

National Certificate: Strata Control Operations NQF Level 3

Introduction: This NQF Level 3 Qualification builds on the basic foundation of theoretical knowledge, technical skills and practical ability applicable to the discipline of strata control and rock engineering provided by the NQF Level 2 Qualification. The NQF Level 3 Qualification develops the learner's focus from merely "recording" strata control-related issues towards recognizing, investigating and interpreting these issues. It is intended to assist Strata Control Observers to further their career in rock engineering, as well as serve as the appropriate qualification for a learner to be appointed as a Junior Strata Control Officer. This Qualification has 4 specialisation streams for learners to follow, based on different mining environments which vary significantly in geological composition, geotechnical environment and extraction method. Learners entering this Qualification will typically be Strata Control Observers working in a rock engineering department or consultancy, with a NQF Level 2 National Certificate in Strata Control or similar, although learners with other relevant NQF Level 3 Qualifications wishing to articulate horizontally will also be considered. While completing the qualification, learners will ideally act or relieve in the position of Strata Control Officer or Junior Strata Control Officer as part of their experiential learning. Upon obtaining the qualification, the learner will be eligible for appointment as a Junior Strata Control Officer. As such, he/she will be responsible for strata control-related issues for a small shaft or mine, or a section of a larger mine, either alone or with the assistance of one or more Strata Control Observers whom he/she will be expected to supervise. This is the third qualification in a learning pathway for Rock Engineering.

Description: The purpose of this qualification is to equip learners with the theoretical knowledge, technical skills and practical ability to function as a Junior Strata Control Officer within the mining environment. Junior Strata Control Officers assist personnel engaged in mining operations to ensure:

- The safety and efficiency of mining operations.
- The development of mining personnel skill levels.
- Pro-active reduction in levels of rock related risk in mining operations.

Learners credited with this qualification will be able to:

- Communicate and solve problems in a variety of ways.
- Demonstrate knowledge and application of workplace skills.
- Demonstrate knowledge and understanding of strata control principles.
- Apply strata control and risk assessment principles in mining operations.
- Apply geotechnical and strata control methods, procedures, techniques and equipment to gather geotechnical and strata control-related data.
- Record, interpret and report on observations.

On a practical level, learners equipped with this qualification will be able to conduct the essential operations associated with:

- Identification and reporting of anomalous ground conditions.
- Gathering and recording of geotechnical and strata-control related data.
- Monitoring and testing of support measures.
- Observation and reporting of sub-optimal mining practices.
- Identification of higher risk areas.
- Assist production personnel in identification of rock related hazards; and assessing the risk associated with the different hazards.
- Conduct on-the-job coaching regarding strata control or rock related issues.

SAQA Qualification ID: 60369

Target group:

New employees and or existing employees.

Entry Level Requirements:

- Minimum Literacy and Numeracy ABET 4 or NQF 1 or RPL, Grade 9

Certification:

If competent a competence certificate will be issued by MQA

Duration:

170 Days

Days can be reduced depending on RPL

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

- All 36 credits in the Fundamental Component are compulsory.

Core:

- All 91 credits in the Core Component are compulsory.

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

- A minimum of 9 credits at Level 2 or above must be selected from the list of elective unit standards that meet site-specific requirements.

National Certificate: Strata Control Operations NQF Level 3 (60369)

LEVEL	TYPE	CREDITS	U/S	Description
Level 3	Core	4	110187	Achieve excavation stability in the presence of geological discontinuities and brows
Level 3	Core	3	252554	Apply calculations of areas, volumes, masses and weights to simple shapes in strata control
Level 3	Core	2	244611	Apply problem-solving techniques to make a decision or solve a problem in a real life context
Level 3	Core	3	254581	Apply the risk assessment process to rock-related hazards
Level 3	Core	5	113909	Coach a team member in order to enhance individual performance in work environment
Level 3	Core	2	254575	Conduct elementary in-situ tests of support installation quality
Level 3	Core	2	115750	Demonstrate a basic understanding of the causes of falls of ground
Level 3	Core	3	115683	Demonstrate a basic understanding of the effects of drilling and blasting on the surrounding rock mass
Level 3	Core	3	115746	Demonstrate an elementary understanding of pillar characteristics, behaviour and function
Level 3	Core	3	254583	Demonstrate an elementary understanding of support units, their behaviour and application
Level 1	Core	1	115704	Demonstrate elementary knowledge and understanding of geology related to mining
Level 3	Core	2	254585	Demonstrate knowledge and understanding of rock engineering terminology, theory and mensuration
Level 3	Core	2	120337	Demonstrate knowledge pertaining to the preparation, conducting, recording and follow-up actions of a planned task observation in a working place
Level 3	Core	3	254588	Demonstrate the ability to understand and promote the implementation of rock-related mining standards as a strata control function
Level 3	Core	2	115552	Demonstrate understanding of the effects of brows on excavation stability
Level 3	Core	3	115686	Describe the effect of mining dimension on excavation stability
Level 3	Core	4	254576	Gather data from a basic level geotechnical rock mass monitoring programme
Level 3	Core	3	254578	Identify common support failure modes from observations
Level 3	Core	4	254587	Make a working place safe in a mine
Level 3	Core	2	114979	Operate a computer workstation in a business environment
Level 3	Core	3	115667	Recognise, record and report hazards associated with geological discontinuities
Level 3	Core	4	115549	Record geotechnical data and draw up a local geotechnical plan
Level 3	Core	2	120329	Respond to, implement and manage emergencies according to an emergency action plan in a workplace
Level 3	Core	3	9533	Use communication skills to handle and resolve conflict in the workplace
Level 4	Core	4	254586	Demonstrate an understanding of the effect of excessive spans and poorly installed or damaged support units on working place stability
Level 4	Core	3	254584	Identify signs of stress-induced damage in mining
Level 4	Core	8	9652	Perform geotechnical core logging and sampling in a localised known environment to provide data for mining excavation design
Level 4	Core	8	9653	Perform geotechnical mapping and sampling in a localised known environment to provide data for mining excavation design
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	2	252574	Demonstrate knowledge of various slope failure modes
Level 3	Elective	3	254582	Assess gully stability under different geotechnical conditions
Level 3	Elective	3	115555	Conduct an inspection to evaluate ground conditions in an on-reef development excavation prior to, during and after ledging operations
Level 3	Elective	2	115545	Demonstrate an understanding of excavation stability in a rock pass
Level 3	Elective	3	254574	Demonstrate an understanding of slope design to improve stability
Level 3	Elective	2	115670	Demonstrate elementary knowledge and understanding of multi-reef / seam environments to achieve excavation stability with support
Level 3	Elective	3	115668	Demonstrate elementary knowledge and understanding of precautions required to achieve excavation stability in remnants
Level 3	Elective	3	115673	Demonstrate elementary knowledge and understanding of rockburst prone mining operations to achieve excavation stability with support
Level 3	Elective	2	115530	Demonstrate knowledge and basic understanding of the effect of high mining heights on artificial support installation and effectiveness
Level 3	Elective	3	254589	Demonstrate knowledge and understanding of factors affecting the stability of service excavations
Level 3	Elective	4	254580	Demonstrate knowledge and understanding of the effect of seismicity on support units and workplace stability
Level 3	Elective	3	254579	Demonstrate knowledge of the effects of blasting operations on highwall/slope stability
Level 3	Elective	4	115758	Identify and evaluate the effect of seismic activity on the rock mass and support units