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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

**Bomb Disposal**

Registered by **NSB 08**, Law, Military Science and Security, publishes the following Generic unit standards for public comment.

This notice contains the titles, fields, subfields, NQF levels, credits, and purpose of the unit standards upon which qualifications are based. The **full** unit standards can be accessed via the SAQA web-site at [www.saga.org.za](http://www.saga.org.za). Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, **Hatfield** Forum West, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the unit standards should reach SAQA at the address below and **no** later than **28 November 2004**. All correspondence should be marked Standards Setting – Bomb Disposal and addressed to

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**JOE SAMUELS**

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**National Diploma: Bomb Disposal: NQF Level 5**

<b>Field:</b>	NSB 08: Law, Security and Military Science
<b>Sub-field:</b>	Safety in Society
<b>Level:</b>	5
<b>Credit:</b>	279 (minimum)
<b>Issue date:</b>	
<b>Review date:</b>	

**Rationale of the qualification**

This qualification reflects the workplace needs in the sector Safety in Society which relate to bomb disposal competencies. The relevant roles in maintaining public order, prevention of crime, investigation of crime, combating crime and protection of people and property by upholding the law in specific contexts are examined. It will allow learners employed in the Safety in Society sector to progress to advanced bomb disposal competencies and perform accordingly. Learners will also be able to pursue studies at a more advanced managerial level. This qualification will further ensure better service delivery to the community thereby providing a safe and secure community environment, which will enhance the country's economy.

**Purpose:**

The purpose of this qualification is to obtain a nationally recognized qualification in the policing environment and to equip policing officials with the necessary bomb disposal skills in specific specialized areas in order to uplift the professional standards of policing.

This is the first qualification for policing officials who wish to acquire bomb disposal skills within the policing environment. The policing official will operate in an environment where integrity and ethics play a vital role, and where their conduct will influence the perception of the community with regards to the integrity of the police service.

The unit standards in this qualification will allow vertical and horizontal progression and mobility leading to various bomb disposal skills. Elective standards will further allow for progression and career pathing into specific specialist areas. The qualification makes provision for movement between different sub-fields of Safety in Society.

The learner obtaining this qualification will be able to enhance service delivery to their internal and external clients. Qualifying learners are able to exercise their bomb disposal responsibilities in accordance with the constitution of South Africa. The qualification will allow for transformation within the policing environment through the recognition of prior learning that will allow for the recognition of formal, non-formal and in-formal learning leading to the achievement of a national qualification by learners.

**Access to the Qualification**

The qualification is open to everyone who wishes to pursue a bomb disposal career in the Safety in Society sector, policing and/or national defence environment in particular. Learners must be free of physical disabilities, fit the necessary psychometric profile, and possess the ability to work under pressure.

**Learning assumed to be in place**

This qualification assumes that learners have the following skills, knowledge and values.

- The ability to read, write, and use written resource material on at least level 4
- The ability to use and understand fundamental mathematical / numeracy concepts on at least level 4
- Balance constitutional and legal rights of individuals with the competence to legally infringe those rights in the service of maintaining a safe and secure society.

**Exit Level Outcomes**

Qualifying learners are able to:

**Exit Level 1:** Competently balance the South African Constitution and relevant legislation with the circumstances of when and how to infringe on certain human rights to ensure safety in society.

**Associated Assessment Criteria:**

- 1.1 Relevant legislation regarding the disposal of explosives and munition and human rights are understood and practiced in a responsible and accountable manner.
- 1.2 The vision of the South African Police Service is measured against any given situation and adhered to from a community service point of view.
- 1.3 Bomb threats and incidents are handled in the correct manner according to departmental policies and procedures
- 1.4 Independent decisions which are made in stressful situations will withstand public and departmental scrutiny from a legal point of view when the implications of these decisions and subsequent actions are assessed.
- 1.5 Safety of society is the main driving force when resolving the threat of a bomb incident.

**Exit Level 2:** Understand, conceptualise and effectively demonstrate capabilities where the use of explosives are necessary as well as apply restrictive measures as and when bomb incidents are identified.

**Associated Assessment Criteria:**

- 2.1 History, status, composition and impact of explosives are considered when resolving an incident where the public's safety is in jeopardy.
- 2.2 Correct identification of types of bombs and the various methods of disarmament must be analysed and correctly be utilised in different incidents.
- 2.3 Properties and methods of bomb disposal must be demonstrated and new trends are regularly scrutinised to stay abreast of the threat to society.

**Exit Level 3:** Utilise critical thinking involving science and technology (as well as bomb disposal techniques), when analysing and subsequently providing solutions to situations encountered in the bomb disposal environment.

**Associated Assessment Criteria:**

- 3.1 Bomb threat indicators are researched and scenarios are developed to foresee possible threats and solutions in the bomb disposal context.
- 3.2 Case by case scenarios should be evaluated on a continuous and individual basis.
- 3.3 Technological advances are monitored and appraised within the bomb disposal environment.

- 3.4** World matters relating to terrorism are scrutinised and possible scenarios on the impact thereof on South Africa must be debated.

**Exit Level 4:** Develop strategies to handle stressful environments, work effectively as part of a team and still maintaining the ability to make independent decisions should be constructed and derived.

**Associated Assessment Criteria:**

- 4.1** Performing competently as part of an elite unit or team is measured.  
**4.2** Stressful situations and how the person reacts to it is evaluated continuously.  
**4.3** Taking individual decisions which could have far reaching consequences are appraised.

**International comparability**

Since **1994**, the South African Police Service has engaged in extensive liaison with colleagues and related services in the international community. Material, best practices and many other innovations have been considered and integrated into this qualification.

This qualification is benchmarked with countries such as **USA** (specifically the Federal **Buro** of Investigation), UK, Spain, Germany and Frans. International publications, and Post-Blast investigations in Scotland Yard were also consulted. It is also benchmarked with countries in African such as Swaziland, Botswana, Lesotho, Mozambique, Zambia, Angola, Mauritius, Zimbabwe, Democratic Republic of the Congo, Malawi and Namibia which form part of SARPCCO "Southern African Regional Police Chiefs Corporation Organization"

This qualification is built in such a way that it will receive constant international review and input. Other national institutions and Departments were consulted during the standards generation processes such as the Department of Defence Force, CSIR (Council for Scientific Industrial Research (defence tek) and Department of Health, Department of Labour, National Department of Transport, national nuclear regulator, South African National Standards (SANS) and Training Providers.

From the year 2002 the South African Police engaged in an assessment and assessment practices project with the Swedish Police. The **two** organizations will assist each other in evaluating and generating assessment and assessment practices.

**Integrated Assessment**

The applied competence (practical, foundational and reflective competencies) of this qualification will be achieved if a learner is able to achieve all exit level outcomes of the qualification. The identification and solving of known problems, team work, organising self, using of data, implication of actions and reactions in the world as a set of related systems must be assessed during combinations of practical, foundational and reflexive competencies assessment methods and tools to determine the whole personal development and integration of applied knowledge and skills.

Certain exit level outcomes are measurable and verifiable through assessment criteria assessed in one application. Applicable assessment tool(s) to establish the foundational, reflective and embedded knowledge to problem solving and application of the world as a set of related systems within the Policing environment. Competence will be assessed when conducting formative and summative assessment.

### **Formative assessment**

The assessment criteria for formative assessment are described in the various unit standards. Formative assessment takes place during the process of learning and assessors should use a range of assessment methods and tools that support each other to assess total competence.

These tools may include the following:

- *In-situ* (on-the-job) observations
- Role-play simulations
- Structured group discussions
- Knowledge tests, exams, case studies, projects, registers, logbooks, workbooks
- Oral report backs (presentations)
- Portfolios of evidence
- Projects
- Experiential learning
- Working in teams
- Scenario sketching
- Practical applications in the workplace

The assessment methods and/or tools used by the assessor must be fair in a sense that they do not hinder or advantage the learner, valid in a sense that they measure what they intend to measure, reliable in a sense that they are consistent and delivers the same output across a range of learners and practical in a sense that they take into account the available financial resources, facilities, equipment and time.

### **Summative assessment**

Summative assessment/ Terminal assessment are carried out at the end of the learning programme to assess the achievement of the learner. A detailed portfolio of evidence is required to prove the practical, applied and foundational competencies of the learner.

### **Assessors and moderators**

Assessors and moderators should develop and conduct their own integrated assessment by making use of a range of formative and summative assessment methods. Assessors should assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience.

Unit standards associated with the qualification must be used to assess specific and critical cross-field outcomes. During integrated assessments the assessor should make use of formative and summative assessment methods and should assess combinations of practical, applied, foundational and reflective competencies.

#### Recognition of prior learning

This qualification may be achieved in part or in whole by recognition of prior learning. The candidate in this case must be assessed / evaluated in the same manner as described in the paragraph that deals with integrated assessment above.

#### Articulation possibilities

The choice of elective learning component allows the learner to change to another pathway in a policing environment at the same level or at the next level.

Some fundamental and non-policing core learning components will equip the learner with credits that will be useful in the safety in society sector and other learning fields that the learner may wish to pursue.

#### Moderation Options

All providers offering the learning to achieve this qualification must be accredited by the relevant ETQA or through an ETQA with a memorandum of understanding with the relevant ETQA.

All assessors must be registered with the relevant ETQAs, and must comply with the requirements for assessors as prescribed by the relevant ETQAs. In addition, the assessors must have at least the skills levels in this field equivalent to those required by the NQF at level 5, plus two years of practice in this field as a worker or expert consultant or provider. All moderators moderating the assessment of a learner for this qualification must be registered with the relevant ETQAs.

#### Criteria for registration of assessors

For an applicant to be registered as an assessor, the applicant needs the following:

- A minimum of five years practical, relevant occupational experience;
- Declared competent in all the outcomes of the National Assessor Unit Standards as stipulated by SAQA;
- Detailed documentary proof of educational qualification, practical training undergone, and experience gained by applicant must be provided;
- Meet any other requirements stipulated by the ETQAs.

## CRITICAL CROSS FIELD OUTCOMES

This qualification addresses the following critical cross-field outcomes. The way in which the critical cross-field outcomes are addressed is presented in detail in the unit standards.

- Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Working effectively with others as a member of a team, group, organization, or community.
- Organizing and managing oneself and one's activities responsibly and effectively.
- Collecting, analyzing, organizing and critically evaluating information.
- Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Using science and technology effectively and critically, showing responsibility towards the environment and health of others.
- Demonstrating an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation.

## RULES OF COMBINATION

Learners undertaking the National Diploma in Bomb Disposal will be required to do all 36 Fundamental credits and all 208 core credits. For the achievement of the minimum 279 credits required to achieve the qualification, learners will be required to achieve at least 35 credits from the elective component. It is strongly advised that learners should not only achieve the minimum 35 credits in the elective component but that they should ensure for career purposes that once they choose an elective stream, they should complete all the credits in that stream

**Title Matrix: National Diploma: Bomb Disposal: NQF LEVEL 5**

<b>National Diploma: Bomb Disposal: NQF LEVEL 5 279 credits</b>		
<b>FUNDAMENTAL: 36 credits</b>	<b>L</b>	<b>Cr</b>
11499 Write a wide variety of texts in X	5	5
9407 Communicate with clients and discuss work	5	5
9224 Implement policies regarding HIV/AIDS in the workplace	5	4
15906 Demonstrate an understanding of stress in order to apply strategies to achieve optimal stress levels in personal and work situations	5	5
116486 Explain personal and social responsibility in independent decision making contexts	4	5
7854 Provide first aid	4	4
9243 Monitor occupational health and safety	4	8
<b>CORE: 208 credits</b>		
C.1. Demonstrate an understanding of the history / origin of explosives and the impact / effect of explosives / explosions	5	3
C.2. Identify and apply / implement different blasting accessories and initiating systems and blasting techniques	5	22
C.3. Identify and explain explosives	5	9
C.4. Identify and explain Explosive Ordnance	5	9
C.5. Dispose of explosives and munition	5	9
C.6. Identify, explain and apply basic electronics relevant to the bomb disposal field	5	9
C.7. Identify and explain switches and/or triggering devices	5	13
C.8. Identify and explain Improvised Explosive Devices (IED)	5	18
C.9. Handle Bomb Incidents	5	20
C.10. Conduct searching / sweeping	5	10
C.11. Conduct and Execute Bomb Disposal	5	17
C.12. Identify and Explain Non Destructive testing techniques	5	9
C.13. Conduct planning, briefing and debriefing sessions	5	3
C.14. Handle unconventional mine warfare incidents	5	7
C.15. Handling and securing of weaponry caches	5	9
C.16. Apply explosives tactically for the breaching of obstacles	5	9
C.17. Apply the dynamics of robotics in the bomb disposal field	5	10
C.18. Apply Chemical, Biological and Radiological Countermeasures	5	7
C.19. Conduct post-blast investigations	5	11
C.20. Conduct an analysis of explosives vulnerability	5	4
<b>ELECTIVES: combination of any 35 credits</b>		
E.1 Understand and apply the dynamics of robotics	5	10
E.3 Understand and apply the dynamics of electronics in bomb control control	5	22
E.4 Understand and apply the dynamics of chemical Biological and radiological counter measures	5	21
E.5 Understand and apply internationally principles of dangerous good management	5	8
E.6 Conduct internal inspections on magazines	5	6
E.7 Demonstrate an understanding of explosives control	5	2
E.8 Demonstrate an understanding of explosives classification, marking and packaging requirements	5	5
E.9 Demonstrate an understanding of explosives transportation legislation and regulations	5	4
E.10 Demonstrate an understanding of explosives storage legislation and regulations	5	4
E.11 Demonstrate an understanding of explosives importation and exportation requirements	5	2
E.12 Control the use of explosives on a blasting site	5	4
E.13 Control the use of and trade in pyrotechnics	5	4