guidelines for opencast mines \(Including Mine Vocational Training Rule\)](#)

###### Elective 3: U/G Coal



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1. [MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines \(Including Mine Vocational Training Rule and Mine Rescue Rule\)](#)

### Options(Not mandatory):

Option 1: Other Special Vehicle

1. [MIN/N1305: Perform Other Special Vehicle Driver Operations](#)

Option 2: Explosive-van & Diesel-tanker

1. [MIN/N1304: Perform various Operations of the Explosive van/Diesel Tanker](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Credits</b>	28
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/8111.2601



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<b>Minimum Educational Qualification &amp; Experience</b>	<p>12th grade Pass OR 11th grade pass (+ 1-year experience in relevant field) OR 10th grade pass (+ 2-year NTC in relevant field) OR 10th grade pass (+ 1-year NTC+1 Year NAC in relevant field) OR 8th grade pass (+ 2 year NTC + 1 Year NAC +1-year experience in relevant field) OR 10th grade pass (with 2 years of experience in relevant field) OR Certificate-NSQF (Level 3.0 with minimum education as 8th grade pass with 2 years of relevant experience (Explosives Handler, Jr. Driver Special Utility Vehicle))</p>
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	20 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Approval Date</b>	17/11/2022
<b>Version</b>	1.0
<b>Reference code on NQR</b>	2022/MIN/SCMS/06476
<b>NQR Version</b>	1



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### MIN/N1301: Conducting pre-operation checks

#### Description

This OS unit is about preparing the vehicle such as explosive van, water sprinkler, diesel tank, personal carrier and other vehicle before starting the operations

#### Scope

The scope covers the following :

- Prepare the vehicle for operation
- Recording and reporting the details of vehicle's pre-operation inspection

#### Elements and Performance Criteria

*conducting pre-operation checks to ensure the Vehicle is ready and safe to use*

To be competent, the user/individual on the job must be able to:

- PC1.** follow the work related instructions given by the supervisor before the shift starts
- PC2.** check oil levels of engine, differential, hydraulic tank etc. and top up as required
- PC3.** check water level in the radiator and top up as required
- PC4.** confirm availability and functionality of safety features in the vehicle like audiovisual alarm, reverse camera, mirrors, horn, seat belt, Roll-Over Protection Structure (ROPS) and Falling Object Protective Structure (FOPS) etc. as per the availability
- PC5.** check fan belt tension, electrolyte level, and batteries' terminal tightness
- PC6.** apply grease to all the required parts
- PC7.** check correct air pressure in tires
- PC8.** check and take action as per the entries done by the previous operator in the vehicle logbook
- PC9.** check for any spills/leakages in the engine, hydraulic systems, differential etc.
- PC10.** plug spill, leakage of oil and lubricants and escalate to appropriate authority if unable to rectify
- PC11.** clean air filter dust bowls
- PC12.** keep footplates and steps clean and free from dirt and oil
- PC13.** check main brake and emergency brakes, engine cooling system
- PC14.** examine the various controls, gauges, warning lamps
- PC15.** check and adjust driving position, rear and side mirrors, seat belts and confirm clear uninterrupted vision all around

*Recording and reporting the details of vehicle's pre-operation inspection*

To be competent, the user/individual on the job must be able to:

- PC16.** maintain the operation and maintenance logbook to detail all activities conducted before starting the vehicle
- PC17.** inform the supervisor of those problems which are not under one's purview





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### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job-specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** the hierarchy for reporting identified problems
- KU4.** cost of equipment and loss for the company that results from damage of equipment
- KU5.** implications of delays in the process
- KU6.** handover and takeover procedures of the vehicle according to company's SOP
- KU7.** safety guidelines specified by Directorate General of Mines Safety (DGMS) specific to relevant vehicle operations
- KU8.** different types of mines and detail of the mine one is working in
- KU9.** benching in quarries, dressing of overhangs, undercuts, fencing, first aid, and hygiene
- KU10.** code of practice in specific areas of the mine
- KU11.** standing orders in force at the mine
- KU12.** importance of safety in the vicinity of machinery
- KU13.** about shot-firing / blasting related safety regulations including taking shelter during blasting
- KU14.** duties of workmen under the Mines Act-1952
- KU15.** provision of compensation and working hours, leaves, etc. as per Mines Act-1952
- KU16.** the outcome of violation of safety procedures
- KU17.** different types of Heavy Earth Moving Machines (H.E.M.M) and their use
- KU18.** different types of the steering mechanism
- KU19.** about instrument panel and various controls
- KU20.** optimal engine oil pressure, radiator coolant temperature , lube oil pressure, transmission oil pressure etc. during operation
- KU21.** emergency response /disaster management plan prepared by the organization
- KU22.** signages, mining area-specific signs and other safety and emergence signals
- KU23.** the essential purpose and functioning of various components and aggregates of the vehicle
- KU24.** battery and dynamo / alternator and the electric circuit and connections
- KU25.** basic about diesel engines, their components and functions
- KU26.** power transmission circuit from engine to final drive

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** note down observations (if any)
- GS2.** read and interpret symbols and readings
- GS3.** read information documents
- GS4.** discuss task lists, schedules and activities



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- GS5.** effectively communicate, listen and comprehend the information given by various sources about the site
- GS6.** make decisions pertaining to the concerned area of work
- GS7.** plan and organize the work order and tasks
- GS8.** organize all operation and service manuals so that sorting/ accessing information is easy
- GS9.** detect problems in day to day tasks
- GS10.** discuss possible solution with the supervisor for problem solving
- GS11.** make decisions in emergency conditions
- GS12.** follow instructions and work on areas of improvement identified
- GS13.** complete the assigned tasks timely
- GS14.** use reasoning skills to identify and resolve basic problems
- GS15.** analyze and detect any potential problems which could arise during operation
- GS16.** respect persons with disabilities
- GS17.** explain the importance of gender-sensitization at work site
- GS18.** state basic laws, acts and provisions defined for Persons with Disability (PwD) by the statutory bodies



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>conducting pre-operation checks to ensure the Vehicle is ready and safe to use</i>	28	66	-	-
<b>PC1.</b> follow the work related instructions given by the supervisor before the shift starts	2	4	-	-
<b>PC2.</b> check oil levels of engine, differential, hydraulic tank etc. and top up as required	2	5	-	-
<b>PC3.</b> check water level in the radiator and top up as required	2	4	-	-
<b>PC4.</b> confirm availability and functionality of safety features in the vehicle like audiovisual alarm, reverse camera, mirrors, horn, seat belt, Roll-Over Protection Structure (ROPS) and Falling Object Protective Structure (FOPS) etc. as per the availability	2	5	-	-
<b>PC5.</b> check fan belt tension, electrolyte level, and batteries' terminal tightness	2	4	-	-
<b>PC6.</b> apply grease to all the required parts	2	4	-	-
<b>PC7.</b> check correct air pressure in tires	2	4	-	-
<b>PC8.</b> check and take action as per the entries done by the previous operator in the vehicle logbook	2	4	-	-
<b>PC9.</b> check for any spills/leakages in the engine, hydraulic systems, differential etc.	2	4	-	-
<b>PC10.</b> plug spill, leakage of oil and lubricants and escalate to appropriate authority if unable to rectify	2	5	-	-
<b>PC11.</b> clean air filter dust bowls	1	4	-	-
<b>PC12.</b> keep footplates and steps clean and free from dirt and oil	1	4	-	-
<b>PC13.</b> check main brake and emergency brakes, engine cooling system	2	5	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> examine the various controls, gauges, warning lamps	2	5	-	-
<b>PC15.</b> check and adjust driving position, rear and side mirrors, seat belts and confirm clear uninterrupted vision all around	2	5	-	-
<i>Recording and reporting the details of vehicle's pre-operation inspection</i>	2	4	-	-
<b>PC16.</b> maintain the operation and maintenance logbook to detail all activities conducted before starting the vehicle	1	2	-	-
<b>PC17.</b> inform the supervisor of those problems which are not under one's purview	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1301
<b>NOS Name</b>	Conducting pre-operation checks
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting, Loading and Hauling - Opencast, Loading and Hauling - Underground
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



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## Qualification Pack

# MIN/N1302: Perform basic maintenance and troubleshooting of the vehicle

## Description

This unit is about performing basic maintenance and troubleshooting of the vehicle.

## Scope

The scope covers the following :

- Performing preventive maintenance
- Performing basic diagnosis and troubleshooting

## Elements and Performance Criteria

### *Performing preventive maintenance*

To be competent, the user/individual on the job must be able to:

- PC1.** track vehicle operating hours to assess the required service
- PC2.** park the Vehicle on a firm and level ground before attempting to carry out any maintenance activity
- PC3.** inspect the tyre rims, air pressure, wheel nuts and treads
- PC4.** tighten the loose battery terminals with the help of an auto-electrician
- PC5.** ensure that the Original Equipment Manufacturer (OEM) recommended procedure and checklist is followed for routine servicing
- PC6.** replenish coolants, lubricants, and fluids
- PC7.** carry out the maintenance with Heavy Earth Moving Machinery (HEMM) mechanic or superior in case of non-routine service or repair
- PC8.** assist HEMM mechanic and electrician as and when required
- PC9.** fill the daily, weekly and monthly maintenance/defect sheets as per the format laid down by the organization

### *Performing basic diagnosis and troubleshooting*

To be competent, the user/individual on the job must be able to:

- PC10.** ensure that no diagnosis on the vehicle is performed when it is running or is still hot
- PC11.** identify fault in the vehicle and trace the cause of this fault
- PC12.** check the instrument panel and control gauge to identify out of range readings to find the defect/cause of failure
- PC13.** conduct scheduled, routine examination and assessments against equipment specifications to identify wear, damage, corrosion, inadequate fluid levels, leaks and general condition and serviceability
- PC14.** carry out diagnostic procedures as per the troubleshooting checklist prepared by the Original Equipment Manufacturer (OEM)
- PC15.** assess the problem when it is beyond one's competence and report the problem to concerned person



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- PC16.** follow standard operating procedure set out for diagnosing faults
- PC17.** review complaint sheet, logbook and history sheet of the equipment to identify the repair requirements
- PC18.** follow "5-S" practice near the workshop area

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** the hierarchy for reporting identified problems
- KU4.** cost of equipment and loss for the company that results from damage of equipment
- KU5.** implications of delays in the process
- KU6.** safety guidelines specified by Directorate General of Mines Safety (DGMS) specific to vehicle operations
- KU7.** different types of mines and detail of the mine one is working in
- KU8.** benching in quarries, dressing of overhangs, undercuts, fencing
- KU9.** importance of first aid and hygiene
- KU10.** code of practice in specific areas of the mine
- KU11.** standing orders in force at the mine
- KU12.** importance of safety in the vicinity of machinery
- KU13.** about shot-firing / blasting related safety regulations including taking shelter during blasting
- KU14.** duties of workmen under the Mines Act-1952
- KU15.** provision of compensation and working hours, leaves, etc. as per Mines Act-1952
- KU16.** the outcome of violation of safety procedures
- KU17.** about levers, switches, instrument panel and various controls in order to operate the vehicle properly
- KU18.** emergency response /disaster management plan prepared by the organization
- KU19.** different types of Heavy Earth Moving Machines (H.E.M.M) and their use
- KU20.** importance of 5-S practice at worksite
- KU21.** about visual checks to identify damage, defects or leaks
- KU22.** steering and transmission systems
- KU23.** different types of hydraulic mechanism
- KU24.** instrument panel, their location and operation
- KU25.** the various sources of information available for assessing service and repair requirements of the vehicle including diagnostics displays, visual inspection, test drives
- KU26.** parts of the vehicle that need routine lubrication
- KU27.** correct maintenance procedures for the vehicle

## Generic Skills (GS)



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User/individual on the job needs to know how to:

- GS1.** note down observations (if any)
- GS2.** read and interpret symbols and readings
- GS3.** read information documents
- GS4.** discuss task lists, schedules, and activities
- GS5.** effectively communicate, listen and comprehend the information given by various sources about the site
- GS6.** make decisions pertaining to the concerned area of work
- GS7.** plan and organize the work order and tasks
- GS8.** organize all operation and service manuals so that sorting/ accessing information is easy
- GS9.** detect problems in day to day tasks
- GS10.** discuss possible solution with the supervisor for problem solving
- GS11.** make decisions in emergency conditions
- GS12.** follow instructions and work on areas of improvement identified
- GS13.** complete the assigned tasks timely
- GS14.** use reasoning skills to identify and resolve basic problems
- GS15.** analyze and detect any potential problems which could arise during operation
- GS16.** respect persons with disabilities
- GS17.** explain the importance of gender-sensitization at work site
- GS18.** state basic laws, acts and provisions defined for Persons with Disability (PwD) by the statutory bodies

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Performing preventive maintenance</i>	<b>12</b>	<b>35</b>	-	-
<b>PC1.</b> track vehicle operating hours to assess the required service	1	3	-	-
<b>PC2.</b> park the Vehicle on a firm and level ground before attempting to carry out any maintenance activity	2	4	-	-
<b>PC3.</b> inspect the tyre rims, air pressure, wheel nuts and treads	2	4	-	-
<b>PC4.</b> tighten the loose battery terminals with the help of an auto-electrician	2	4	-	-
<b>PC5.</b> ensure that the Original Equipment Manufacturer (OEM) recommended procedure and checklist is followed for routine servicing	1	4	-	-
<b>PC6.</b> replenish coolants, lubricants, and fluids	1	4	-	-
<b>PC7.</b> carry out the maintenance with Heavy Earth Moving Machinery (HEMM) mechanic or superior in case of non-routine service or repair	1	4	-	-
<b>PC8.</b> assist HEMM mechanic and electrician as and when required	1	4	-	-
<b>PC9.</b> fill the daily, weekly and monthly maintenance/defect sheets as per the format laid down by the organization	1	4	-	-
<i>Performing basic diagnosis and troubleshooting</i>	<b>18</b>	<b>35</b>	-	-
<b>PC10.</b> ensure that no diagnosis on the vehicle is performed when it is running or is still hot	2	4	-	-
<b>PC11.</b> identify fault in the vehicle and trace the cause of this fault	2	4	-	-
<b>PC12.</b> check the instrument panel and control gauge to identify out of range readings to find the defect/cause of failure	2	4	-	-





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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> conduct scheduled, routine examination and assessments against equipment specifications to identify wear, damage, corrosion, inadequate fluid levels, leaks and general condition and serviceability	2	4	-	-
<b>PC14.</b> carry out diagnostic procedures as per the troubleshooting checklist prepared by the Original Equipment Manufacturer (OEM)	2	4	-	-
<b>PC15.</b> assess the problem when it is beyond one's competence and report the problem to concerned person	2	4	-	-
<b>PC16.</b> follow standard operating procedure set out for diagnosing faults	2	4	-	-
<b>PC17.</b> review complaint sheet, logbook and history sheet of the equipment to identify the repair requirements	2	4	-	-
<b>PC18.</b> follow "5-S" practice near the workshop area	2	3	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	<b>-</b>	<b>-</b>



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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1302
<b>NOS Name</b>	Perform basic maintenance and troubleshooting of the vehicle
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting, Loading and Hauling - Opencast, Loading and Hauling - Underground
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022

## Qualification Pack

# MIN/N1303: Carry out reporting and documentation related to the vehicle Operation

## Description

This unit is about carrying out reporting and documentation related to the vehicle operations.

## Scope

The scope covers the following :

- Reporting and documentation

## Elements and Performance Criteria

### *Reporting and documentation*

To be competent, the user/individual on the job must be able to:

- PC1.** report completion of job allocated during the shift, problems encountered and further actions that need to be taken
- PC2.** report safety and hazard related problems on urgent and priority basis to the supervisor and the manager
- PC3.** record the details of the machine operations accurately using the appropriate format
- PC4.** identify documentation to be completed
- PC5.** prepare all documentation correctly on time
- PC6.** ensure that all documents are available to all appropriate authorities for inspection
- PC7.** use Mineral Conservation and Development Rules (MCDR) based logbook and fill accurate data in correct format along with the signature at the end
- PC8.** handover all important information to the reliever in a proper manner

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** types of documentation in organization e.g. daily maintenance checklist and importance of the same
- KU2.** different types of mines and detail of the mine one is working in
- KU3.** commonly used mining terminologies
- KU4.** duties of workers under The Mines Act-1952
- KU5.** precautions to be taken when handling heavy equipment
- KU6.** various problems/incidents likely to occur

## Generic Skills (GS)

User/individual on the job needs to know how to:



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- GS1.** fill up documentation applicable to one's role
- GS2.** make decisions on the concerned area of work
- GS3.** read and explain manuals, health, and safety instructions, memos, etc
- GS4.** plan and organize the work order and jobs
- GS5.** use reasoning skills to identify and resolve fundamental problems
- GS6.** complete the assigned tasks timely
- GS7.** maintain a good relationship with the supervisor/ and staff
- GS8.** detect problems in day to day tasks
- GS9.** respect Persons with Disabilities (PwD)
- GS10.** explain the importance of gender-sensitization at work site
- GS11.** state basic laws, acts and provisions defined for Persons with Disability (PwD) by the statutory bodies



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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Reporting and documentation</i>	<b>30</b>	<b>70</b>	-	-
<b>PC1.</b> report completion of job allocated during the shift, problems encountered and further actions that need to be taken	4	9	-	-
<b>PC2.</b> report safety and hazard related problems on urgent and priority basis to the supervisor and the manager	4	9	-	-
<b>PC3.</b> record the details of the machine operations accurately using the appropriate format	3	9	-	-
<b>PC4.</b> identify documentation to be completed	4	8	-	-
<b>PC5.</b> prepare all documentation correctly on time	3	9	-	-
<b>PC6.</b> ensure that all documents are available to all appropriate authorities for inspection	4	8	-	-
<b>PC7.</b> use Mineral Conservation and Development Rules (MCDR) based logbook and fill accurate data in correct format along with the signature at the end	4	9	-	-
<b>PC8.</b> handover all important information to the reliever in a proper manner	4	9	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1303
<b>NOS Name</b>	Carry out reporting and documentation related to the vehicle Operation
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting, Loading and Hauling - Opencast, Loading and Hauling - Underground
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



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## Qualification Pack

### DGT/VSQ/N0102: Employability Skills (60 Hours)

#### Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

#### Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

#### Elements and Performance Criteria

##### *Introduction to Employability Skills*

To be competent, the user/individual on the job must be able to:

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

##### *Constitutional values - Citizenship*

To be competent, the user/individual on the job must be able to:

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

##### *Becoming a Professional in the 21st Century*

To be competent, the user/individual on the job must be able to:

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

##### *Basic English Skills*

To be competent, the user/individual on the job must be able to:





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## Qualification Pack

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

### *Career Development & Goal Setting*

To be competent, the user/individual on the job must be able to:

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

### *Communication Skills*

To be competent, the user/individual on the job must be able to:

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

### *Diversity & Inclusion*

To be competent, the user/individual on the job must be able to:

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

### *Financial and Legal Literacy*

To be competent, the user/individual on the job must be able to:

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

### *Essential Digital Skills*

To be competent, the user/individual on the job must be able to:

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

### *Entrepreneurship*

To be competent, the user/individual on the job must be able to:

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

### *Customer Service*

To be competent, the user/individual on the job must be able to:

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.



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**PC28.** follow appropriate hygiene and grooming standards

*Getting ready for apprenticeship & Jobs*

To be competent, the user/individual on the job must be able to:

**PC29.** create a professional Curriculum vitae (Résumé)

**PC30.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

**PC31.** apply to identified job openings using offline /online methods as per requirement

**PC32.** answer questions politely, with clarity and confidence, during recruitment and selection

**PC33.** identify apprenticeship opportunities and register for it as per guidelines and requirements

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** need for employability skills and different learning and employability related portals

**KU2.** various constitutional and personal values

**KU3.** different environmentally sustainable practices and their importance

**KU4.** Twenty first (21st) century skills and their importance

**KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

**KU6.** importance of career development and setting long- and short-term goals

**KU7.** about effective communication

**KU8.** POSH Act

**KU9.** Gender sensitivity and inclusivity

**KU10.** different types of financial institutes, products, and services

**KU11.** how to compute income and expenditure

**KU12.** importance of maintaining safety and security in offline and online financial transactions

**KU13.** different legal rights and laws

**KU14.** different types of digital devices and the procedure to operate them safely and securely

**KU15.** how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

**KU16.** how to identify business opportunities

**KU17.** types and needs of customers

**KU18.** how to apply for a job and prepare for an interview

**KU19.** apprenticeship scheme and the process of registering on apprenticeship portal

## Generic Skills (GS)

User/individual on the job needs to know how to:

**GS1.** read and write different types of documents/instructions/correspondence

**GS2.** communicate effectively using appropriate language in formal and informal settings



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## Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection



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## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> identify employability skills required for jobs in various industries	-	-	-	-
<b>PC2.</b> identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC3.</b> recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
<b>PC4.</b> follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>2</b>	<b>4</b>	-	-
<b>PC5.</b> recognize the significance of 21st Century Skills for employment	-	-	-	-
<b>PC6.</b> practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	<b>2</b>	<b>3</b>	-	-
<b>PC7.</b> use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
<b>PC8.</b> read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
<b>PC9.</b> write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development &amp; Goal Setting</i>	<b>1</b>	<b>2</b>	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> understand the difference between job and career	-	-	-	-
<b>PC11.</b> prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	<b>2</b>	<b>2</b>	-	-
<b>PC12.</b> follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
<b>PC13.</b> work collaboratively with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>2</b>	-	-
<b>PC14.</b> communicate and behave appropriately with all genders and PwD	-	-	-	-
<b>PC15.</b> escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>2</b>	<b>3</b>	-	-
<b>PC16.</b> select financial institutions, products and services as per requirement	-	-	-	-
<b>PC17.</b> carry out offline and online financial transactions, safely and securely	-	-	-	-
<b>PC18.</b> identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
<b>PC19.</b> identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	<b>3</b>	<b>4</b>	-	-
<b>PC20.</b> operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
<b>PC21.</b> use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
<b>PC22.</b> use basic features of word processor, spreadsheets, and presentations	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	<b>2</b>	<b>3</b>	-	-
<b>PC23.</b> identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
<b>PC24.</b> develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
<b>PC25.</b> identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	<b>1</b>	<b>2</b>	-	-
<b>PC26.</b> identify different types of customers	-	-	-	-
<b>PC27.</b> identify and respond to customer requests and needs in a professional manner.	-	-	-	-
<b>PC28.</b> follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship &amp; Jobs</i>	<b>2</b>	<b>3</b>	-	-
<b>PC29.</b> create a professional Curriculum vitae (Résumé)	-	-	-	-
<b>PC30.</b> search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
<b>PC31.</b> apply to identified job openings using offline /online methods as per requirement	-	-	-	-
<b>PC32.</b> answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
<b>PC33.</b> identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0102
<b>NOS Name</b>	Employability Skills (60 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022





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## Qualification Pack

# MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)

## Description

This unit is about adhering to health, safety and environmental guidelines in Underground Metalliferous Mines (UMM) during the execution of various tasks and operations and maintenance.

## Scope

The scope covers the following :

- Follow work-site health and safety measures
- Follow environmental guidelines

## Elements and Performance Criteria

### *Follow work-site health and safety measures*

To be competent, the user/individual on the job must be able to:

- PC1.** undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work
- PC2.** comply with safety, health and security-related regulations/guidelines at the mine e.g. follow Standard Operating Procedure (SOP) for material handling in underground (U/G) mine
- PC3.** operate various types of fire extinguishers to control different types of fire at a worksite when required
- PC4.** check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area
- PC5.** take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment
- PC6.** use self-rescue apparatus, appropriately when required
- PC7.** follow appropriate emergency response procedure during emergency such as fire, water inrush, fall of ground etc.
- PC8.** follow precautions against U/G electrical appliances
- PC9.** follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine
- PC10.** follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire
- PC11.** follow the manufacturer's instructions for care and safe operation of mine machinery and equipment
- PC12.** identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face
- PC13.** follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)
- PC14.** follow gas detecting alarm signal on leakage of inflammable gases and laid out procedure to ensure safety



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## Qualification Pack

- PC15.** follow process for reporting any unsafe act/condition in work area to the concerned person
- PC16.** use underground mine communication system
- PC17.** ensure positive isolation near the work place if applicable
- PC18.** use appropriate PPE as per the requirement
- PC19.** maintain hand hygiene by washing hands with alcohol based sanitisers/soap
- PC20.** disinfect the machine/tools before and after work/task
- PC21.** maintain hygiene at the work site
- PC22.** report any symptoms of illness to the shift-incharge
- PC23.** identify six directional hazards at workplace and take decisions accordingly

### *Follow environmental guidelines*

To be competent, the user/individual on the job must be able to:

- PC24.** identify the environmental impact of mining related operations and follow steps to reduce those impact
- PC25.** follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery
- PC26.** ensure that the stowing practices produce minimum disturbance to the surface
- PC27.** ensure that the subgrade ore is carried out to surface and stacked separately at the earmarked place
- PC28.** ensure the productivity of the machine for material/fuel conservation
- PC29.** follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines
- PC30.** follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** safety guidelines specified by Directorate General of Mine Safety (DGMS)
- KU2.** duties and rights of workers
- KU3.** selection process of person for rescue training
- KU4.** about Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR)
- KU5.** isolation and sealed off area of the mine
- KU6.** various types of gases found in the mine and their effect
- KU7.** self-rescue apparatus and their uses
- KU8.** provision of medical examination (IME & PME) of person employed as per Mines Rules 1955
- KU9.** importance of first aid and hygiene
- KU10.** about different types of machinery used in U/G mines
- KU11.** different types of supporting systems used in U/G mines as per SSP and SSR
- KU12.** about precautions to be taken when handling heavy equipment
- KU13.** various problems/incidents likely to occur
- KU14.** role of Internal Safety Organization, safety committee, workman's inspector and DGMS



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- KU15.** about mine safety standard including light illumination level, noise levels, dust level, pollutants, etc at the work-site
- KU16.** common sources of pollution in the mines and ways to minimize it
- KU17.** various types of fire extinguishers
- KU18.** safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots, ear plugs, Face Mask, etc.
- KU19.** shot-firing / blasting related safety regulations including taking shelter during blasting
- KU20.** emergency response /disaster management plan prepared by the organization as per DGMS guideline
- KU21.** mining area-specific signs, and other safety and emergency signals
- KU22.** the outcome of violation of safety procedures
- KU23.** Take-5 (Personal Risk Assessment) training (DGMS Tech. circulars 2/2014)
- KU24.** rules and regulations for safety and security while handling hazardous materials
- KU25.** safety appliances and rescue equipment
- KU26.** importance and use of various communication system used in UG mines
- KU27.** importance of positive isolation at working site
- KU28.** safety and occupational health policy of organisation
- KU29.** six directional hazard identification process
- KU30.** basic personal and workplace hygiene
- KU31.** importance of FAB (Fresh Air Base)
- KU32.** basic provisions in Mines Creche Rules, 1966 (MCR) for females employed in the mines
- KU33.** the role and responsibilities of rescue room and rescue station and how to contact them in case of emergency
- KU34.** importance of taking shelter at the miner's station during blasting operation
- KU35.** importance of sensitization towards different genders and persons with disabilities (PWD)
- KU36.** importance of following infection control policies, '5-S' practices, and waste management
- KU37.** importance of water/material/energy conservation and management
- KU38.** importance of SMP and EMP, prepared by the organization, as per DGMS guideline

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** fill up documentation applicable to one's role
- GS2.** make decisions on the concerned area of work
- GS3.** read basic English language
- GS4.** read and interpret manuals, health, and safety instructions, memos, etc.
- GS5.** use the digital information from machine
- GS6.** use basic applications of a computer
- GS7.** plan and organize the work order and tasks
- GS8.** use reasoning skills to identify and resolve fundamental problems



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## Qualification Pack

**GS9.** complete the assigned tasks timely

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow work-site health and safety measures</i>	<b>24</b>	<b>42</b>	-	<b>17</b>
<b>PC1.</b> undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work	-	2	-	2
<b>PC2.</b> comply with safety, health and security-related regulations/guidelines at the mine e.g. follow Standard Operating Procedure (SOP) for material handling in underground (U/G) mine	1	3	-	-
<b>PC3.</b> operate various types of fire extinguishers to control different types of fire at a worksite when required	1	4	-	1
<b>PC4.</b> check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area	1	1	-	-
<b>PC5.</b> take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment	1	2	-	1
<b>PC6.</b> use self-rescue apparatus, appropriately when required	-	4	-	1
<b>PC7.</b> follow appropriate emergency response procedure during emergency such as fire, water inrush, fall of ground etc.	1	2	-	1
<b>PC8.</b> follow precautions against U/G electrical appliances	2	2	-	2
<b>PC9.</b> follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine	2	2	-	1
<b>PC10.</b> follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire	2	4	-	-
<b>PC11.</b> follow the manufacturer's instructions for care and safe operation of mine machinery and equipment	1	2	-	1

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face	1	1	-	-
<b>PC13.</b> follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)	1	-	-	-
<b>PC14.</b> follow gas detecting alarm signal on leakage of inflammable gases and laid out procedure to ensure safety	1	2	-	1
<b>PC15.</b> follow process for reporting any unsafe act/condition in work area to the concerned person	-	2	-	1
<b>PC16.</b> use underground mine communication system	-	1	-	-
<b>PC17.</b> ensure positive isolation near the work place if applicable	1	1	-	1
<b>PC18.</b> use appropriate PPE as per the requirement	2	4	-	2
<b>PC19.</b> maintain hand hygiene by washing hands with alcohol based sanitisers/soap	1	1	-	1
<b>PC20.</b> disinfect the machine/tools before and after work/task	1	1	-	-
<b>PC21.</b> maintain hygiene at the work site	1	1	-	1
<b>PC22.</b> report any symptoms of illness to the shift-incharge	1	-	-	-
<b>PC23.</b> identify six directional hazards at workplace and take decisions accordingly	2	-	-	-
<i>Follow environmental guidelines</i>	<b>6</b>	<b>8</b>	-	<b>3</b>
<b>PC24.</b> identify the environmental impact of mining related operations and follow steps to reduce those impact	1	2	-	-
<b>PC25.</b> follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery	-	1	-	-
<b>PC26.</b> ensure that the stowing practices produce minimum disturbance to the surface	1	1	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC27.</b> ensure that the subgrade ore is carried out to surface and stacked separately at the earmarked place	1	-	-	1
<b>PC28.</b> ensure the productivity of the machine for material/fuel conservation	1	1	-	-
<b>PC29.</b> follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines	1	1	-	1
<b>PC30.</b> follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.	1	2	-	1
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>





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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1702
<b>NOS Name</b>	Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	HSE Functions, Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Underground, Specialized Operations, Electrical Services, Mechanical Services
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	30/06/2022
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



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## Qualification Pack

# MIN/N1703: Follow Health, Safety, and Environmental Guidelines for opencast mines (Including Mine Vocational Training Rule)

## Description

This unit is about adhering to health, safety and environmental guidelines at the Open Cast Mines while executing various tasks, maintenance and operations.

## Scope

The scope covers the following :

- Follow work-site health and safety measures
- Follow Environmental guidelines

## Elements and Performance Criteria

### *Follow work-site health and safety measures*

To be competent, the user/individual on the job must be able to:

- PC1.** comply with safety, health, and security-related regulations/guidelines at the opencast mine
- PC2.** follow the safety instructions given by the workman's inspector
- PC3.** follow adequate safety while working at haul roads, heights, overburden dumps, sump area, stockyard, near moving parts, etc.
- PC4.** take safety precautions while working on sites (sub-station, workshop etc.), with equipment, and conducting welding and cutting operations
- PC5.** follow appropriate Safe Operating Procedure (SOP) while dealing with explosives
- PC6.** respond promptly and appropriately to an accident/ incident or an emergency situation, within limits of the role and responsibility
- PC7.** provide first aid to an injured person
- PC8.** operate various types of fire extinguishers to control different types of fire at a worksite when required
- PC9.** use appropriate PPE as per the requirement
- PC10.** maintain hand hygiene by washing hands with alcohol based sanitisers/soap
- PC11.** disinfect the machine/tools before and after work/task
- PC12.** maintain hygiene at the work site
- PC13.** report any symptoms of illness to the shift-incharge

### *Follow Environmental guidelines*

To be competent, the user/individual on the job must be able to:

- PC14.** identify the environmental impact of related opencast mining operations
- PC15.** follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines
- PC16.** ensure not to mix topsoil with waste in day to day tasks
- PC17.** ensure that HEMM is washed at the designated location



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- PC18.** ensure the productivity of the machine for material/fuel conservation
- PC19.** follow the mineral conservation practices specified by the organization in accordance with MCDR-2017 (Mineral Conservation and Development Rules)
- PC20.** assist supervisor for reducing environmental impact caused due to related mining operations

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** about various environmental awareness program related to mining, organized by the various government bodies/company
- KU2.** safety guidelines specified by Directorate General of Mine Safety (DGMS)
- KU3.** basic mining terminologies and definitions
- KU4.** means of access and egress from the mines, location of workshop, haul roads and working face including dump yards
- KU5.** duties of workers under The Mines act-1952
- KU6.** working hours and accident compensation as per The Mines act-1952
- KU7.** about precautions to be taken when handling heavy equipment
- KU8.** various problems/incidents likely to occur
- KU9.** hierarchy of the reporting
- KU10.** machine operation, condition of the machine and worksite
- KU11.** proper documents specific to the machine
- KU12.** role of workmen inspector, safety committee and internal safety organization
- KU13.** the process of top soil removal and management
- KU14.** mine sump and pumping system of the mines
- KU15.** about mine safety standard including light illumination level, noise levels, dust level, pollutants, etc at the work-site
- KU16.** common sources of pollution in the mines and ways to minimize it
- KU17.** safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, gas detector, safety lamp, self-contained breathing apparatus, gum boots, ear plugs, face mask, etc.
- KU18.** shot-firing / blasting related safety regulations including taking shelter during blasting
- KU19.** emergency response /disaster management plan prepared by the organization
- KU20.** signages, mining area-specific signs, and other safety and emergency signals
- KU21.** the outcome of violation of safety procedures
- KU22.** basic personal and workplace hygiene
- KU23.** importance of sensitization towards different genders and PWD (Persons with Disabilities)

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** fill up documentation applicable to one's role



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- GS2.** make decisions on the concerned area of work
- GS3.** read and interpret manuals, health, and safety instructions, memos, etc.
- GS4.** plan and organize the work order and jobs
- GS5.** use reasoning skills to identify and resolve fundamental problems
- GS6.** complete the assigned tasks timely

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow work-site health and safety measures</i>	<b>20</b>	<b>34</b>	-	<b>15</b>
<b>PC1.</b> comply with safety, health, and security-related regulations/guidelines at the opencast mine	2	2	-	1
<b>PC2.</b> follow the safety instructions given by the workman's inspector	1	3	-	1
<b>PC3.</b> follow adequate safety while working at haul roads, heights, overburden dumps, sump area, stockyard, near moving parts, etc.	3	3	-	1
<b>PC4.</b> take safety precautions while working on sites (sub-station, workshop etc.), with equipment, and conducting welding and cutting operations	1	3	-	1
<b>PC5.</b> follow appropriate Safe Operating Procedure (SOP) while dealing with explosives	2	3	-	2
<b>PC6.</b> respond promptly and appropriately to an accident/ incident or an emergency situation, within limits of the role and responsibility	2	3	-	1
<b>PC7.</b> provide first aid to an injured person	2	3	-	1
<b>PC8.</b> operate various types of fire extinguishers to control different types of fire at a worksite when required	1	3	-	1
<b>PC9.</b> use appropriate PPE as per the requirement	2	4	-	2
<b>PC10.</b> maintain hand hygiene by washing hands with alcohol based sanitisers/soap	1	2	-	1
<b>PC11.</b> disinfect the machine/tools before and after work/task	1	2	-	1
<b>PC12.</b> maintain hygiene at the work site	1	1	-	1
<b>PC13.</b> report any symptoms of illness to the shift-incharge	1	2	-	1
<i>Follow Environmental guidelines</i>	<b>10</b>	<b>16</b>	-	<b>5</b>



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> identify the environmental impact of related opencast mining operations	2	2	-	1
<b>PC15.</b> follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines	1	2	-	1
<b>PC16.</b> ensure not to mix topsoil with waste in day to day tasks	2	2	-	1
<b>PC17.</b> ensure that HEMM is washed at the designated location	2	2	-	1
<b>PC18.</b> ensure the productivity of the machine for material/fuel conservation	1	3	-	-
<b>PC19.</b> follow the mineral conservation practices specified by the organization in accordance with MCDR-2017 (Mineral Conservation and Development Rules)	1	3	-	1
<b>PC20.</b> assist supervisor for reducing environmental impact caused due to related mining operations	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1703
<b>NOS Name</b>	Follow Health, Safety, and Environmental Guidelines for opencast mines (Including Mine Vocational Training Rule)
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	HSE Functions, , Exploration, Mineral Estimation, Planning, Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Opencast, Specialized Operations, Electrical Services, Mechanical Services, Instrumentation and Control Systems, Ore Processing
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	30/06/2022
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



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## Qualification Pack

# MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)

## Description

This unit is about adhering to health, safety and environmental guidelines in Underground Coal Mines (UCM) during execution of various tasks, operations and maintenance.

## Scope

The scope covers the following :

- Follow work-site health and safety measures
- Follow environmental guidelines

## Elements and Performance Criteria

### *Follow work-site health and safety measures*

To be competent, the user/individual on the job must be able to:

- PC1.** follow preventive measures against firedamp, whitedamp, blackdamp etc.
- PC2.** use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP)
- PC3.** undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work
- PC4.** comply with safety, health and security-related regulations/guidelines at the mine e.g. SOP for material handling in underground (U/G) mine
- PC5.** ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle
- PC6.** ensure that every instrument, apparatus and equipment are DGMS approved before these are used
- PC7.** ensure that Armoured face conveyor (AFC) and chocks must be kept in a straight line for every cycle of operations and tightened up to the setting pressure while keeping it in full contact with the roof, applicable for longwall mining
- PC8.** provide first aid to an injured person
- PC9.** follow safety precautions against spontaneous heating of the coal
- PC10.** operate various types of fire extinguishers to control different types of fire at worksite, if required
- PC11.** ensure that no person is traveling/working/staying under unsupported roof
- PC12.** check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area
- PC13.** take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment
- PC14.** use self-rescue apparatus appropriately when required
- PC15.** follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)





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- PC16.** follow precautions against U/G electrical appliances
- PC17.** take proper care against damage and accidents while loading, transporting, dismantling and erecting of roof supports
- PC18.** follow appropriate SOP while working near any isolated and sealed off area of the mine
- PC19.** ensure that the roof and the sidewalls of the mine face (or newly exposed area of the mines) have been scaled/dressed properly
- PC20.** take relevant safety precautions during depillaring operation in UCM
- PC21.** follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire
- PC22.** follow the manufacturer's instructions for care and safe operation of mine machinery and equipment
- PC23.** identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face
- PC24.** follow laid out SOP in case of alarm signal for leakage of inflammable gases
- PC25.** follow the process of reporting any unsafe act/condition in the working area to the concerned person
- PC26.** use underground mine communication system
- PC27.** ensure positive isolation near the work place if applicable
- PC28.** use appropriate Personal Protective Equipment (PPE) as per the requirement
- PC29.** maintain hand hygiene by washing hands with alcohol based sanitisers/soap
- PC30.** disinfect the machine/tools before and after work/task
- PC31.** maintain hygiene at the work site
- PC32.** report any symptoms of illness to the shift-incharge
- PC33.** identify six directional hazards at workplace and take decisions accordingly

### *Follow environmental guidelines*

To be competent, the user/individual on the job must be able to:

- PC34.** identify the environmental impact of mining related operations and follow steps to reduce those impact
- PC35.** follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery
- PC36.** ensure that the stowing practices produce minimum disturbance to the surface
- PC37.** ensure that the subgrade coal is carried out to surface and stacked separately at the earmarked place
- PC38.** ensure the productivity of the machine for material/fuel conservation
- PC39.** follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines
- PC40.** follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** safety guidelines specified by Directorate General of Mine Safety (DGMS)
- KU2.** duties and rights of workers
- KU3.** selection process of person for rescue training
- KU4.** about Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR)
- KU5.** isolation and sealed off area of the mine
- KU6.** various types of gases available in the mine and their effects; and their control measures
- KU7.** self-rescue apparatus and their uses
- KU8.** provision of medical examination (Initial Medical Examination (IME) & Periodical Medical Examination (PME)) of a person employed, as per Mines Rules 1955
- KU9.** importance of first aid and hygiene
- KU10.** about different types of machineries used in U/G mines
- KU11.** different types of supporting system used in U/G mines as per SSP and SSR
- KU12.** about precautions to be taken when handling heavy equipment
- KU13.** various problems/incidents likely to occur
- KU14.** role of Internal Safety Organization, safety committee, workman's inspector and DGMS
- KU15.** about mine safety standard including light illumination level, noise levels, dust level, pollutants, etc at the work-site
- KU16.** common sources of pollution in the mines and ways to minimize it
- KU17.** various types of fire extinguishers
- KU18.** safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots, ear plugs, Face Mask, etc.
- KU19.** shot-firing / blasting related safety regulations including taking shelter during blasting
- KU20.** mining area-specific signs, and other safety and emergency signals
- KU21.** the outcome of violation of safety procedures
- KU22.** Take-5 (Personal Risk Assessment) training (DGMS Tech. circulars 2/2014)
- KU23.** hazardous material safety, security rules and regulations
- KU24.** safety appliances and rescue equipment
- KU25.** importance and use of various communication system used in UG mines
- KU26.** importance of positive isolation at working site
- KU27.** safety and occupational health policy of organisation
- KU28.** six directional hazard identification process
- KU29.** basic personal and workplace hygiene
- KU30.** importance of FAB (Fresh Air Base)
- KU31.** basic provisions in Mines Creche Rules, 1966 (MCR) for any females employed in the mines
- KU32.** about basic safety regulations of Coal Mines Regulation, 2017 (CMR)
- KU33.** types of stone dust barrier and its importance
- KU34.** coal dust explosion and its preventive measures
- KU35.** classification of coal mines as per the degree of gassiness of coal seams such as first degree, second degree, and third-degree mines
- KU36.** precautions as per the gassiness of the coal mines



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- KU37.** use of flame safety lamp and its parts
- KU38.** about coal mines occupational disease such as pneumoconiosis or 'black lung' and their preventive measures
- KU39.** Standard of Ventilation as per the section 153 of the CMR 2017
- KU40.** Standard of Lighting as per the section 178 of the CMR 2017
- KU41.** the roles, duties and responsibilities of rescue team members, rescue room and rescue station and how to contact them in case of emergency
- KU42.** the correct steps for conducting any rescue work as per Mine Rescue Rule (MRR)
- KU43.** importance of taking shelter at the miner's station during blasting operation
- KU44.** importance of sensitization towards different genders and persons with disabilities (PWD)
- KU45.** importance of following infection control policies, '5-S' practices, and waste management
- KU46.** importance of water/material/energy conservation and management
- KU47.** importance of SMP and EMP, prepared by the organization, as per DGMS guideline

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** fill up documentation applicable to one's role
- GS2.** make decisions on the concerned area of work
- GS3.** read basic English language
- GS4.** read and interpret manuals, health, and safety instructions, memos, etc.
- GS5.** use the digital information from a machine
- GS6.** plan and organize the work order and tasks
- GS7.** use basic applications of the computer
- GS8.** use reasoning skills to identify and resolve fundamental problems
- GS9.** complete the assigned tasks timely

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow work-site health and safety measures</i>	<b>24</b>	<b>43</b>	-	<b>14</b>
<b>PC1.</b> follow preventive measures against firedamp, whitedamp, blackdamp etc.	1	1	-	-
<b>PC2.</b> use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP)	-	1	-	-
<b>PC3.</b> undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work	1	1	-	1
<b>PC4.</b> comply with safety, health and security-related regulations/guidelines at the mine e.g. SOP for material handling in underground (U/G) mine	1	1	-	1
<b>PC5.</b> ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle	-	1	-	-
<b>PC6.</b> ensure that every instrument, apparatus and equipment are DGMS approved before these are used	1	1	-	-
<b>PC7.</b> ensure that Armoured face conveyor (AFC) and chocks must be kept in a straight line for every cycle of operations and tightened up to the setting pressure while keeping it in full contact with the roof, applicable for longwall mining	3	3	-	-
<b>PC8.</b> provide first aid to an injured person	1	2	-	1
<b>PC9.</b> follow safety precautions against spontaneous heating of the coal	1	1	-	-
<b>PC10.</b> operate various types of fire extinguishers to control different types of fire at worksite, if required	-	2	-	-
<b>PC11.</b> ensure that no person is traveling/working/staying under unsupported roof	1	-	-	-
<b>PC12.</b> check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area	-	2	-	1

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment	-	1	-	1
<b>PC14.</b> use self-rescue apparatus appropriately when required	-	2	-	-
<b>PC15.</b> follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)	1	2	-	1
<b>PC16.</b> follow precautions against U/G electrical appliances	2	2	-	1
<b>PC17.</b> take proper care against damage and accidents while loading, transporting, dismantling and erecting of roof supports	1	2	-	-
<b>PC18.</b> follow appropriate SOP while working near any isolated and sealed off area of the mine	1	1	-	1
<b>PC19.</b> ensure that the roof and the sidewalls of the mine face (or newly exposed area of the mines) have been scaled/dressed properly	1	1	-	-
<b>PC20.</b> take relevant safety precautions during depillaring operation in UCM	-	2	-	1
<b>PC21.</b> follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire	1	1	-	-
<b>PC22.</b> follow the manufacturer's instructions for care and safe operation of mine machinery and equipment	-	1	-	1
<b>PC23.</b> identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face	-	1	-	1
<b>PC24.</b> follow laid out SOP in case of alarm signal for leakage of inflammable gases	1	1	-	-
<b>PC25.</b> follow the process of reporting any unsafe act/condition in the working area to the concerned person	-	1	-	1
<b>PC26.</b> use underground mine communication system	-	1	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC27.</b> ensure positive isolation near the work place if applicable	1	1	-	-
<b>PC28.</b> use appropriate Personal Protective Equipment (PPE) as per the requirement	2	2	-	1
<b>PC29.</b> maintain hand hygiene by washing hands with alcohol based sanitisers/soap	-	1	-	-
<b>PC30.</b> disinfect the machine/tools before and after work/task	1	1	-	-
<b>PC31.</b> maintain hygiene at the work site	1	1	-	-
<b>PC32.</b> report any symptoms of illness to the shift-incharge	1	1	-	-
<b>PC33.</b> identify six directional hazards at workplace and take decisions accordingly	-	1	-	1
<i>Follow environmental guidelines</i>	<b>6</b>	<b>7</b>	-	<b>6</b>
<b>PC34.</b> identify the environmental impact of mining related operations and follow steps to reduce those impact	1	1	-	1
<b>PC35.</b> follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery	1	1	-	1
<b>PC36.</b> ensure that the stowing practices produce minimum disturbance to the surface	1	1	-	-
<b>PC37.</b> ensure that the subgrade coal is carried out to surface and stacked separately at the earmarked place	1	1	-	1
<b>PC38.</b> ensure the productivity of the machine for material/fuel conservation	1	1	-	1
<b>PC39.</b> follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines	-	1	-	1
<b>PC40.</b> follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.	1	1	-	1



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	50	-	20



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1704
<b>NOS Name</b>	Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	HSE Functions, Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Underground, Specialized Operations, Electrical Services, Mechanical Services
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	30/06/2022
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022





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## Qualification Pack

### MIN/N1305: Perform Other Special Vehicle Driver Operations

#### Description

This OS unit is about performing and driving the other special vehicle used in opencast and underground mines such as water tanker/sprinkler, maintenance van, personnel carrier, scissor lift, etc.

#### Scope

The scope covers the following :

- Driving the Other Special Vehicle

#### Elements and Performance Criteria

##### *Driving the other special vehicle*

To be competent, the user/individual on the job must be able to:

- PC1.** use vehicle in an optimum way as per the instruction manual
- PC2.** start the engine by using pushbutton and key switch together
- PC3.** select correct gear range by shifting the quadrant device
- PC4.** follow all relevant bye-laws while driving the vehicle
- PC5.** identify and report any unsafe condition while driving the explosive van such as trenches, potholes and cables etc.
- PC6.** use various signaling devices available in the vehicle such as turn signal, parking indicator, air horn etc. as per requirement
- PC7.** take proper precautions while reversing the vehicle
- PC8.** ensure that vehicle is always parked on firm, level ground; with handbrake applied and drive and controls disengaged
- PC9.** use parking brakes and stopper after parking the vehicle
- PC10.** perform in-operation visual checks on critical gauges and maintain safe following distance, lane driving and lane changing etiquette
- PC11.** drive the vehicle in any emergency situations
- PC12.** perform various operation of water tanker/sprinkler, maintenance van, personnel carrier, scissor lift, etc.
- PC13.** drive through various turns, intersections and gradients at the right speed and following the traffic rules
- PC14.** maintain safe following distance from other vehicles ahead of their vehicle

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job-specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** risk and impact of not following defined procedures/work instructions



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- KU3.** the hierarchy for reporting identified problems
- KU4.** cost of equipment and loss for the company that results from damage of equipment
- KU5.** implications of delays in the process
- KU6.** safety guidelines specified by Directorate General of Mines Safety (DGMS) specific to explosive van operations
- KU7.** different types of mines and detail of the mine one is working in
- KU8.** benching in quarries, dressing of overhangs, undercuts, fencing
- KU9.** importance of first aid and hygiene
- KU10.** code of practice in specific areas of the mine
- KU11.** standing orders in force at the mine
- KU12.** importance of safety in the vicinity of machinery
- KU13.** about shot-firing / blasting related safety regulations including taking shelter during blasting
- KU14.** duties of workmen under the Mines Act-1952
- KU15.** provision of compensation and working hours, leaves, etc. as per Mines Act-1952
- KU16.** the outcome of violation of safety procedures
- KU17.** emergency response /disaster management plan prepared by the organization
- KU18.** different types of Heavy Earth Moving Machines (H.E.M.M) and their use
- KU19.** signages, mining area-specific signs and other safety and emergency signals
- KU20.** on-site driving techniques
- KU21.** awareness of safety hazards
- KU22.** different types of light and medium Vehicles, their functions and capacities
- KU23.** basics of engine and transmission - use and function
- KU24.** different types of steering mechanism, emergency steering function
- KU25.** identification, location and function of all controls available in the instrument panel
- KU26.** safe reading range of meters and gauges e.g. fuel gauge, engine oil pressure and temperature
- KU27.** general safety guidelines for loading, hauling and parking in a mine
- KU28.** Signage, factory signs and other safety and emergency signals
- KU29.** cause of any unusual sound emanating from the engine

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** note down observations (if any)
- GS2.** read and interpret symbols and readings
- GS3.** read information documents
- GS4.** discuss task lists, schedules and activities
- GS5.** effectively communicate, listen and comprehend the information given by various sources about the site
- GS6.** make decisions pertaining to the concerned area of work



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- GS7.** plan and organize the work order and tasks
- GS8.** organize all operation and service manuals so that sorting/ accessing information is easy
- GS9.** detect problems in day to day tasks
- GS10.** discuss possible solution with the supervisor for problem solving
- GS11.** make decisions in emergency conditions
- GS12.** follow instructions and work on areas of improvement identified
- GS13.** complete the assigned tasks timely
- GS14.** use reasoning skills to identify and resolve basic problems
- GS15.** analyze and detect any potential problems which could arise during operation
- GS16.** respect persons with disabilities
- GS17.** explain the importance of gender-sensitization at work site
- GS18.** state basic laws, acts and provisions defined for Persons with Disability (PwD) by the statutory bodies

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Driving the other special vehicle</i>	<b>30</b>	<b>70</b>	-	-
<b>PC1.</b> use vehicle in an optimum way as per the instruction manual	2	5	-	-
<b>PC2.</b> start the engine by using pushbutton and key switch together	2	5	-	-
<b>PC3.</b> select correct gear range by shifting the quadrant device	2	5	-	-
<b>PC4.</b> follow all relevant bye-laws while driving the vehicle	2	5	-	-
<b>PC5.</b> identify and report any unsafe condition while driving the explosive van such as trenches, potholes and cables etc.	2	5	-	-
<b>PC6.</b> use various signaling devices available in the vehicle such as turn signal, parking indicator, air horn etc. as per requirement	3	5	-	-
<b>PC7.</b> take proper precautions while reversing the vehicle	2	5	-	-
<b>PC8.</b> ensure that vehicle is always parked on firm, level ground; with handbrake applied and drive and controls disengaged	2	5	-	-
<b>PC9.</b> use parking brakes and stopper after parking the vehicle	2	5	-	-
<b>PC10.</b> perform in-operation visual checks on critical gauges and maintain safe following distance, lane driving and lane changing etiquette	3	5	-	-
<b>PC11.</b> drive the vehicle in any emergency situations	2	5	-	-
<b>PC12.</b> perform various operation of water tanker/sprinkler, maintenance van, personnel carrier, scissor lift, etc.	2	5	-	-



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## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> drive through various turns, intersections and gradients at the right speed and following the traffic rules	2	5	-	-
<b>PC14.</b> maintain safe following distance from other vehicles ahead of their vehicle	2	5	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1305
<b>NOS Name</b>	Perform Other Special Vehicle Driver Operations
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting, Loading and Hauling - Underground, Loading and Hauling - Opencast
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022



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## Qualification Pack

# MIN/N1304: Perform various Operations of the Explosive van/Diesel Tanker

## Description

This unit is about performing various operations of explosive van/Diesel Tanker.

## Scope

The scope covers the following :

- Driving the Explosive Van/Diesel Tanker
- Deliver bulk explosives to the blast location

## Elements and Performance Criteria

### *Driving the Explosive Van/Diesel Tanker*

To be competent, the user/individual on the job must be able to:

- PC1.** use explosive van in an optimum way as per the instruction manual
- PC2.** check and ensure availability of at least 2 fire extinguishers for explosive van/ diesel tanker (CO<sub>2</sub> & CCL<sub>4</sub>)
- PC3.** start the engine by using pushbutton and key switch together
- PC4.** select correct gear range by shifting the quadrant device
- PC5.** follow all bye-laws while driving the explosive van
- PC6.** identify and report any unsafe condition while driving the explosive van/ diesel tanker such as trenches, potholes and cables etc.
- PC7.** use various signaling devices available in the explosive van such as turn signal, parking indicator, air horn etc. as per requirement
- PC8.** take proper precautions while reversing the explosive van/diesel tanker
- PC9.** ensure that explosive van is always parked on firm, level ground; with handbrake applied and drive and controls disengaged
- PC10.** use parking brakes and stopper after parking the explosive van/ diesel tanker
- PC11.** ensure that loaded explosive van /diesel tanker is never parked in crowded place
- PC12.** ensure not to leave the explosive van/ diesel tanker unattended while any urgent break down
- PC13.** perform in-operation visual checks on critical gauges and maintain safe following distance, lane driving and lane changing etiquette
- PC14.** ensure all requisite safeguards for driving an explosive van/ diesel tanker, e.g. drive loaded van at 20km/hr. (max)in mines, not to fuel or refuel loaded van, not to allow any unauthorized person in van and not to leave the van unattended

### *Deliver bulk explosives to the blast location*

To be competent, the user/individual on the job must be able to:

- PC15.** identify and confirm location of and route to blast area as appropriate



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- PC16.** identify the potential hazards to transportation and confirm that the loading position, including edge protection are safe and appropriate
- PC17.** discuss the site procedures for reporting and meet the specific site requirements for identification, registration and induction of contractors/visitors
- PC18.** identify and locate the site personnel with responsibility for oneself and the blast
- PC19.** confirm that the delivery shall only be made to authorized persons and into approved magazines or approved temporary storage or handling areas
- PC20.** ensure that vehicle is safely driven and positioned at agreed optimum loading point/s according to operational procedures, site rules and loading requirements
- PC21.** deliver the quantities and qualities of material/s as communicated by instruction of blasting in-charge
- PC22.** ensure that the vehicle is safely driven to blast location in compliance with organisational and site procedures and DGMS guidelines in permission letter

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job-specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** the hierarchy for reporting identified problems
- KU4.** cost of equipment and loss for the company that results from damage of equipment
- KU5.** implications of delays in the process
- KU6.** safety guidelines specified by Directorate General of Mines Safety (DGMS) specific to explosive van operations
- KU7.** different types of mines and detail of the mine one is working in
- KU8.** benching in quarries, dressing of overhangs, undercuts, fencing
- KU9.** importance of first aid and hygiene
- KU10.** code of practice in specific areas of the mine
- KU11.** standing orders in force at the mine
- KU12.** importance of safety in the vicinity of machinery
- KU13.** about shot-firing / blasting related safety regulations including taking shelter during blasting
- KU14.** duties of workmen under the Mines Act-1952
- KU15.** provision of compensation and working hours, leaves, etc. as per Mines Act-1952
- KU16.** the outcome of violation of safety procedures
- KU17.** emergency response /disaster management plan prepared by the organization
- KU18.** different types of Heavy Earth Moving Machines (H.E.M.M) and their use
- KU19.** signages, mining area-specific signs and other safety and emergency signals
- KU20.** on-site driving techniques
- KU21.** the potential dangers/ hazards during transportation on blast sites
- KU22.** the hazards to other staff/contractors/visitors on site arising from bulk explosive truck operation





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- KU23.** blast specifications and material characteristics
- KU24.** identification of safe driving routes on sites
- KU25.** the reasons for specified routes to be used when transporting explosive materials
- KU26.** motor vehicle and hazardous waste (handling) rules 2008
- KU27.** awareness of safety hazards

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** note down observations (if any)
- GS2.** read and interpret symbols and readings
- GS3.** read information documents
- GS4.** discuss task lists, schedules and activities
- GS5.** effectively communicate, listen and comprehend the information given by various sources about the site
- GS6.** make decisions pertaining to the concerned area of work
- GS7.** plan and organize the work order and tasks
- GS8.** organize all operation and service manuals so that sorting/ accessing information is easy
- GS9.** detect problems in day to day tasks
- GS10.** discuss possible solution with the supervisor for problem solving
- GS11.** make decisions in emergency conditions
- GS12.** follow instructions and work on areas of improvement identified
- GS13.** complete the assigned tasks timely
- GS14.** use reasoning skills to identify and resolve basic problems
- GS15.** analyze and detect any potential problems which could arise during operation
- GS16.** respect persons with disabilities
- GS17.** explain the importance of gender-sensitization at work site
- GS18.** state basic laws, acts and provisions defined for Persons with Disability (PwD) by the statutory bodies



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## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Driving the Explosive Van/Diesel Tanker</i>	<b>14</b>	<b>30</b>	-	-
<b>PC1.</b> use explosive van in an optimum way as per the instruction manual	1	2	-	-
<b>PC2.</b> check and ensure availability of at least 2 fire extinguishers for explosive van/ diesel tanker (CO2 & CCL4)	1	2	-	-
<b>PC3.</b> start the engine by using pushbutton and key switch together	1	2	-	-
<b>PC4.</b> select correct gear range by shifting the quadrant device	1	2	-	-
<b>PC5.</b> follow all bye-laws while driving the explosive van	1	2	-	-
<b>PC6.</b> identify and report any unsafe condition while driving the explosive van/ diesel tanker such as trenches, potholes and cables etc.	1	2	-	-
<b>PC7.</b> use various signaling devices available in the explosive van such as turn signal, parking indicator, air horn etc. as per requirement	1	2	-	-
<b>PC8.</b> take proper precautions while reversing the explosive van/diesel tanker	1	3	-	-
<b>PC9.</b> ensure that explosive van is always parked on firm, level ground; with handbrake applied and drive and controls disengaged	1	2	-	-
<b>PC10.</b> use parking brakes and stopper after parking the explosive van/ diesel tanker	1	2	-	-
<b>PC11.</b> ensure that loaded explosive van /diesel tanker is never parked in crowded place	1	2	-	-
<b>PC12.</b> ensure not to leave the explosive van/ diesel tanker unattended while any urgent break down	1	2	-	-
<b>PC13.</b> perform in-operation visual checks on critical gauges and maintain safe following distance, lane driving and lane changing etiquette	1	2	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> ensure all requisite safeguards for driving an explosive van/ diesel tanker, e.g. drive loaded van at 20km/hr. (max)in mines, not to fuel or refuel loaded van, not to allow any unauthorized person in van and not to leave the van unattended	1	3	-	-
<i>Deliver bulk explosives to the blast location</i>	<b>16</b>	<b>40</b>	-	-
<b>PC15.</b> identify and confirm location of and route to blast area as appropriate	2	5	-	-
<b>PC16.</b> identify the potential hazards to transportation and confirm that the loading position, including edge protection are safe and appropriate	2	5	-	-
<b>PC17.</b> discuss the site procedures for reporting and meet the specific site requirements for identification, registration and induction of contractors/visitors	2	5	-	-
<b>PC18.</b> identify and locate the site personnel with responsibility for oneself and the blast	2	5	-	-
<b>PC19.</b> confirm that the delivery shall only be made to authorized persons and into approved magazines or approved temporary storage or handling areas	2	5	-	-
<b>PC20.</b> ensure that vehicle is safely driven and positioned at agreed optimum loading point/s according to operational procedures, site rules and loading requirements	2	5	-	-
<b>PC21.</b> deliver the quantities and qualities of material/s as communicated by instruction of blasting in-charge	2	5	-	-
<b>PC22.</b> ensure that the vehicle is safely driven to blast location in compliance with organisational and site procedures and DGMS guidelines in permission letter	2	5	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	MIN/N1304
<b>NOS Name</b>	Perform various Operations of the Explosive van/Diesel Tanker
<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Shot firing/Blasting, Loading and Hauling - Opencast
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	17/11/2025
<b>NSQC Clearance Date</b>	17/11/2022

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (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 center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

**Minimum Aggregate Passing % at QP Level : 70**



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## Qualification Pack

**(Please note:** Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

### Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1301. Conducting pre-operation checks	30	70	-	-	100	20
MIN/N1302. Perform basic maintenance and troubleshooting of the vehicle	30	70	-	-	100	20
MIN/N1303. Carry out reporting and documentation related to the vehicle Operation	30	70	-	-	100	20
DGT/VSQ/N0102. Employability Skills (60 Hours)	20	30	0	0	50	15
<b>Total</b>	<b>110</b>	<b>240</b>	<b>0</b>	<b>0</b>	<b>350</b>	<b>75</b>

Elective: 1 U/G Metal

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1702. Follow Health, Safety, and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)	30	50	0	20	100	25
<b>Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>	<b>100</b>	<b>25</b>

Elective: 2 Opencast



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### Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1703.Follow Health, Safety, and Environmental Guidelines for opencast mines (Including Mine Vocational Training Rule)	30	50	-	20	100	25
<b>Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>	<b>100</b>	<b>25</b>

Elective: 3 U/G Coal

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1704.Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)	30	50	-	20	100	25
<b>Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>	<b>100</b>	<b>25</b>

Optional: 1 Other Special Vehicle

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1305.Perform Other Special Vehicle Driver Operations	30	70	0	0	100	40
<b>Total</b>	<b>30</b>	<b>70</b>	<b>-</b>	<b>-</b>	<b>100</b>	<b>40</b>

Optional: 2 Explosive-van & Diesel-tanker



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### Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1304.Perform various Operations of the Explosive van/Diesel Tanker	30	70	0	0	100	40
<b>Total</b>	<b>30</b>	<b>70</b>	<b>-</b>	<b>-</b>	<b>100</b>	<b>40</b>



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## Qualification Pack

### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training



## Qualification Pack

### Glossary

<b>Sector</b>	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.



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<b>Knowledge and Understanding (KU)</b>	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
<b>Organisational Context</b>	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today’s world. These skills are typically needed in any work environment 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.
<b>Electives</b>	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
<b>Options</b>	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.