

Qualifications

National Certificate: Rock breaking – Surface Excavation NQF Level 3

Introduction: 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 rock breaking operations to be deemed competent and has replaced the Government Opencast Blasting Certificate which ceased on 30 June 2009.

Rockbreaking activities involve the breaking of rock in a pre-determined sequence to maximise the break of the advancing bench and at the same time minimising damage to the surroundings and to ensure a safe working environment for the production teams. These rock breaking activities could be undertaken by means of explosives or mechanical means or a combination of both. This qualification provides for both primary and secondary rock breaking operations in surface excavations in terms of Chapter 4, Explosives Regulations under the Mines Health and Safety Act.

Description: The Examine & Make Safe Surface Mines/Quarries Skills Program as well as the Blast Assistant Skills Program will remain Exit Level Outcomes in their own right as well as being included in the Rockbreaking Qualification. A third short course – Blasting Practices – provides the higher order blasting training towards the remainder of the unit standards to complete the Rockbreaking Qualification

This will enable those candidates who require these competencies to complete the individual Skills Programmes as required and also enable them to continue with their training if they so wish.

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. The qualification is designed to be flexible and accessible so that people are able to demonstrate the competencies required to work in a safe, healthy and effective manner in a surface mining environment. Learners credited with this qualification are able to:

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

SAQA Qualification ID: 62869

Target group:

New employees and or existing employees.

Entry Level Requirements:

- Communication and Mathematical Literacy at NQF Level 2.
- Display understanding of the mechanical and electrical engineering discipline processes and procedures Level 2.
- 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.

Certification:

If competent a competence certificate will be issued by MQA

Duration:

235 Days

Days can be reduced depending on RPL

Fundamental: (Could be RPL'd ± 2 days per unit standard)

- All 36 credits must be achieved.

Core:

- All 65 credits from the list of Core Unit Standards must be achieved.

Elective: (Could be RPL'd ± 2 days per unit standard)

- A minimum of 40 credits at level 2 or above must be selected from the list of elective unit standards.

LEVEL	TYPE	CREDITS	U/S	Description
Level 2	Core	4	115101	Address workplace hazards and risks
Level 2	Core	2	116520	Apply safety, health and environmental principles and procedures in a workplace
Level 2	Core	2	257036	Demonstrate a basic understanding of explosives and accessories
Level 2	Core	4	257033	Demonstrate an understanding of support methods in surface mines and quarries
Level 2	Core	2	116533	Demonstrate basic knowledge and understanding of emergency preparedness and response
Level 2	Core	2	257055	Identify and demarcate misfires in a surface excavation
Level 2	Core	2	257022	Make up primer and charge holes
Level 2	Core	2	244378	Receive, handle, store and issue explosives and accessories at a workplace
Level 2	Core	2	257058	Time and connect blast initiating systems
Level 3	Core	2	116534	Carry out basic first aid treatment in the workplace
Level 3	Core	11	257037	Carry out secondary breaking using explosives in surface excavations
Level 3	Core	10	257023	Co-ordinate drilling and blasting operations
Level 3	Core	6	230010	Demonstrate knowledge of the geological nature of surface extraction sites
Level 3	Core	5	257078	Examine and make safe blasted Surface excavations
Level 3	Core	4	257016	Examine and make safe non-blasted surface excavations
Level 3	Core	3	257059	Prepare and mark off work area for drilling
Level 3	Core	2	257057	Read and interpret surface excavation plans
Level 3	Fundamental	5	119472	Accommodate audience and context needs in oral/signed communication
Level 3	Fundamental	2	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
Level 3	Fundamental	4	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts
Level 3	Fundamental	5	119457	Interpret and use information from texts
Level 3	Fundamental	5	9012	Investigate life and work related problems using data and probabilities
Level 3	Fundamental	5	119467	Use language and communication in occupational learning programmes
Level 3	Fundamental	5	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues
Level 3	Fundamental	5	119465	Write/present/sign texts for a range of communicative contexts
Level 2	Elective	4	257030	Assist blasting operations
Level 2	Elective	13	256997	Break rock using a hydraulic rock breaker
Level 2	Elective	8	10490	Carry out secondary breaking by mechanical means
Level 2	Elective	18	14788	Contribute to maintenance of equipment
Level 2	Elective	3	244376	Cut mild steel by means of an Oxy-acetylene cutting torch
Level 2	Elective	4	257040	De-water blast holes using vehicle mounted

				de-watering pump
Level 2	Elective	4	256998	Deliver compressed air using a mobile electrical compressor
Level 2	Elective	8	253025	Demonstrate knowledge and ability to work in a surface mine
Level 2	Elective	14	257021	Doze material using a rubber wheel dozer
Level 2	Elective	6	116632	Drill holes for blasting and/or splitting dimension stone blocks using a mechanised drill rig
Level 2	Elective	7	116658	Drill intersecting holes for diamond wire sawing
Level 2	Elective	5	230011	Drill medium diameter blast holes using an hydraulic or pneumatic drilling rig and compressor
Level 2	Elective	5	230020	Drill small diameter blast holes using a percussion drilling rig and compressor
Level 2	Elective	11	257024	Haul and dump material using a haul truck
Level 2	Elective	2	257077	Illuminate an area using a lighting plant
Level 2	Elective	2	257042	Install and maintain an initiating system in a surface mine
Level 2	Elective	2	10760	Join a conveyor belt by means of mechanical clips
Level 2	Elective	8	253582	Lift and move a load using manual lifting equipment and tackle
Level 2	Elective	9	257034	Load and offload material using a skid steer loader
Level 2	Elective	16	257031	Load, Haul and Dump material using a front end loader
Level 2	Elective	12	257035	Load, haul and dump material using a scraper
Level 2	Elective	6	257019	Load, transport and place explosives components into blast holes using a mixer-placer truck
Level 2	Elective	22	10458	Mill materials in a dry process mill utilising grinding materials
Level 2	Elective	8	256995	Move trailing cable using cable reeler
Level 2	Elective	6	230018	Operate a mixer-placer explosives truck
Level 2	Elective	5	10470	Operate Programmable Logic Control (PLC) Systems
Level 2	Elective	3	14911	Participate in formal meetings
Level 2	Elective	4	12484	Perform basic fire fighting
Level 2	Elective	3	12208	Perform lubrication on production machinery
Level 2	Elective	4	257029	Pump water using a De-watering Pump
Level 2	Elective	10	257018	Relocate machines and equipment using a lowbed
Level 2	Elective	4	116625	Split dimension stone blocks by means of non explosive methods
Level 2	Elective	10	257060	Suppress dust using a water bowser
Level 2	Elective	4	257015	Transport and distribute explosives by means of a light duty explosives vehicle
Level 2	Elective	2	257017	Transport and distribute explosives using a heavy-duty explosives vehicle
Level 2	Elective	4	257135	Transport and distribute fuel using a Fuel Bowser
Level 2	Elective	10	257020	Transport material and equipment using a flat back truck
Level 2	Elective	4	257025	Transport personnel, material and

				equipment using Light Delivery Vehicle
Level 2	Elective	4	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets
Level 2	Elective	5	117924	Use a Graphical User Interface (GUI)-based word processor to format documents
Level 2	Elective	14	257038	Use a track dozer to move material
Level 3	Elective	5	13912	Apply knowledge of self and team in order to develop a plan to enhance team performance
Level 3	Elective	4	257041	Bar down loose rocks using appropriate equipment
Level 3	Elective	15	257039	Blast materials in Surface excavations
Level 3	Elective	8	257095	Carry out basic surveying and calculations in surface excavations
Level 3	Elective	10	110218	Collect, store and issue explosives from a surface magazine
Level 3	Elective	15	116614	Conduct blasting operations in dimension stone quarries
Level 3	Elective	6	230013	Conduct face profiling and blast hole surveys
Level 3	Elective	21	230019	Demonstrate and apply knowledge of dimension stone quality and geology to block extraction
Level 3	Elective	16	116627	Demonstrate basic understanding of dimension stone geology and mineralogy
Level 3	Elective	4	244422	Demonstrate knowledge of the most common harmful gases and vapours
Level 3	Elective	15	257026	Drill blast holes in a surface mining operation
Level 3	Elective	26	257076	Excavate and load material using hydraulic excavator
Level 3	Elective	14	257115	Grade material using a motor grader
Level 3	Elective	10	9719	Grind material by means of a rod mill
Level 3	Elective	13	116626	Handle dimension stone blocks by means of front end loader
Level 3	Elective	7	257027	Install support in surface mines and quarries
Level 3	Elective	26	257032	Load material using a face shovel
Level 3	Elective	15	116663	Make saw cuts by means of diamond wire saw
Level 3	Elective	8	260984	Manufacture explosives on-site for surface excavations
Level 3	Elective	8	10459	Operate materials handling plant
Level 3	Elective	13	257028	Operate Tractor Loader Backhoe
Level 3	Elective	4	117877	Perform one-to-one training on the job
Level 3	Elective	26	256996	Relocate material using a dragline
Level 3	Elective	4	257056	Remove hazardous ground by means of blasting
Level 4	Elective	6	230017	Carry out blasting environmental testing
Level 4	Elective	24	257075	Design blasts for surface excavations
Level 4	Elective	6	242810	Manage Expenditure against a budget