

OPENCAST MINING

National Certificate: Rockbreaking: Surface Excavations

SAQA: 62869
NQF: 3
Duration: 12 Months

Accrediting SETA: MQA
Credits: 141
RPL: Yes

Purpose

Rockbreaking operations are often conducted under dangerous and difficult conditions, which have to be managed appropriately in order to preserve lives and protection of equipment working in close proximity, and ensure operational efficiency. The National Certificate in Rockbreaking for Surface Excavations (NQF Level 3) is a statutory requirement in terms of the Mine Health and Safety Act and Regulations for persons conducting rockbreaking operations to be deemed competent. Learners acquiring this qualification will have an improved understanding of their role and will acquire the applied competencies to consistently and effectively execute their duties by contributing to the surface mining process and adhering to quality, occupational safety and legislative requirements.

Entry Criteria

- Communications and Mathematical Literacy - NQF Level 2
- Display understanding of the mechanical and electrical engineering discipline processes and procedures Level
- Demonstrate knowledge pertaining to basic health and safety principles in and around a workplace L1
- Understand the kinds of minerals and related products mined in the South Africa Mining & Minerals Sector and their importance to both the local stakeholders and within the global arena L1

Qualification Rules:

This qualification is made up of fundamental, core and elective unit standards and a minimum of 126 credits is required to complete the qualification:

Fundamental:

- All 36 credits must be achieved

Core:

- All 65 credits must be achieved

Elective:

- Learners are to choose a specialisation area and then complete the compulsory and elective Unit Standards listed for that specialisation totalling a minimum of 40 Credits.

Exit Level Outcomes:

- Communicate and solve problems in a variety of ways.
- Adhere to occupational health, safety, environmental and legislative requirements
- Conduct primary and secondary rockbreaking operations in a safe and proper manner in accordance with legislative requirements
- Take control of rockbreaking operations

Core Unit Standards

SAQA ID	UNIT STANDARD TITLE	CREDITS
115101	Address workplace hazards and risks	4
116520	Apply safety, health and environmental principles and procedures in a workplace	2
257036	Demonstrate a basic understanding of explosives and accessories	2
257033	Demonstrate an understanding of support methods in surface mines and quarries	4
116533	Demonstrate basic knowledge and understanding of emergency preparedness and response	2
257055	Identify and demarcate misfires in a surface excavation	2
257022	Make up primer and charge holes	2
244378	Receive, handle, store and issue explosives and accessories at a workplace	2
257058	Time and connect blast initiating systems	2
116534	Carry out basic first aid treatment in the workplace	2
257037	Carry out secondary breaking using explosives in surface excavations	11
257023	Co-ordinate drilling and blasting operations	10
230010	Demonstrate knowledge of the geological nature of surface extraction sites	6
257078	Examine and make safe blasted Surface excavations	5
257016	Examine and make safe non-blasted surface excavations	4
257059	Prepare and mark off work area for drilling	3
257057	Read and interpret surface excavation plans	2

Fundamental Unit Standards

SAQA ID	UNIT STANDARD TITLE	CREDITS
119472	Accommodate audience and context needs in oral/signed communication	5
9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	2
9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	4
119457	Interpret and use information from texts	5
9012	Investigate life and work related problems using data and probabilities	5
119467	Use language and communication in occupational learning programmes	5
7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	5
119465	Write/present/sign texts for a range of communicative contexts	5

Elective Unit Standards

SAQA ID	UNIT STANDARD TITLE	CREDITS
257030	Assist blasting operations	4
256997	Break rock using a hydraulic rock breaker	13
10490	Carry out secondary breaking by mechanical means	8
14788	Contribute to maintenance of equipment	18
244376	Cut mild steel by means of an Oxy-acetylene cutting torch	3
257040	De-water blast holes using vehicle mounted de-watering pump	4
256998	Deliver compressed air using a mobile electrical compressor	4

253025	Demonstrate knowledge and ability to work in a surface mine	8
257021	Doze material using a rubber wheel dozer	14
116632	Drill holes for blasting and/or splitting dimension stone blocks using a mechanised drill rig	6
116658	Drill intersecting holes for diamond wire sawing	7
230011	Drill medium diameter blast holes using an hydraulic or pneumatic drilling rig and compressor	5
230020	Drill small diameter blast holes using a percussion drilling rig and compressor	5
257024	Haul and dump material using a haul truck	11
257077	Illuminate an area using a lighting plant	2
257042	Install and maintain an initiating system in a surface mine	2
10760	Join a conveyor belt by means of mechanical clips	2
253582	Lift and move a load using manual lifting equipment and tackle	8
257034	Load and offload material using a skid steer loader	9
257031	Load, Haul and Dump material using a front end loader	16
257035	Load, haul and dump material using a scraper	12
257019	Load, transport and place explosives components into blast holes using a mixer-placer truck	6
10458	Mill materials in a dry process mill utilising grinding materials	22
256995	Move trailing cable using cable reeler	8
230018	Operate a mixer-placer explosives truck	6
10470	Operate Programmable Logic Control (PLC) Systems	5
14911	Participate in formal meetings	3
12484	Perform basic fire fighting	4
12208	Perform lubrication on production machinery	3
257029	Pump water using a De-watering Pump	4
257018	Relocate machines and equipment using a lowbed	10
116625	Split dimension stone blocks by means of non explosive methods	4
257060	Suppress dust using a water bowser	10
257015	Transport and distribute explosives by means of a light duty explosives vehicle	4
257017	Transport and distribute explosives using a heavy-duty explosives vehicle	2
257135	Transport and distribute fuel using a Fuel Bowser	4
257020	Transport material and equipment using a flat back truck	10
257025	Transport personnel, material and equipment using Light Delivery Vehicle	4
116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	4
117924	Use a Graphical User Interface (GUI)-based word processor to format documents	5
257038	Use a track dozer to move material	14
252234	Work in mineral product silos and bins for operational or maintenance purposes	3
13912	Apply knowledge of self and team in order to develop a plan to enhance team performance	5
257041	Bar down loose rocks using appropriate equipment	4
257039	Blast materials in Surface excavations	15
257095	Carry out basic surveying and calculations in surface excavations	8
110218	Collect, store and issue explosives from a surface magazine	10
116614	Conduct blasting operations in dimension stone quarries	15
230013	Conduct face profiling and blast hole surveys	6

230019	Demonstrate and apply knowledge of dimension stone quality and geology to block extraction	21
116627	Demonstrate basic understanding of dimension stone geology and mineralogy	16
244422	Demonstrate knowledge of the most common harmful gases and vapours	4
257026	Drill blast holes in a surface mining operation	15
257076	Excavate and load material using hydraulic excavator	26
257115	Grade material using a motor grader	14
9719	Grind material by means of a rod mill	10
116626	Handle dimension stone blocks by means of front end loader	13
257027	Install support in surface mines and quarries	7
257032	Load material using a face shovel	26
116663	Make saw cuts by means of diamond wire saw	15
260984	Manufacture explosives on-site for surface excavations	8
10459	Operate materials handling plant	8
257028	Operate Tractor Loader Backhoe	13
117877	Perform one-to-one training on the job	4
256996	Relocate material using a dragline	26
257056	Remove hazardous ground by means of blasting	4
230017	Carry out blasting environmental testing	6
257075	Design blasts for surface excavations	24
242810	Manage Expenditure against a budget	6