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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

Manufacturing and Assembly Processes

registered by Organising Field 06 – Manufacturing, Engineering and Technology, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at www.saqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the Qualification and Unit Standards should reach SAQA at the address below and **no later than 3 November 2008**. All correspondence should be marked **Standards Setting – SGB for Manufacturing and Assembly Processes** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Food and Beverage Processing: Bread Plant Baking

SAQA QUAL ID		QUALIFICATION TITLE	
64029		National Certificate: Food and Beverage Processing: Bread Plant Baking	
ORIGINATOR		PROVIDER	
SGB Manufacturing and Assembly Processes			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	6 - Manufacturing, Engineering and Technology	Manufacturing and Assembly	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	120	Level 2	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
20657	National Certificate: Food and Beverage Processing: Plant Baking Processing	Level 2	120	Will occur as soon as 64029 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

A learner acquiring this qualification will be able to operate and control primary bread plant processing operations under general supervision in an automated or semi-automated bread plant. This qualification facilitates access to and mobility of career paths within the bread plant baking environment and contributes to the social and contributes to the socio-economic development of the country.

This qualification will allow a learner to advance to the bread plant baking qualifications at NQF Level 3. Certain Unit Standards described in this qualification provide credits that can be carried over to a range of food and beverage qualifications on NQF Level 2. This qualification will enhance the social status and productivity within the baking industry.

Rationale:

This qualification fulfils the workplace-based needs of the bread plant baking industry that is expressed by employers and employees, both now and for the future. This qualification provides the learner with opportunity to be employed in the bread plant baking industry and provides flexibility to pursue different careers in the baking industry with articulation in the food industry. The electives in this qualification provide the learner with the opportunity of a broader based career.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

> It is assumed that learners are already competent in Communication and Mathematical Literacy at NQF Level 1 or ABET Level 4.

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. Learners who have met the requirements of any Unit Standard that forms part of this qualification may apply for recognition of prior learning to the relevant ETQA. Evidence can be presented in a variety of forms, including previous international or local qualifications, reports, and testimonials, mentoring functions performed, portfolios, work records and performance records. As such, evidence should be judged according to the general principles of assessment. The applicant must be assessed against the specific outcomes and assessment criteria for the relevant unit standards. A qualification will be awarded should a learner demonstrate competence in all the exit level outcomes of the qualification.

QUALIFICATION RULES

All the Fundamental Unit Standards (38 credits) are compulsory.

All the Core Unit Standards (58 credits) are compulsory.

A minimum of 24 credits from the Elective Unit Standards including:

> Either 10695 for a fully automated plant bakery.

OR

> 10692 and 10700 for a semi-automatic plant bakery.

OR

> 10693 and 10703 for manually operations in the plant baking system.

The learner has to choose the applicable Elective Unit Standard as defined by the level of automation of the particular bread plant bakery.

A minimum of 120 credits is required to obtain the qualification.

EXIT LEVEL OUTCOMES

Qualifying learners can:

1. Demonstrate a basic knowledge of the bread plant baking environment and the related personal and food safety practices.
2. Perform basic pan handling, cleaning, sanitation of equipments, and mixing of dry ingredient tasks within the bread plant bakery.
3. Operate and control the equipment in a bread plant baking environment according to industry standards.
4. Demonstrate an understanding of fundamental bread plant baking related concepts, principles and procedures.

Critical Cross Field Outcomes:

While performing bread plant baking activities, qualifying learners can:

1. Identify and solve problems in which response displays responsible decisions, using critical and creative thinking, have been made by:
 - > Problem solving during mixing, pan handling, production of bread dough, make up of dough, proving and baking, stacking and storing, slicing and wrapping processes.
 - > Evident in all Exit Level Outcomes.

2. Work effectively with others as a member of a team, group, organisation or community by:
 - > Applying team-work during the complete production cycle.
 - > Evident in all the exit level outcomes.
3. Organize and manage oneself and one's activities responsibly and effectively by:
 - > Properly preparing one's workplace before production begins.
 - > Planning one's activities.
 - > Evident in all the Exit Level Outcomes.
4. Collect, analyse, organise and critically evaluate information by:
 - > Evaluating the quality of the dough and the bread.
 - > Evident in all the exit level outcomes.
5. Communicate effectively by using language skills by:
 - > Keeping supervisors and team members informed of progress and problems.
 - > Evident in all the Exit Level Outcomes.
6. Demonstrate an understanding of the world as a set of related systems by:
 - > Problem solving during mixing, pan handling, production of bread dough, make up of dough, proving and baking, stacking and storing, slicing and wrapping processes.
 - > Evident in all the Exit Level Outcomes.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- > The history, ingredients used and the processes involved in the bread plant bakery are understood.
- > Personal safety practices in food manufacturing environment are understood and demonstrated.
- > Food safety principles are demonstrated in line with industry expectations.

Associated Assessment Criteria for Exit Level Outcome 2:

- > Food manufacturing equipment & surfaces are cleaned and sanitised according to site specific requirements.
- > Pans are prepared, handled stacked and stored according to site specific bread plant operating principles and procedures.
- > Raw ingredients are mixed according to site specific bread plant operating principles and procedures.

Associated Assessment Criteria for Exit Level Outcome 3:

- > Bread dough is produced and made up according to standard bread plant baking principles.
- > Automated plant baking proofer and oven are operated and controlled according to site specific bread plant operating principles and procedures.
- > Slicing and wrapping equipment are operated and controlled according to site specific bread plant operating principles and procedures.

Associated Assessment Criteria for Exit Level Outcome 4:

- > Fundamental knowledge of bread plant baking related concepts and principles is demonstrated and applied according to site specific standard operating procedures.

Integrated Assessment:

The applied competence (practical, foundational and reflexive competencies) of this qualification will be achieved if a candidate is able to operate and control primary bread plant processing operations under general supervision and control in an automated or semi-automated bread plant.

The identification and solving of problems, team work, organising one-self, the using of applied science, the implication of actions and reactions in the world as a set of related systems must be assessed during any combination of practical, foundational and reflexive competencies assessment methods and tools to determine the whole person development and integration of applied knowledge and skills.

Applicable assessment tool(s) to establish foundational, reflexive and embedded knowledge, problem solving and the application of the world as a set of related systems within the manufacturing environment.

A detailed portfolio of evidence is required to prove the practical, applied and foundational competencies of the learner.

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, applied, foundational and reflexive competencies.

INTERNATIONAL COMPARABILITY

Benchmarking was done against the NZQA from New Zealand, NVQ from England, Wales and Northern Ireland, AQF from Australia and the SVQ from Scotland as these countries perform a number of services related to South African plant baking processes.

The NZQA baking related qualifications requires the learner to first complete the generic Level 2 and 3 baking standards and full qualifications before they can gain entry into the specialized field of bread plant baking.

On the NZQA from New Zealand, 4 qualifications exist for Baking namely:

- > National Certificate in Food Production - Baking (Level 1).
- > National Certificate in Food Production - Baking (Level 2).
- > National Certificate in Food Production - Baking (Level 3).
- > National Certificate in Food Production - Baking (Craft Baking Level 4).
- > National Certificate in Food Production - Baking (Plant Baking Level 4).

The Levels 1, 2 and 3 qualifications cover all the competencies expected from a learner in both the craft baking and the bread baking plant environments.

South Africa's bread plant bakery industry caters for learners entering on a Level 2 within the specific field of bread plant baking. It is for this reason that the South African Level 2 qualifications incorporate a number of Level 1 and 2 unit standards which address the basic knowledge and skills required by for example the pan handler which the New Zealand learner would be exposed to in the generic standards included in the Level 2 and 3 qualifications.

The qualification requires the learner to be awarded 70 credits. There are compulsory unit standards that comprise of Occupational Health and Safety, communication skills, reading and

writing, mathematics, personal presentation and knowledge of baking legislation at Level 1 and 2 a total of 15 credits. A minimum of 30 credits must come from the Baking unit standards at Level 2 and above. The remaining 30 credits may either come from the baking unit standards and/or the subfields of computing and information technology engineering technology, health humanities, manufacturing science and service sector.

The New Zealand qualification requires the learner to first do Level 1, 2 and 3 in craft bread making and flour confectionery. At Level 4 there are two qualifications (1) craft baking and (2) plant baking. At this stage the learner can decide which pathway to take.

The Australian qualification framework:

The Australian Qualification Framework contains an equivalent one year qualification in:

- > Certificate 2 in food processing (Retail baking - cake and pastry).
- > Certificate 2 in food processing (Retail baking - bread).
- > Certificate 2 in food processing (Retail baking - combined).

These qualifications are packaged in two ways either what is known as 'Single level programmes' where it is assumed that a person on entry has completed the lower level qualification or 'Composite level programs' where the person has not completed a lower level qualification and reflect the minimum requirement this person would be expected to complete any pre-requisites as additional mandatory units in order to complete the qualification.

The certificates are offered as either individual specialities in bread or confectionery or a combination of the two.

The combination qualification is aimed at both the bread and flour confectionery bakery and includes units regarding occupational health and safety and food safety the processing of standard breads, sponges, cakes, cookies, choux paste and meringues.

The South African Plant Bread Baking qualification is unique in that it allows the learner opportunity to enter the plant baking environment at a lower level, e.g. Level 1.

The Learner can progress through Levels 1, 2 and 3 and can articulate at Level 4.

SVQ from Scotland:

The SVQ from Scotland equivalent qualification are awarded by the Scottish Association of Master Baker and Scottish Qualification Authority.

- > Scottish Vocational Qualification in bakery (Dough Production) Level 2.
- > Scottish Vocational Qualification in bakery (Flour Confectionery Production) Level 2.

The qualifications are split into Mandatory Units which are the same in both of the above qualifications and cover aspects regarding health and safety, personal and work place hygiene, working with others, quality control of products, problem solving and organizing own activities regarding and production schedules all of which are aspects that are covered in the South African Level 2 qualification.

Learners must then choose 6 units from the optional units, these cover a far broader spectrum of disciplines from craft, bread baking, plant bread baking, pastry manufacturing, craft confectionery baking, plant confectionery baking and cake decorating.

The South African qualification relates to the following Level 2 plant baking unit standards:

- > Stack and store bread manually in a bread plant bakery.
- > Manage and handle pan operations manually in a bread plant bakery.
- > Apply personal safety practices in a food manufacturing environment.
- > Clean and sanitise food manufacturing equipment and surfaces manually.
- > Apply knowledge of the effect of micro-organisms on personal health, hygiene and food safety.
- > Pre-batch food raw material.
- > Make-up of dough in automated plant bread bakery.
- > Demonstrate knowledge of plant baking terminology, equipment and systems.
- > Control the cooling process of baked bread manually in a bread plant bakery.
- > Operate and control and automated bread packaging machine.

The South African qualification relates to the following Level 3 plant baking unit standards:

- > Demonstrate an understanding of occupational health, safety and environmental legislation relevant to the food or beverage environment.
- > Demonstrate an understanding of food or beverage safety practices and procedures in a food or beverage manufacturing environment.
- > Monitor and control quality assurance practices in a food or beverage manufacturing environment.
- > Apply microbiological principles in a food or beverage environment.
- > Demonstrate an understanding of introductory business principles.
- > Demonstrate an understanding of heating and cooling procedures.
- > Demonstrate an understanding of the origin, purpose, function of raw materials used in craft fermented products and plant bread.
- > Produce bread dough in an automated plant bakery.
- > Operate and control an automated plant baking proofer and oven.

Conclusion:

The South African Plant Baking qualifications are more comprehensive and cover a wider field than comparable international qualifications.

ARTICULATION OPTIONS

This Qualification articulates horizontally with the following Qualifications:

- > ID 50307 National Certificate: Bread and Flour Confectionery Baking, NQF Level 2.
- > ID 58953 National Certificate: Biscuit Manufacturing, NQF Level 2.

Vertical articulation is possible with the following Qualifications:

- > ID 20658 National Certificate: Food and Beverage Processing: Plant Baking Processing, NQF Level 3.

MODERATION OPTIONS

- > Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with the relevant ETQA.
- > Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.
- > Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQAs policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQAs (including professional bodies); and in terms of the moderation guideline detailed immediately below.

> Moderation must include both internal and external moderation of assessments at exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards, exit level outcomes as well as the integrated competence described in the qualification.

> Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that 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 assessor needs to be competent in the planning and conducting of assessment of learning outcomes and in the design and development of assessments as described in the unit standard Plan and conduct assessment of learning outcomes NQF Level 5. Subject matter experience must be well developed within the field of flour confectionery and craft bread baking. The assessor must have completed:

> A similar qualification with a minimum of 6-12 months field experience after he/she has completed the qualification.

OR

> National Certificate in Plant Bread Processing NQF Level 3.

OR

> Food science and technology qualification on NQF Level 5 or higher.

> The subject matter experience of the assessor can be established by recognition of prior learning.

> Assessors need to be registered with the Food and Beverage Education and Training Quality Assurance Body.

NOTES

This qualification replaces qualification 20657, "National Certificate: Food and Beverage Processing: Plant Baking Processing", Level 2, 120 credits.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119463	Access and use information from texts	Level 2	5
Fundamental	9009	Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	3
Fundamental	120402	Demonstrate an understanding of introductory principles of chemistry and physics	Level 2	5
Fundamental	9008	Identify, describe, compare, classify, explore shape and motion in 2-and 3-dimensional shapes in different contexts	Level 2	3
Fundamental	119454	Maintain and adapt oral/signed communication	Level 2	5
Fundamental	119460	Use language and communication in occupational learning programmes	Level 2	5
Fundamental	7469	Use mathematics to investigate and monitor the financial aspects of personal and community life	Level 2	2
Fundamental	9007	Work with a range of patterns and functions and solve problems	Level 2	5
Fundamental	119456	Write/present for a defined context	Level 2	5
Core	120410	Clean and sanitise food manufacturing equipment and surfaces manually	Level 1	4
Core	259379	Demonstrate knowledge of bread plant baking history, ingredients and processes	Level 1	5
Core	120403	Apply good manufacturing practices as part of a food safety system	Level 2	4

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	120416	Apply personal safety practices in a food or sensitive consumer product environment	Level 2	5
Core	259397	Make-up of dough in an automated bread plant bakery	Level 2	10
Core	259381	Operate and control a bread packaging machine	Level 2	6
Core	259377	Operate and control an automated plant baking prover and oven	Level 2	13
Core	120417	Understand the control of pests and waste materials as part of a food safety system	Level 2	3
Core	259382	Produce bread dough in an automated bread plant	Level 3	8
Elective	13998	Demonstrate an understanding of the principles of supply and demand, and the concept: production	Level 1	2
Elective	116932	Operate a personal computer system	Level 1	3
Elective	15091	Plan to manage one's time	Level 1	3
Elective	259378	Prepare and handle pans for production in a semi-automated bread plant bakery	Level 1	4
Elective	259380	Stack and store bread in a semi-automated bread plant bakery	Level 1	4
Elective	14096	Understand and apply technological knowledge and skills in Processes	Level 1	2
Elective	117902	Use generic functions in a Graphical User Interface (GUI)-environment	Level 1	4
Elective	120238	Collate and shrink-wrap packaged products using automated wrapping equipment	Level 2	6
Elective	10703	Control the cooling process of baked bread manually in a bread plant bakery	Level 2	8
Elective	8766	Mix or blend food raw materials for processing using automated equipment	Level 2	4
Elective	10700	Operate and control an automated bread plant cooler	Level 2	4
Elective	242781	Pack manually	Level 2	2
Elective	10695	Prepare and handle pans for production	Level 2	4
Elective	8804	Store and route food raw materials and products	Level 3	8

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None