No. 924   **5 October 2007**

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

Pulp and Paper

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 5 November 2007*. All correspondence should be marked **Standards Setting – Pulp and Paper** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:
National Certificate: Pulp and Paper Operations

SAQA QUAL ID	QUALIFICATION TITLE		
59038	National Certificate: Pulp and Paper Operations		
ORIGINATOR		**PROVIDER**	
SGB Pulp and Paper			
QUALIFICATION TYPE	**FIELD**	**SUBFIELD**	
National Certificate	6 - Manufacturing, Engineering and Technology	Manufacturing and Assembly	
ABET BAND	**MINIMUM CREDITS**	**NQF LEVEL**	**QUAL CLASS**
Undefined	130	Level 2	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

This qualification builds onto the GETC: Chemical Operations. This qualification builds onto the largely theoretical foundation laid at NQF Level 1. The qualification allows the learner a choice of elective specialisation areas associated with the different operational areas of a pulp and paper production facility. This qualification will supply the learner with the competencies needed to take responsibility for a significant process in the pulp and paper manufacturing industry. It also provides the basis upon which further related learning and career development can take place.

Qualifying learners will:

• Demonstrate understanding of the Pulp and Paper Industry.
• Apply safety, health and environmental principles and procedures in the workplace.
• Monitor and control pulp and paper process operations in a process environment.
• Maintain quality in a processing environment.

Social development and economic transformation are enhanced through efficient task performance, and career development and personal job satisfaction of processing personnel are facilitated through the learning process used to achieve the competency specified.

This qualification will contribute to the full development of the learner within the pulp and paper industry by providing recognition, further mobility and transportability within the field. The skills, knowledge and understanding demonstrated within this qualification are essential for social and economic transformation and contribute to the progression and economic growth within the pulp and paper processing and maintenance fraternity.

Rationale:

This qualification replaces the National Certificate: Pulp and Paper Manufacturing NQF Level 2 (ID 35941).

This qualification is the second in a learning pathway for people working in the pulp and paper processing industry who need to progress beyond NQF Level 2 in Pulp and Paper Operations. The NQF Level 2, 3, and 4 qualifications in Pulp and Paper Operations are aimed at the learner

who wants to gain competence in the skills needed for pulp and paper manufacturing operations in a pulp and paper mill.

The N.C. Pulp and Paper Operations allows the learner a choice of specialisation areas in the pulp and paper manufacturing industry. This competence provides the foundation needed to progress in the pulp and paper industry. Through the employment of competent personnel, employers and the industry have confidence that this critical work in the industry is efficiently carried out.

Typical learners are operating personnel working in a chemical or a pulp and paper processing plant. The pulp and paper industry is well established in South Africa and its success is dependant upon the efficient production of products. Achievement of this objective is largely dependant upon the competence, recognised by this qualification, of the people who operate processing equipment. An adequate number of people with these skills are needed to ensure that the pulp and paper production units in South Africa operate productively.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
This qualification has been designed as the second in a series of four qualifications for pulp and paper operations in the pulp and paper processing and related manufacturing industry.

It is assumed that learners are already competent in:

• GET Certificate: Chemical Operations or equivalent.
• Communication, mathematical literacy, natural science and technology principles at NQF Level 1/ABET Level 4.

Recognition of Prior Learning:

Recognition of prior learning must be carried out in accordance with the policy and rules specified and used by the ETQA responsible for evaluation of people seeking RPL for a part of the whole qualification.

Access to the Qualification:

Access is open to anyone with access to learning opportunities and work experience on an appropriate selection of systems. The learning assumed to be in place is essential to the learning specified in this qualification. If the learner is not yet competent in this regard the shortfalls must be addressed prior to commencing with learning specified in this qualification. This is necessary to ensure the safety of the learner, co-workers, the work process and the environment.

Access for learners with disabilities is dependant on the:

• Type and severity of the disability.
• Nature of the operational processes and requirements of the equipment.

QUALIFICATION RULES
In the compulsory Fundamental Component of the qualification, a learner must demonstrate his/her competence in the 20 credits in the field of Communication plus 16 credits in the field of Mathematical Literacy.

The unit standards in the compulsory Core Component of the qualification reflect the skills and competencies needed for building expertise in pulp and paper operations. In the Core Component, the learner must demonstrate his/her competence in the total of 78 credits.

The Elective component is made up of the following:

Pulp and paper specific electives of which at least one Unit standard must be selected:

Pulp and paper electives: Select at least 1 Unit standard:

NRLD ID, Level, Credits:

- ID 246616: Receive and store logs in a woodyard, Level 2, 4 Credits.
- ID 246613: Handle and store bark for further processing, Level 2, 3 Credits.
- ID 246620: Prepare and supply bagasse, 13689 (Rev.), Level 2, 4 Credits.
- ID 246619: Classify secondary fibre as per the South African grade definition, Level 2, 4 Credits.
- ID 246624: Produce bales of secondary fibre using a baling machine, Level 2, 3 Credits.
- ID 246618: Produce cut cores for the pulp and paper industry, Level 2, 3 Credits.
- ID 246608: Produce embossed paper, board or tissue, Level 2, 4 Credits.
- ID 244615: Produce laminated paper or board, Level 2, 8 Credits.
- ID 246610: Produce wrapped finished paper, board and tissue products, Level 2, 4 Credits.
- ID 110040: Manufacture cores for the pulp and paper industry, Level 2, 8 Credits.

Electives: The qualification is completed by selecting sufficient credits from this section to make up 130 credits:

NRLD ID, Level, Credits:

- ID 9965: Render basic first aid, Level 2, 3 Credits.
- ID 244071: Apply sampling theory and practice, Level 2, 5 Credits.
- ID 244073: Receive, handle and store hazardous chemicals safely, Level 2, 5 Credits.
- ID 110075: Apply basic fire fighting, Level 1, 3 Credits.
- ID 115188: Apply environmental protection procedures, Level 2, 4 Credits.
- ID 114639: Control waste or effluent water in a manufacturing environment, Level 2, 4 Credits.
- ID 116256: Sling and communicate during crane operations, Level 2, 4 Credits.
- ID 244365: Lift and move material and equipment by means of a forklift, Level 2, 3 Credits.
- ID 116235: Operate a pendant controlled overhead crane, Level 2, 5 Credits.
- ID 244605: Participate effectively in a team or group, Level 2, 2 Credits.
- ID 9268: Manage basic personal finance, Level 2, 6 Credits.
- ID 116935: Enhance, edit and organise electronic messages, Level 2, 2 Credits.
- ID 116937: Create and edit spreadsheets, Level 2, 4 Credits.
- ID 116931: Use a web-browser to search the Internet, Level 2, 4 Credits.
- ID 117924: Use a word processor to format documents, Level 2, 5 Credits.

EXIT LEVEL OUTCOMES
1. Demonstrate understanding of the Pulp and Paper Industry.

2. Apply safety, health and environmental principles and procedures in the workplace.

3. Monitor and control pulp and paper process operations in a process environment.

4. Maintain quality in a pulp and paper processing environment.

Critical Cross-Field Outcomes:

Each Critical Cross-Field Outcome was considered in terms of its applicability to each of the specific outcomes for each unit standard. Where it was found to be applicable, the nature of the skills being developed was specified by the working group and captured in the standard.

Critical Cross-Field Outcomes are assessed per unit standards and are part of all Exit Level Outcomes:

Critical Cross-Field Outcomes have been addressed by the exit level outcomes as follows:

Critical Cross-Field Outcomes, Evident in Exit Level Outcomes:

While performing integrated pulp and paper process operations, qualifying learners can:

Identify and solve problems in which response displays that responsible decisions, using critical and creative thinking, have been made by:

• Responding to emergencies in a processing environment, Evident in Exit Level Outcome 2.
• Monitoring and controlling quality assurance practices, Evident in Exit Level Outcome 2, 3 and 4.
• Applying operating procedures, Evident in Exit Level Outcome 3 and 4.
• Solving operating problems using relevant technologies, Evident in Exit Level Outcome 3 and 4.

Work effectively with others as a member of a team, group, organisation or community by:

• Working in a coordinated team during processing operations, Evident in Exit Level Outcome 3.
• Coordinating one's work with that of others in the direct surrounding area, internal and external operations, Evident in Exit Level Outcome 1, 2, 3 and 4.

Organise and manage oneself and one's activities responsibly and effectively by:

• Using operating instructions to control process plant conditions, Evident in Exit Level Outcome 3.
• Implementing the steps to solve operating problems in a process plant, Evident in Exit Level Outcome 3 and 4.
• Applying quality procedures in a process environment to maintain product quality, Evident in Exit Level Outcome 3 and 4.

Collect, analyse, organise and critically evaluate information by:

• Monitoring operational parameters, Evident in Exit Level Outcome 3 and 4.
• Collating and sorting product quality data, Evident in Exit Level Outcome 3 and 4.
• Appreciating and understanding the Pulp and Paper Industry, Evident in Exit Level Outcome 1, 3, and 4.
• Managing records, reports and stock, Evident in Exit Level Outcome 2, 3 and 4.

Communicate effectively by using mathematical and/or language skills in the modes of oral and/or written presentations by:

• Recording and interpreting instrument readings, Evident in Exit Level Outcome 3 and 4.
• Preparing and presenting reports, Evident in Exit Level Outcome 3 and 4.

Use science and technology effectively and critically, showing responsibility towards the environment and health of others by:

• Working according to health and safety regulations, Evident in Exit Level Outcome 2, 3 and 4.
• Controlling technologically advanced production equipment according to operating procedures, Evident in Exit Level Outcome 2, 3, and 4.

Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation by:

• Describing technologies and equipment used in the production of pulp, paper, tissue and board, Evident in Exit Level Outcome 1.
• Explaining the interdependence of the different specialisation areas in the pulp and paper environment, Evident in Exit Level Outcome 1.
• Adjusting equipment and machinery while taking cognisance of the downstream impact, 3 and 4.

Contribute to the full personal development of each learner and the social and economic development of the society at large by:

• Maintaining and applying safety practices in the production environment, Evident in Exit Level Outcome 2, 3 and 4.
• Maintaining and applying quality practices in the production environment, Evident in Exit Level Outcome 3 and 4.
• Performing core operating functions, Evident in Exit Level Outcome 3.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment criteria for Exit Level outcome 1:

• Technologies and equipment used in the production of pulp, paper, tissue and board are described as applicable in own plant and the total pulp and paper industry.
• The role and impact of each of the specialisation areas in the pulp and paper industry are appreciated and explained in accordance with specified requirements.
• The interdependence of the different specialisation areas in the pulp and paper environment is explained in accordance with specified requirements.

Associated Assessment criteria for Exit Level outcome 2:

• General safety, health and environmental protection procedures are applied as applicable to the pulp and paper industry.
• Emergencies in a process environment are responded to in accordance with specified requirements.
• The application of the work permit system is explained as applicable to the pulp and paper industry.

Associated Assessment criteria for Exit Level outcome 3:

• The principles of chemistry and physics are explained in relation to a processing environment.
• Operating instructions are used to control process plant conditions.
• Statistical process control is performed in accordance with specifications.
• Plant is monitored in a process environment in accordance with specified requirements.
• Operating problems are solved using relevant technologies during process operations.
• The principles of heat transfer equipment and liquid-solid and solid-solid separation processes are explained as applicable to pulp and paper process operations.

Associated Assessment criteria for Exit Level outcome 4:

• The quality of products is maintained in a production environment.
• Statistical process control is performed in accordance with specifications.

• Operating problems are solved using relevant technologies to maintain product quality.

Integrated Assessment:

The applied competence (practical, foundational and reflexive competencies) of this qualification will be achieved if a candidate is able to achieve all the exit level outcomes of this qualification.

Appropriate methods and tools must be used to assess practical, foundational and reflexive competence of the learner in all the exit level outcomes listed above, as well as to determine a learner's ability to solve problems, work in a team, organise him/herself, use applied science, and understand the implications of actions and reactions in the world as a set of related systems. Such an assessment process will determine development of the whole person, and the integration of applied knowledge and skills.

Assessors should develop, conduct, and ensure integration of, assessment by making use of a range of formative and summative assessment methods against the unit standards that make up the qualification. Combinations of applied, foundational and reflective competencies, including Critical Cross-field Outcomes, should be assessed wherever possible.

Moderators should ensure that assessment is valid, consistent and integrated into work or learning, and that there is sufficient and authenticated evidence of learner competence against the whole qualification.

INTERNATIONAL COMPARABILITY
An extensive international comparability comparison was made including Australia, New Zealand, Britain, Scotland, Canada, the USA, Sweden, Finland, Germany and relevant African countries.

USA, Canada, Scandinavia and Germany:

Despite the fact that the pulp and paper industry is very well-developed in all the countries in the extreme northern areas of the world, most operators are still trained on the job with some short courses offered by equipment suppliers.

In the USA staff is mostly trained on the specific machines they operate at the time of establishing a new mill. TAPPI (a technical association for the pulp, paper and converting industry) offers a wide range of short, technical courses for operating staff. A number of pulp and paper related university degrees are also offered in the USA.

Canada has the largest pulp operations in the world, but has no formal national qualifications registered. As is the international trend, most operator training is done on the job. However, a number of colleges offer a Pulp and Paper Operations Certificate (post school) training course. The courses generally train the learners from 7 to 9 months in general pulp and paper mill operations for entry level machine and utility operators. As in the USA, pulp and paper related degrees are offered by local universities.

The Scandinavian pulp and paper industry (including Sweden, Norway and Finland) follows the same trend. Most training is done on the job, with no vocational training leading to a qualification. As in the USA there are a variety of pulp and paper degrees on offer at universities in all three these countries.

Three year Paper Technology Diplomas are offered by several German Universities. Although these diplomas have a strong workplace emphasis, they are comparable to South African diplomas rather than vocational training qualifications. Subject content is similar to that contained in the technical part of the South African qualification, namely: industry background,

machine operations and components, maintenance functions, computer skills with a technical project to complete the diploma.

Africa:

African countries with manufacturing facilities (including SADC countries) were searched for applicable qualifications or training programmes, but no relevant qualifications are offered in any of these countries. Similar to international companies, the majority of training is provided by equipment suppliers with three to five day short training courses. The only pulp and paper facility in the SADC outside South Africa is in Swaziland-learners from this facility will be trained according to the South African qualification.

New Zealand:

A comparison with the NZQA was included, because it is an educational structure comparable to the NQF. An internet search of the NZQA revealed three registered qualifications (National Certificates) ranging from Levels 2 to 4 in Pulp and Paper Manufacturing.

The New Zealand "National Certificate in Pulp and Paper Manufacturing (Level 2)" is an introduction to pulp and paper operations containing a compulsory core component consisting of units standards in communication, teamwork, employment relations, health, safety, quality, environmental protection and manufacturing process knowledge. The learner has to choose 10 credits from Elective Group A which contains unit standards dealing with specific pulp and paper industry skills and 19 credits from Elective Group B which is made up of general unit standards such as workplace safety, distribution, business administration and computer skills.

The compulsory core sections of the National Certificates in Pulp and Paper Manufacturing Levels 3 and 4 are common so that people wishing to progress from the Level 3 qualification to the Level 4 qualification have a common grounding in the principles of pulp and paper manufacturing. This core component consist of unit standards with a technical focus such as pumps and valves, chemistry and physics and the fundamentals of process control systems make up.

For competence in the "National Certificate in Pulp and Paper Manufacturing (Level 3)" the learner needs to prove competence in the 28 credits core unit standards, 35 credits from pulp and paper specialisation areas and 27 general electives. The general elective sections of both Level 3 and 4 qualifications also provide recognition for a range of manufacturing and generic industry skills; and cover areas such as workplace safety, distribution, business administration, and communications.

Just as in the South African NQF Level 4 qualification, learners completing the "National Certificate in Pulp and Paper Manufacturing (Level 4)" specialise in either pulpmaking, papermaking or chemical recovery. The learner needs to prove competence in a total of 120 credits which consist of 28 credits core unit standards and 35 credits specialisation electives. If all 28 credits for the core were obtained in the Level 3 qualification these credits are reflected here again.

The South African qualifications compare very well with the New Zealand qualifications, but the fact that the South African qualifications have a fundamental component of communication and mathematical unit standards is advantageous for the South African learner.

Australia:

An internet search of the AQF revealed that the following four qualifications are registered on the AQF:

- "Certificate I in Pulp and Paper Manufacturing".
- "Certificate II in Pulp and Paper Manufacturing".
- "Certificate III in Pulp and Paper Manufacturing".
- "Certificate IV in Pulp and Paper Manufacturing".

A comparison with these qualifications was included because the AQF is an educational structure comparable to the NQF.

The new Australian "Certificate I in Pulp and Paper Manufacturing" contains only a compulsory core consisting of five units in communication, safety, quality and the use of hand held tools which all have to be achieved. This qualification is not compulsory for entry to the pulp and paper qualifications as the majority of trainees enter the industry at Certificate II level.

The Level 2 to 4 qualifications all have a compulsory core consisting mainly of communication, safety and quality. The Level 3 and 4 qualifications also include a compulsory unit on problem solving.

From Level 2 onwards the learner has to choose specialisation units from the following range of specialisation areas: Primary resources, pulping operations, chemical recovery and waste paper handling, waste paper operations, stock preparation, wet end operations, dry end operations, paper coating and finishing and converting.

The Level 2 and 3 qualifications are completed with a choice of two elective units. The Level 2 and 3 elective component consist of a range of safety, emergencies, first aid, training, cranage and specialist technical skills Unit Standards.

The new Australian "Certificate IV in Pulp and Paper Manufacturing" has a compulsory core consisting of communication, productivity calculations, OHS policy and procedures, quality and advanced problem solving. This learner already specialises in one specific area and has to make a choice of one specialisation unit from the following range of specialisation areas: resources, pulping operations, chemical recovery and paper manufacture. The qualification is completed with a choice of three elective units ranging from leadership, workplace relationships, customer care, training and assessment, to cranage and sampling units.

The South African qualification includes similar core qualification structures and progressions from NQF Level 2 to NQF Level 4 and also uses separate qualifications to address pulp and paper production and pulp and paper hygiene products manufacturing. The main difference is that the Australian qualification requires of the learner to choose a specialisation area in Level 2, whereas the South African qualification offers the learner the opportunity to gain an overview of all the pulp and paper processes on Level 2 before choosing a specialisation area in Level 3.

Britain:

A comparison with the British qualification was included, because the British pulp and paper industry is very well developed and the NVQ is an educational structure comparable to the NQF. An internet search of the British NVQ and the Scottish SVQ revealed the following Level 2 and 3 qualifications:

- The PAA\VQSET Level 2 Certificate in Paper Technology.
- The PAA\VQSET Level 3 Certificate in Paper Technology.

The South African NQF Level 2 qualification compares very well with the British Level 2 qualification which is made up of six compulsory units in Health and Safety, quality, raw materials, papermaking processes, plant services and process control. The main difference is that the British qualifications contain no fundamental communication and mathematical units.

The PAA\VQSET Level 3 Certificate in Paper Technology has a compulsory core containing units on Health and Safety, quality, teamwork and problem solving. The learner has to choose between Group B units and Group C units to complete the qualification. Group B contains only papermaking units, whereas Group C contains general pulp and paper operations units such as chemical recovery, coating and finishing operations.

Being the highest pulp and paper qualification registered on the QCA, this Level 3 qualification compares with the content of the South African NQF Level 3 and 4 qualifications, but it is clear that the South African qualification provides the learner with more theoretical knowledge and practical competence. The South African NQF Level 4 qualification also provides the learner with the opportunity to progress to tertiary education.

Summary:

In conclusion, a comparison with similar international qualifications indicates that the focus is the same as those of the benchmark qualifications. Both local and international qualifications place considerable emphasis on safety, quality and problem solving skills and allow the learner to choose from a range of specialisation areas in the paper industry.

The Pulp and Paper Operations qualifications compare well with the best international qualifications and training programmes offered. The compulsory fundamental and technical content incorporated in the qualification will serve to support qualifying learners to make better informed, autonomous decisions within a more compact timeframe than most international learners and will increase transportability of the qualification considerably.

ARTICULATION OPTIONS
This qualification follows a vertical progression from the introductory NQF Level 1, Chemical Operations Qualification and will enable the qualifying learner to progress to a technologist role through the National Certificate in Pulp and Paper Technology, NQF Level 5. In addition, each of these qualifications has elective specialisation areas associated with the different operational areas of a pulp and paper production facility.

Vertical articulation can occur within the pulp and paper industry to the reviewed draft NQF Level 3 National Certificate: Pulp and Paper Operations.

Vertical articulation into related industries can occur with the following registered NQF Level 3 qualifications:

• Process Plant Operationn, NQF Level 3.
• ID 58537: National Certificate Chemical Operations, NQF Level 3.
• National Certificate Pulp and paper hygiene products manufacturing, NQF Level 3.

The expertise obtained through these qualifications will also enable qualifying learners to progress horizontally to obtain other process related qualifications within the pulp and paper, chemical and proposed secondary agriculture industries.

Horizontal articulation can occur with the following registered NQF Level 2 qualifications:

• ID 58515: Chemical Operations, NQF Level 2.
• National Certificate: Pulp and paper hygiene products manufacturing, NQF Level 2.

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 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.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

In order to assess this qualification, the assessor needs:

• Assessors to meet the requirements of the generic assessor standards.
• Competence against the unit standard "Conduct outcomes-based assessments".
• Detailed documentary proof of educational qualification, practical training undergone, and/or experience gained at an appropriate level in the work concerning pulp and paper operations. This must meet the relevant ETQA policies and guidelines. The subject matter expertise of the assessor can be established through the recognition of prior learning.
• Registration with, or recognition by, the relevant ETQA as specified through an appropriate memorandum of understanding.

NOTES

This qualification replaces qualification 35941, "National Certificate: Pulp and paper Manufacturing", Level 2, 141 credits.

Range statements:

This qualification addresses the knowledge and competencies required by learners in the pulp and paper industries.

Knowledge relating to the pulp and paper processing industries includes process specific technology, communication, mathematics, applied science, and SHEQ.

This qualification may be applicable to other processing operations. This is subject to its acceptance by appropriate subject matter experts.

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	7480	Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3
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

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	244076	Apply elementary statistical process control principles	Level 2	6
Core	116520	Apply safety, health and environmental principles and procedures in a workplace	Level 2	2
Core	244080	Apply standard operating procedures in a process environment	Level 2	10
Core	246612	Demonstrate an understanding of quality principles used in the manufacturing of pulp and paper products	Level 2	4
Core	244078	Demonstrate understanding of a work permit system	Level 2	3
Core	244072	Demonstrate understanding of heat transfer equipment	Level 2	10
Core	244074	Demonstrate understanding of liquid-solid and solid-solid separation processes	Level 2	10
Core	246621	Demonstrate understanding of pulp and paper manufacturing processes	Level 2	10
Core	244075	Maintain the quality of products in a production environment	Level 2	5
Core	244082	Monitor plant and equipment in a process environment	Level 2	10
Core	244079	Respond to emergencies in a process environment	Level 2	3
Core	244083	Solve operating problems using relevant technologies	Level 2	5
Elective	110075	Apply basic fire fighting techniques	Level 1	3
Elective	115188	Apply environmental protection procedures	Level 2	4
Elective	244071	Apply sampling theory and practice	Level 2	5
Elective	246619	Classify secondary fibre as per the South African Grade Definition	Level 2	4
Elective	114639	Control waste or effluent water in a manufacturing environment	Level 2	4
Elective	244605	Demonstrate ability to participate effectively in a team or group	Level 2	2
Elective	116935	Enhance, edit and organise electronic messages using a Graphical User Interface (GUI)-based messaging application	Level 2	2
Elective	246613	Handle and store bark for further processing	Level 2	3
Elective	244365	Lift and move material and equipment by means of a forklift	Level 2	3
Elective	9268	Manage basic personal finance	Level 2	6
Elective	110040	Manufacture cores for the pulp and paper industry	Level 2	8
Elective	116235	Operate a pendant controlled overhead crane	Level 2	5
Elective	246620	Prepare and supply bagasse	Level 2	4
Elective	246624	Produce bales of secondary fibre using a baling machine	Level 2	3
Elective	246618	Produce cut cores for the pulp and paper industry	Level 2	3
Elective	246608	Produce embossed paper, board or tissue	Level 2	4
Elective	246615	Produce laminated paper or board	Level 2	8
Elective	246610	Produce wrapped finished paper, board or tissue products	Level 2	4
Elective	246616	Receive and store logs in a woodyard	Level 2	4
Elective	244073	Receive, handle and store hazardous chemicals safely	Level 2	5
Elective	9965	Render basic first aid	Level 2	3
Elective	116256	Sling and communicate during crane operations	Level 2	4
Elective	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	4
Elective	116931	Use a Graphical User Interface (GUI)-based web-browser to search the Internet	Level 2	4
Elective	117924	Use a Graphical User Interface (GUI)-based word processor to format documents	Level 2	5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Produce embossed paper, board or tissue

SAQA US ID	UNIT STANDARD TITLE		
246608	Produce embossed paper, board or tissue		
ORIGINATOR		PROVIDER	
SGB Pulp and Paper			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1
Explain the fundamental principles of the production of embossed paper, board or tissue.

SPECIFIC OUTCOME 2
Explain the quality requirements of raw materials received.

SPECIFIC OUTCOME 3
Assess raw materials quality in accordance with workplace specifications.

SPECIFIC OUTCOME 4
Monitor and control the paper, board or tissue embossing process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Produce wrapped finished paper, board or tissue products

SAQA US ID	UNIT STANDARD TITLE			
246610	Produce wrapped finished paper, board or tissue products			
ORIGINATOR		PROVIDER		
SGB Pulp and Paper				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 2		4

SPECIFIC OUTCOME 1
Explain the fundamental principles of the production of wrapped paper, board or tissue.

SPECIFIC OUTCOME 2
Explain the quality requirements of raw materials received.

SPECIFIC OUTCOME 3
Assess raw materials quality in accordance with workplace specifications.

SPECIFIC OUTCOME 4
Monitor and control the paper, board or tissue wrapping process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of quality principles used in the manufacturing of pulp and paper products

SAQA US ID	UNIT STANDARD TITLE		
246612	Demonstrate an understanding of quality principles used in the manufacturing of pulp and paper products		
ORIGINATOR		PROVIDER	
SGB Pulp and Paper			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1
Define the terms quality, quality assurance, quality control and quality management.

SPECIFIC OUTCOME 2
Explain the requirements and processes used to ensure effective quality control.

SPECIFIC OUTCOME 3
Describe the factors that affect product quality.

SPECIFIC OUTCOME 4
Demonstrate an understanding of the consequences of poor quality control.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Handle and store bark for further processing

SAQA US ID	*UNIT STANDARD TITLE*		
246613	Handle and store bark for further processing		
ORIGINATOR		*PROVIDER*	
SGB Pulp and Paper			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 2	3

SPECIFIC OUTCOME 1
Explain the fundamental principles of the handling and storage of bark.

SPECIFIC OUTCOME 2
Explain the quality requirements of the bark received.

SPECIFIC OUTCOME 3
Assess the quality of bark received.

SPECIFIC OUTCOME 4
Monitor and control the handling and storage of bark.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Produce laminated paper or board

SAQA US ID	UNIT STANDARD TITLE			
246615	Produce laminated paper or board			
ORIGINATOR		PROVIDER		
SGB Pulp and Paper				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 2		8

SPECIFIC OUTCOME 1
Explain the fundamental principles of the production of laminated paper or board.

SPECIFIC OUTCOME 2
Explain the quality requirements of raw materials received.

SPECIFIC OUTCOME 3
Assess raw materials quality in accordance with workplace specifications.

SPECIFIC OUTCOME 4
Monitor and control the paper or board laminating process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Receive and store logs in a woodyard

SAQA US ID	UNIT STANDARD TITLE		
246616	Receive and store logs in a woodyard		
ORIGINATOR		PROVIDER	
SGB Pulp and Paper			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1
Explain the fundamental principles of log receipt and storage.

SPECIFIC OUTCOME 2
Explain the quality requirements of the logs received.

SPECIFIC OUTCOME 3
Assess the quality of logs received.

SPECIFIC OUTCOME 4
Monitor and control log receiving and storage.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Produce cut cores for the pulp and paper industry

SAQA US ID	UNIT STANDARD TITLE		
246618	Produce cut cores for the pulp and paper industry		
ORIGINATOR		PROVIDER	
SGB Pulp and Paper			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

SPECIFIC OUTCOME 1
Explain the fundamental principles of the manufacturing of cores.

SPECIFIC OUTCOME 2
Explain the quality requirements of raw materials received.

SPECIFIC OUTCOME 3
Assess raw materials quality in accordance with workplace specifications.

SPECIFIC OUTCOME 4
Monitor and control the core manufacturing process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Classify secondary fibre as per the South African Grade Definition

SAQA US ID	UNIT STANDARD TITLE		
246619	Classify secondary fibre as per the South African Grade Definition		
ORIGINATOR		PROVIDER	
SGB Pulp and Paper			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1
Explain fundamental secondary fibre classification principles.

SPECIFIC OUTCOME 2
Classify secondary fibre according to the South African Standard Grade Definition.

SPECIFIC OUTCOME 3
Sort secondary fibre according to the South African Standard Grade Definition.

SPECIFIC OUTCOME 4
Adhere to administrative and housekeeping requirements in a secondary fibre receipt and storage area.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59038	National Certificate: Pulp and Paper Operations	Level 2	Draft - Prep for P Comment	