



Government Gazette

REPUBLIC OF SOUTH AFRICA

Vol. 479 Pretoria 27 May 2005 **No. 27621**



AIDS HELPLINE: 0800-0123-22 Prevention is the cure

GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 493

27 May 2005

Established in terms of Act 58 of 1995**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

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

Secondary Agriculture: Processing

publishes the following qualification for public comment.

This notice contains the titles, fields, sub-fields, **NQF** levels, credits, and purpose of the qualification upon which qualifications are based. The full qualification can be accessed via the **SAQA** web site at www.saqqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the **SAQA** offices, Hatfield Forum, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the qualification should reach **SAQA** at the address below and no *later than* **1 July 2005**. All correspondence should be marked **Standards Setting – SGB for Secondary Agriculture: Processing** and addressed to

The Director: Standards Setting and Development

SAQA

Attention: Mr. Eddie Brown

Postnet Suite 248

Private Bag X06

Waterkloof

0145

or faxed to 012 – 431-5144

ebrown@saqa.co.za


DUSMORÉ MPHUTHING
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

SAQA QUAL ID	QUALIFICATION TITLE		
49646	Further Education and Training Certificate: Sugar Manufacturing and Refining Technical Maintenance		
SGB NAME	NSB 01	PROVIDER NAME	
SGB for Secondary Agriculture: Processing	Agriculture and Nature Conservation		
QUAL TYPE	FIELD	SUBFIELD	
National Certificate	Agriculture and Nature Conservation	Secondary Agriculture	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUALIFICATION CLASS
Undefined	169	Level 4	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

A learner assessed as competent against this qualification, will be able to fault find, dismantle and repair and maintain work in a wide cross-section of skills specific to the sub-field of Secondary Agriculture e.g. Sugar Manufacturing and Refining industry. The learner will obtain a formally recognised qualification on level 4 on the NQF in the Field of Agriculture and Nature Conservation.

They will have enhanced communication skills as it pertains to the individual. All of these will contribute to the operational efficiency of the Sugar Refining Factories.

In addition the learners will be well positioned to extend their learning and practice into other areas of manufacturing process, or to strive towards welding, electrical, instrumentation and manufacturing unit standards and practice at higher levels.

The emphasis of the learning becomes more focussed at this level, after a broad multi-skilled base in the NQF 2 & 3 qualifications. The individual skills acquired are very similar to those required in other industries such as manufacturing and processing sectors.

Rationale:

The current emphasis in the industry is on multi-skilling as it is believed to enhance the employability of the individual. This qualification will enable the learner to acquire recognised competencies relevant to the various aspects of the Sugar Refining and Manufacturing industry.

The qualifying learner will operate in areas of activities such as routine maintenance of electrical and mechanical machinery in the sugar refining manufacturing processes. The learner will engage in activities such as the installation and repairs of basic electrical, instrumentation and mechanical machinery.

This is the third qualification in a series for learners who want to follow a career in the field of Sugar Industry Technical Maintenance. It also provides learners who have gained relevant experiences in the workplace with an opportunity to obtain credits through an RPL process.

The qualification also forms the basis for further learning in the field of Sugar Manufacturing Technical Maintenance where learners will engage in more complex maintenance and repair activities.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that a learner entering a programme leading to this qualification has achieved Mathematical Literacy and Communications skills at **NQF** Level 3 or equivalent.

Recognition of Prior Learning:

This qualification may be achieved in part or completely through the recognition of prior learning, which includes formal, informal and non-formal learning and work experience. The learner should be thoroughly briefed of the mechanism to be used and support and guidance should be provided. Care should be taken that the mechanism used provides the learner with an opportunity to demonstrate competence and is not too onerous as to prevent learners from taking up the RPL option towards gaining a qualification.

QUALIFICATION RULES

To obtain this qualification, the learner must obtain 60 credits from fundamental, 85 credits from core and 24 credits from the elective category to total 169 credits.

EXIT LEVEL OUTCOMES

1. Demonstrate an understanding of and an ability to fault find, dismantle, maintain, repair and install electrical and instrumentation equipment, complex mechanical assemblies, meeting output requirements and working safely with due care for fellow workers and the environment.
2. Demonstrate an understanding of production/operation maintenance requirements and an ability to diagnose and repair faults on machinery and equipment during production/operation.
3. Communicate with peers, production personnel and members of supervisory/management levels by gathering and summarise information from a range of sources and producing coherent presentations in a prescribed format.
4. Demonstrate an understanding of options for further learning in this or a related fields of learning and preparation requirements for such learning.
5. Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within an engineering context in the sugar industry and operate within familiar and new situations, taking responsibility and making decision.

Critical Cross-Field Outcomes:

The following reflect the ways in which the Critical Cross-Field Outcomes are applicable to this qualification. Examples where these Critical Cross-Field Outcomes apply in the unit standards, as well as the manner in which they are reflected.

1. Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made.

> Maintain brakes and clutches:

Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made through recognising and responding to non-conforming parts.

2. Working effectively with others as a team.

> Maintain gearboxes:

Working effectively with others as a team through interacting with colleagues and team members in order to acquire required consumables, lubricants and cleaning agents.

3. Organising and managing oneself and one's activities responsibly and effectively.

> Diagnose and repair faults on equipment and machinery during production:
Organising and managing oneself and one's activities responsibly and effectively when applying correct procedures and techniques while diagnosing and repairing faults on machinery during production.

4. Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.

> Produce components using engineering turning operation:
Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion when reporting on and recording information on work performed.

5. Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

> Repair 3 phase AC motor control gear:
Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation through understanding and explaining the procedures of three phase AC motor control gear.

ASSOCIATED ASSESSMENT CRITERIA

1:

- > Condition of equipment and machinery is monitored and faults diagnosed.
- > Assemblies are maintained and refurbished to required standards.
- > Output requirements are met.
- > Safe working practices are adhered to.

2:

- > Recurrent equipment and machinery faults and their root causes are identified.
- > Minor repairs on line are performed.
- > Documentation on major repair requirements is completed.
- > Equipment and machinery components requiring major repair dismantled and despatched to workshop.
- > Major repair requirements are reported.
- > Production time schedule is maintained.

3:

- > Information is gathered from a range of sources and accurately summarised into a prescribed format.
- > Information is presented in a timely manner in the required format to appropriate parties.
- > Relationships with peers, production personnel and members of supervisory/management levels are established and maintained.

4:

- > Options are explained.
- > Preparation requirements are explained.
- > Learning plan is developed.

5:

- > Solutions to machining problems are chosen based on a clear analysis of information gathered through diagnostic procedures.
- > Procedures are modified to respond to unfamiliar problems where appropriate.
- > All action related to problem solving are accurately recorded for future reference.

Integrated Assessment:

Learners will produce evidence of the following:

> Verbal and written explanations of reasons for adhering to operational and work site procedures as well as statutory requirements, adhering to specific sequence of operations, identifying deviations, taking corrective actions and recording relevant data, and reporting deviations outside the jobholder's responsibility.

> Demonstrations of a range of operational actions relating to applying quality control and applying general safety in the workplace.

> Learners will demonstrate an understanding of the Sugar Manufacturing and Refining industry.

> Oral or written questioning regarding the reflexive competencies within the qualification:
If the identifying and solving of problems, team work, organising oneself, the using of applied science, the implication of actions and reactions in the world as a set of related systems are not clear from the observation, a method of oral questioning or a case study should be applied to determine the whole person development and integration of applied knowledge and skills.

> A portfolio of evidence is required to prove the practical, foundational and reflexive competencies of the learner, which may include production and quality statistics.

> 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 in 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, foundational and reflexive competencies.

INTERNATIONAL COMPARABILITY

This qualification has been compared to equivalent qualifications in Scotland and Ireland (Information on these qualifications was sourced during a study tour to the named countries in 2001). It has been found that there is substantial comparison in particular to the Scottish qualifications: "National Certificate/SVQ Foundation (Level 3) in Engineering, Fabrication and Welding" as they are based on the same general 2 principles and skills outcomes.

The learner will have demonstrated an ability to make decisions and consider a range of options after completion of the following unit standards in three specified areas.

ARTICULATION OPTIONS

The qualification has been designed and structured in such a way that it facilitates learner movement to more advanced and specialised disciplines. Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. This qualification forms a basis for entry into a wide cross section of industries in South Africa. This will be achieved through the multi-skilling of the learner.

The qualification also forms the basis for further learning in the field of Sugar Manufacturing Technical Maintenance where learners will engage in more complex maintenance and repair activities.

MODERATION OPTIONS

Anyone assessing a learner against these unit standards must be registered as an assessor with the relevant ETQA.

Any institution offering learning that will enable achievement of these unit standards or will assess these unit standards must be accredited as a provider with the relevant ETQA. Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

Therefore anyone wishing to be assessed against these unit standards may apply to be assessed by any assessment agency, assessor or provider institution, which is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Assessors need experience in the following areas:

- > Interpersonal skills, subject matter and assessment.
- > The assessors needs to be competent in the planning and conducting assessment of learning outcomes and design and develop assessments as described in the relevant unit standards. The subject matter experience must be well developed within the field of technical maintenance in the sugar manufacturing and refining industry.
- > To be in possession of an appropriate qualification at NQF Level 5 or higher.
- > Assessors need to be registered with the relevant ETQA.

NOTES

N/A

UNIT STANDARDS

(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE	LEVEL	CREDITS	STATUS
core	10270 Construct Basic Electronic Circuits	Level 3	4	Reregistered
core	13277 Maintain lubricating systems	Level 3	4	Registered
core	13282 Maintain brakes and clutches	Level 3	6	Registered
Core	10278 Repair three phase AC motor control gear	Level 4	12	Registered
core	12254 Weld workpieces with the shielded metal arc welding process in all positions	Level 4	25	Registered
core	13325 Maintain gearboxes	Level 4	10	Registered
core	13327 Diagnose and repair faults on equipment and machinery during production/operation	Level 4	24	Registered
Elective	13295 Produce components by performing engineering turning operations	Level 3	20	Registered
Elective	13296 Produce components by performing engineering milling operations	Level 3	20	Registered
Elective	12252 Develop and fabricate from complex drawings	Level 4	28	Registered
Elective	13299 Commission assembly machine	Level 4	8	Registered
Elective	13328 Refurbish machines	Level 4	24	Registered
Fundamental	8968 Accommodate audience and context needs in oral communication	Level 3	5	Reregistered
Fundamental	8969 Interpret and use information from texts	Level 3	5	Reregistered
Fundamental	8970 Write texts for a range of communicative contexts	Level 3	5	Reregistered
Fundamental	8973 Use language and communication in occupational learning programmes	Level 3	5	Reregistered
Fundamental	7468 Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6	Reregistered
Fundamental	8974 Engage in sustained oral communication and evaluate spoken texts	Level 4	5	Reregistered
Fundamental	8975 Read analyse and respond to a variety of texts	Level 4	5	Reregistered
Fundamental	8976 Write for a wide range of contexts	Level 4	5	Reregistered
Fundamental	9015 Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6	Reregistered
Fundamental	9016 Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 4	4	Reregistered
Fundamental	12153 Use the writing process to compose texts required in the business environment	Level 4	5	Registered
Fundamental	13224 Monitor the application of safety, health and environmental protection procedures	Level 4	4	Registered