No. 1548 **24 October 2003**

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

Plastics Manufacturing

Registered by NSB 06, Manufacturing, Engineering and Technology, publishes the following unit standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the unit standard. The unit standard 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, Hatfield Forum West, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the unit standards should reach SAQA at the address *below and no later than* ***16 November 2003.*** All correspondence should be marked **Standards Setting – SGB for Plastics manufacturing** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring

SAQA QUAL ID	*QUALIFICATION TITLE*	
23257	National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring	
SGB NAME	SGB Plastics Manufacturing	
ABET BAND	*PROVIDER NAME*	
Undefined		
QUALIFICATION CODE	*QUAL TYPE*	*SUBFIELD*
MET-2-National Certificate	National Certificate	Manufacturing and Assembly
MINIMUM CREDITS	*NQF LEVEL*	*QUALIFICATION CLASS*
132	Level 2	Regular-Unit Stds Based
SAQA DECISION NUMBER	*REGISTRATION START DATE*	*REGISTRATION END DATE*

PURPOSE OF THE QUALIFICATION

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to satisfy the challenges of participating effectively in the industrial rubber manufacturing industry.

For those who have been in the workplace for a long time, this qualification can be used in the Recognition of Prior Learning (RPL) process to assess and recognise workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification describes the learning outcomes (the skills, knowledge and values) required by industrial rubber manufacturers to effectively participate in a structured workplace.

For education and training providers, this qualification provides guidance for the development of appropriate learning programmes. For employers, the qualification allows skills gaps to be identified and programmes to close those skills gaps to be developed. The qualification also acts as an external benchmark for fulfilling the criteria of national and international quality standards such as ISO 9000:2000.

This qualification recognises the skills, knowledge and values acquired by learners working in enterprises that use industrial rubber manufacturing processes.

The chief skills that are recognised in this qualification are those of recognising and responding to changes that occur during the production process. This capability requires an understanding of quality requirements and of the conversion process. Hand skills play a small role in this qualification.

Qualified learners will also understand:
> The basics of how a business functions.
> Their role in the business, ie in production and related activities.
> How they are affected by legislation, regulations, agreements and policies related to their particular work environment.

With this understanding, learners will be able to participate actively in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts.They will also understand how they should operate within the legislative, safety and

quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Rationale

People working in the industrial rubber industry, whether involved in mixing, extruding, moulding or calendaring processes, require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

The industrial rubber manufacturing industry is characterised by sophisticated manufacturing processes that include mixing, extruding, moulding and calendaring, within a competitive and challenging environment. The manufactured rubber products have to respond to a wide variety of exacting customer and consumer quality requirements. In addition the industry has to respond to competition in export and domestic markets and ensure the on-going development of new products required by changing customer needs.

This is the first qualification in a series for industrial rubber manufacturing within the context of either mixing, extruding, moulding or calendaring, that will enable competent learners to participate effectively in the industrial rubber manufacturing industry, whether in micro, small, medium or large operations.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

This qualification assumes learners have a GETC at NQF level 1 or alternatively, ABET qualifications.
The qualifications must include:
> Literacy.
> Numeracy.
> Basic concepts of science and technology.

Recognition of prior learning:

This qualification may be obtained through the process of RPL. The learner should be thoroughly briefed prior to the assessment and support provided to assist in the process of developing a portfolio. While this is primarily a work-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

1. Demonstrate an understanding of the industrial rubber manufacturing process and the quality requirements thereof, and recognise and respond to changes in the manufacturing process that will result in increased levels of safety, health, quality or efficiency.

2. Demonstrate an understanding of and use appropriate tools and equipment to prepare input materials to an industrial rubber manufacturing process, make simple adjustments or changes to equipment and process, and convey (move, lift) materials or products.

3. Demonstrate an understanding of safety, health, environmental, risk and quality policies and procedures as they relate to working safely with due care for self and fellow workers.

4. Work effectively with others, demonstrating an understanding of own role in the organisation and the purpose of the organisation within the business context and economy.

5. Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning.

ASSOCIATED ASSESSMENT CRITERIA

1.
1.1 The manufacture of scrap or faulty products is minimised
1.2 Changes in the manufacturing process are responded to appropriately and responses are reported accurately and clearly (orally or in writing)
1.3 Questions and issues related to the manufacturing process relevant to the product can be respond to and / or discuss.

2.
2.1 Appropriate adjustments or changes are made.
2.2 Downtime is minimised.
2.3 No material or product is damaged or its quality compromised.

3.
3.1 Routine procedures can be discussed and effectively applied.
3.2 Appropriate protective clothing is worn and Appropriate safety measures are selected / and adhered to.
3.3 A clean and tidy work area is maintained.

4.
4.1 Information or decisions are received and instructions acted on.
4.2 Relevant information is reported and relayed where appropriate.
4.3 Purpose of own role and role of organisation is explained, using examples from own experience.

5.
5.1 Options for further learning are explained.
5.2 Preparation requirements for further learning are explained.
5.3 Learning plan is developed.

Integrated Assessment:

The integrated assessment must be based on a summative assessment guide. The guide must spell out how the assessor will assess different aspects of the performance and will include:
> Observing the learner at work (both in primary activities as well as other interactions) or by relevant simulations.
> Asking questions and initiating short discussions to test understanding.
> Looking at records and reports.

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or preparing the learner for assessment and familiarising the learner on the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities required for industrial rubber manufacturing. The assessment process should also establish how the critical outcomes have been advanced by the learning process

INTERNATIONAL COMPARABILITY

As a starting point, this series of qualifications in industrial rubber manufacturing (NQF levels 2 to 5), of which this qualification forms a part, was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United States, New Zealand and Australia. It was found to be difficult to compare the New Zealand and Australian narrow focus qualifications with these broad-based qualifications that also include fundamentals and generic core standards. It was further difficult to undertake such comparisons given that the New Zealand and Australian qualifications, although they are in the field of manufacturing and cover the same areas of specialisation (thus containing a large degree of similar content) are conceptualised as three year qualifications without exit level outcomes at the intermediate levels (NQF levels 2 and 3). This notwithstanding, the technical content of this series of qualifications does correspond with the equivalent level of qualification in manufacturing in Australia and New Zealand.

This qualification was also compared to manufacturing skills standards in the United States and this qualification broadly corresponds to these, with the same proviso that the United States skills standards do not make provision for exit levels below the equivalent of NQF level 4.

ARTICULATION OPTIONS

The qualification has been designed and structured so that qualifying learners can move from one context to another. 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. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA and have a qualification in engineering.

To assure the quality of the assessment process the moderation should cover one of the following:
> Assessor credentials.
> The assessment instrument.
> The assessment process.

Where assessment and moderation are taking place in sectors other than the MERSETA, assessment and moderation should be in terms of a memorandum of understanding negotiated with the MERS ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing - with a minimum of 6 months in industrial rubber manufacturing environment. The subject matter expertise of the assessor can be established by recognition of prior learning.

2. Appropriate experience and understanding of assessment theory, processes and practices.

3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards.
> The interests of the learner.
> The need for transformation and redressing the legacies of the past.
> The cultural background and language of the learner.

4. Registration as an assessor with the MERS ETQA or any other relevant ETQA.

5. Any other criteria required by the MERS ETQA or any other 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	12466 Explain the individual's role within business	Level 2	4	Registered
Core	13136 Install, test, maintain and commission basic electrical circuits	Level 2	16	Public Comment
Core	13158 Work with and look after materials in the industrial rubber manufacturing process	Level 2	12	Public Comment
Core	13160 Prepare industrial rubber manufacturing equipment	Level 2	12	Public Comment
Core	13161 Respond to changes in industrial rubber manufacturing processes	Level 2	12	Public Comment
Core	13163 Use and care for services, tools and equipment in the industrial rubber manufacturing process	Level 2	10	Public Comment

Core	13164 Monitor the quality of the output from a rubber manufacturing process	Level 2	12	Public Comment
Core	13220 Keep the work area safe and productive	Level 2	8	Registered
Core	13258 Participate in work group activities	Level 2	4	Registered
Elective	12483 Perform basic first aid	Level 2	4	Registered
Elective	12484 Perform basic fire fighting	Level 2	4	Public Comment
Elective	13166 Prepare product from the industrial rubber manufacturing process for the next stage or for storage	Level 2	10	Public Comment
Elective	13202 Apply study and learning techniques	Level 2	3	Public Comment
Fundamental	7469 Use mathematics to investigate and monitor the financial aspects of personal and community life	Level 2	2	Registered
Fundamental	8962 Maintain and adapt oral communication	Level 2	5	Registered
Fundamental	8963 Access and use information from texts	Level 2	5	Registered
Fundamental	8964 Write for a defined context	Level 2	5	Registered
Fundamental	8982 Demonstrate understanding of rational and irrational numbers and number systems within the context of relevant calculations	Level 2	3	Registered
Fundamental	9007 Work with a range of patterns and functions and solve problems	Level 2	5	Registered
Fundamental	9268 Manage basic personal finance	Level 2	6	Registered
Fundamental	12444 Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts	Level 2	3	Registered
Fundamental	12461 Communicate at work	Level 2	5	Registered
Fundamental	12463 Understand and deal with HIV/AIDS	Level 2	3	Registered
Fundamental	12465 Develop a learning plan and a portfolio for assessment	Level 2	6	Registered
Fundamental	13217 Collect and use information	Level 2	5	Registered
Fundamental	14085 Apply basic knowledge of statistics in order to investigate life and work related problems	Level 2	3	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring

SAQA QUAL ID	*QUALIFICATION TITLE*
23258	National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring
SGB NAME	SGB Manufacturing and Assembly Processes

ABET BAND	*PROVIDER NAME*	
Undefined		
QUALIFICATION CODE	*QUAL TYPE*	*SUBFIELD*
MET-3-National Certificate	National Certificate	Manufacturing and Assembly
MINIMUM CREDITS	*NQF LEVEL*	*QUALIFICATION CLASS*
138	Level 3	Regular-Unit Stds Based

SAQA DECISION NUMBER	*REGISTRATION START DATE*	*REGISTRATION END DATE*

PURPOSE OF THE QUALIFICATION

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to satisfy the challenges of participating effectively in the industrial rubber manufacturing industry.

For those who have been in the workplace for a long time, this qualification can be used in the Recognition of Prior Learning (RPL) process to assess and recognise workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification describes the learning outcomes (the skills, knowledge and values) required by industrial rubber manufacturers to effectively participate in a structured workplace.

For education and training providers, this qualification provides guidance for the development of appropriate learning programmes. For employers, the qualification allows skills gaps to be identified and programmes to close those skills gaps to be developed. The qualification also acts as an external benchmark for fulfilling the criteria of national and international quality standards such as ISO 9000:2000.

This qualification recognises the skills, knowledge and values acquired by learners involved in adjusting and maintaining industrial rubber manufacturing processes and influencing decisions in enterprises that use such processes.

The chief skills that are recognised in this qualification are those of approaches to using and looking after machinery and equipment, how to implement procedures related to various aspects of the production process, and how to relate principles and concepts to workplace activities, materials and equipment. Hand skills play a minor role in this qualification.

Qualified learners will also understand:
> How to relate what they see and experience to scientific and technological principles and concepts
> How to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace

With this understanding learners will be able to participate actively in workplace activities.

What learners achieve in this qualification will also serve as a basis for further learning where they will

engage more directly in controlling rubber-manufacturing processes and troubleshoot non-conformances experienced.

Rationale for the qualification:

People working in the industrial rubber industry, whether involved in mixing, extruding, moulding or calendaring processes, require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

The industrial rubber manufacturing industry is characterised by sophisticated manufacturing processes that include mixing, extruding, moulding and calendaring, within a competitive and challenging environment. The manufactured rubber products have to respond to a wide variety of exacting customer and consumer quality requirements. In addition the industry has to respond to competition in export and domestic markets and ensure the on-going development of new products required by changing customer needs.

This is the second qualification in a series for industrial rubber manufacturing within the context of either mixing, extruding, moulding or calendaring, that will enable competent learners to participate effectively in the industrial rubber manufacturing industry, whether in micro, small, medium or large operations.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that learners entering a programme towards this qualification have achieved an Industrial Rubber Manufacturing NQF level 2 qualification or have the relevant experience.

Recognition of prior learning:

This qualification may be obtained through the process of RPL. The learner should be thoroughly briefed prior to the assessment and support provided to assist in the process of developing a portfolio. While this is primarily a work-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

1. Perform routine operations on industrial rubber manufacturing equipment using related information .

2. Change, install and set up required tooling and start up the manufacturing process, ensuring the efficiency of the process and the quality of the manufactured product.

3. Understand, use and apply policies and procedures to maintain materials, equipment, work-place relations, safety, quality and environment.

4. Understand organisational structures and relationships and participate actively in workgroup discussions, in workgroup problem solving activities and in the implementation of solutions.

5. Demonstrate an understanding of options for further learning in this or a related field of learning and of preparation requirements for such learning.

ASSOCIATED ASSESSMENT CRITERIA

1.1 Materials, manufacturing equipment, instruments, moulds, dies and forming devices are safely and effectively prepared and inspected against operational requirements.
1.2 Routine operations are carried out safely and effectively, together with other team members.
1.3 The nature of routine operations and the related information required to operate and monitor such equipment can be discussed and explained.

2.1 Ensure that the manufacturing process and the manufactured products conform to specifications.

2.2 The installation, set up and start up processes are planned, organised and carried out efficiently, safely and within standard times.
2.3 The tooling set up process and its impact on the quality of the produced product can be discussed and explained.

3.1 Explain and apply routine procedures effectively.
3.2 Appropriate procedures are selected to solve problems in an efficient and effective manner.
3.3 Recording and reporting of conditions, outputs and incidents is done accurately and timeously.

4.1 Relationships with peers and supervisory. and /or management levels are established and function.
4.2 Issues related to the learners own role and purpose in the organisation can be discuss relative to the level of the qualification.
4.3 Problems are timeously identified and appropriate corrective action is taken problems are accurately reported and discuss with the appropriate personnel.

5.1 Options for further learning are explained.
5.2 Preparation for further learning requirements are explained.
5.3 Learning plan is developed.

Integrated Assessment:

The integrated assessment must be based on a summative assessment guide. The guide must spell out how the assessor will assess different aspects of the performance and will include:
> Observing the learner at work (both in primary activities as well as other interactions) or by relevant simulations
> Asking questions and initiating short discussions to test understanding
> Looking at records and reports

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities required for industrial rubber manufacturing. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

INTERNATIONAL COMPARABILITY

As a starting point, this series of qualifications in industrial rubber manufacturing (NQF levels 2 to 5), of which this qualification forms a part, was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United States, New Zealand and Australia. It was found to be difficult to compare the New Zealand and Australian narrow focus qualifications with these broad-based qualifications that also include fundamentals and generic core standards. It was further difficult to undertake such comparisons given that the New Zealand and Australian qualifications, although they are in the field of manufacturing and cover the same areas of specialisation (thus containing a large degree of similar content) are conceptualised as three year qualifications without exit level outcomes at the intermediate levels (NQF levels 2 and 3). This notwithstanding, the technical content of this series of qualifications does correspond with the equivalent level of qualification in manufacturing in Australia and New Zealand.

This qualification was also compared to manufacturing skills standards in the United States and this qualification broadly corresponds to these, with the same proviso that the United States skills standards do not make provision for exit levels below the equivalent of NQF level 4.

ARTICULATION OPTIONS

The qualification has been designed and structured so that qualifying learners can move from one context to another. Learners are able to move to either a polymer

composite fabrication or thermoplastic environment and structure top up learning may need to be arranged for learner coming into this environment.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA and have a qualification in engineering.
To assure the quality of the assessment process the moderation should cover one of the following:

> Assessor credentials
> The assessment instrument
> The assessment process

Where assessment and moderation are taking place in sectors other than the MERSETA, assessment and moderation should be in terms of a memorandum of understanding negotiated with the MERS ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing - with a minimum of 6 months in industrial rubber manufacturing environment. The subject matter expertise of the assessor can be established by recognition of prior learning.

2. Appropriate experience and understanding of assessment theory, processes and practices

3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards
> The interests of the learner
> The need for transformation and redressing the legacies of the past
> The cultural background and language of the learner
Registration as an assessor with the relevant ETQA

4. Any other criteria required by 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	9526 Manage basic business finance	Level 3	6	Registered
Core	9530 Manage work time effectively	Level 3	3	Registered
Core	9531 Show understanding of diversity in the workplace	Level 3	3	Registered
Core	9533 Use communication skills to handle and resolve conflict in the workplace	Level 3	3	Registered
Core	12456 Explain and use organisational procedures	Level 3	6	Registered
Core	12457 Develop learning strategies and techniques	Level 3	3	Registered
Core	13168 Prepare materials for industrial rubber production	Level 3	12	Public Comment
Core	13170 Change and set tooling	Level 3	16	Public Comment
Core	13173 Operate and monitor industrial rubber manufacturing equipment	Level 3	20	Public Comment
Core	13223 Apply safety, health and environmental protection procedures	Level 3	6	Registered
Core	13234 Apply quality procedures	Level 3	8	Public Comment
Elective	12484 Perform basic fire fighting	Level 2	4	Public Comment
Elective	8038 Operating lift trucks	Level 3	6	Registered

Elective	8039 Operating cranes	Level 3	10	Registered
Elective	13175 Test industrial rubber product	Level 3	20	Public Comment
Elective	12455 Perform the role of a safety, health and environmental protection representative	Level 4	3	Registered
Fundamental	9357 Develop and use keyboard skills to enter text	Level 1	3	Registered
Fundamental	8968 Accommodate audience and context needs in oral communication	Level 3	5	Registered
Fundamental	8969 Interpret and use information from texts	Level 3	5	Registered
Fundamental	8970 Write texts for a range of communicative contexts	Level 3	5	Registered
Fundamental	9010 Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2	Registered
Fundamental	9011 Use mathematics to investigate and monitor the financial aspects of personal and business issues	Level 3	5	Registered
Fundamental	9012 Investigate life and work related problems using data and probabilities	Level 3	5	Registered
Fundamental	9528 Communicate with clients	Level 3	3	Registered
Fundamental	9529 Compile feasibility and commissioning reports	Level 3	3	Registered
Fundamental	14108 Measure, estimate, calculate physical quantities, explore, describe and represent, interpret, justify geometrical relationships in 2 & 3-dimensional space relevant to the life or workplace of the comm	Level 3	4	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring

SAQA QUAL ID	*QUALIFICATION TITLE*	
23259	National Certificate: Industrial Rubber Manufacturing: Mixing OR Extruding OR Moulding OR Calendaring	
SGB NAME	SGB Plastics Manufacturing	
ABET BAND	*PROVIDER NAME*	
Undefined		
QUALIFICATION CODE	*QUAL TYPE*	*SUBFIELD*
MET-4-National Certificate	National Certificate	Manufacturing and Assembly
MINIMUM CREDITS	*NQF LEVEL*	*QUALIFICATION CLASS*
121	Level 4	Regular-Unit Stds Based
SAQA DECISION NUMBER	*REGISTRATION START DATE*	*REGISTRATION END DATE*

PURPOSE OF THE QUALIFICATION

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to satisfy the challenges of participating effectively in the industrial rubber manufacturing industry.

For those who have been in the workplace for a long time, this qualification can be used in the Recognition of Prior Learning (RPL) process to assess and recognise workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification describes the learning outcomes (the skills, knowledge and values) required by industrial rubber manufacturers to effectively participate in a structured workplace.

For education and training providers, this qualification provides guidance for the development of appropriate learning programmes. For employers, the qualification allows skills gaps to be identified and programmes to close those skills gaps to be developed. The qualification also acts as an external benchmark for fulfilling the criteria of national and international quality standards such as ISO 9000:2000.

This qualification recognises the skills, knowledge and values acquired by learners to initiate and maintain industrial rubber manufacturing processes by, setting up manufacturing equipment for production, solving common problems to produce quality products to meet customer needs, interacting with others to achieve manufacturing objectives.

Qualified learners will also understand:
> how to plan, schedule and evaluate own work
> how to interact with and develop the capacity of team members to maintain and support quality, safety and health systems.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage in maintaining production efficiencies and optimising production processes.

Rationale for the qualification:

The industrial rubber manufacturing industry is characterised by sophisticated manufacturing processes that include mixing, extruding, moulding and calendaring, within a competitive and challenging environment. The

manufactured rubber products have to respond to a wide variety of exacting customer and consumer quality requirements. In addition the industry has to respond to competition in export and domestic markets and ensure the on-going development of new products required by changing customer needs.

This means that people working in the industrial rubber industry, whether involved in mixing, extruding, moulding or calendaring processes, require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

This is the third qualification in a series for industrial rubber manufacturing within the context of either mixing, extruding, moulding or calendaring, that will enable competent learners to participate effectively in the industrial rubber manufacturing industry, whether in micro, small, medium or large operations.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that learners entering a programme towards this qualification have achieved an Industrial Rubber Manufacturing NQF level 3 qualification or have the relevant experience.

Recognition of prior learning:

This qualification may be obtained through the process of RPL. The learner should be thoroughly briefed prior to the assessment and support provided to assist in the process of developing a portfolio. While this is primarily a work-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

Exit level outcomes:

1. Set industrial rubber manufacturing equipment and maintain the efficiency of the process and the quality of the manufactured product.

2. Understand, use and apply rubber technology principles in order to identify, formulate and recommend solutions to common manufacturing process problems and areas for improvement.

3. Lead workgroup and workgroup members' activities relating to materials, equipment and workplace relations.

4. Maintain a safe, effective and efficient workplace, developing the skills and performance of workgroup members in this regard.
> Range: Safety also includes issues of health and issues relating to reducing negative impacts on the environment.

5. Understand and work with internal customers and partners.
> Range: Internal customers and partners include those with roles relating to material preparation and supply, quality assurance, safe, health and the environment, sales and marketing, management, unions or worker representatives and any others who interact with the manufacturing environment.

6. Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria:

1.1 Ensure that the manufacturing process and the manufactured products conform to specifications
1.2 Set-up equipment for a new or modified lines are planned and carried out efficiently and safely

1.3 Perform continuous quality checks and review settings
1.4 Issues related the manufacturing process and the materials used to run a new or modified product line is discussed and resolved

2.1 Identify problems and formulate solutions and propose ways to minimize reoccurrence of such problems
2.2 Problems are recorded and monitored for reoccurrence and solutions are implemented,
2.3 Problems, solutions and opportunities for improvement are discussed and resolved with workgroup members and internal customers and partners
2.4 Discuss are explain the underlying scientific and technological causes and related issues for problems

3.1 Work is organized and planned
3.2 Manage interpersonal team processes to achieve required outputs
3.3 Evaluate achievements of work unit objectives and suggest and implement improvements

4.1 Ensure that the workplace including tools, equipment, safety equipment and services are safe and free of hazards
4.2 Coach, influence and support workgroup members to work effectively, efficiently and safely

5.1 Key issues actions, responsibilities, and timeframes are identified, discussed and resolved and reporting issues clarified
5.2 Colleagues opinions, suggestions, ideas are listened to and decisions and plans are recorded and implemented

6.1 Options for further learning are explained
6.2 Preparation requirements for further learning are explained
6.3 Learning plan is developed

Integrated Assessment:

The integrated assessment must be based on a summative assessment guide. The guide must spell out how the assessor will assess different aspects of the performance and will include:

> Observing the learner at work (both in primary activities as well as other interactions) or by relevant simulations
> Asking questions and initiating short discussions to test understanding
> Looking at records and reports

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or preparing the learner for assessment and familiarising the learner on the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities required of mechatronics. The assessment process should also establish how the critical outcomes have been advanced by the learning process

Assessors should also evaluate evidence that the learner has been performing consistently over a period of time. The assessment can include a small project or projects that need more time to complete than is practical in a live assessment session.

INTERNATIONAL COMPARABILITY

As a starting point, this series of qualifications in industrial rubber manufacturing (NQF levels 2 to 5), of which this qualification forms a part, was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United States, New Zealand and Australia. It was found to be difficult to compare the New Zealand and Australian narrow focus qualifications with these broad-based qualifications that also include fundamentals and generic core standards. It was further difficult to undertake such comparisons given that the New Zealand and Australian qualifications, although they are in the field of

manufacturing and cover the same areas of specialisation (thus containing a large degree of similar content) are conceptualised as three year qualifications without exit level outcomes at the intermediate levels (NQF levels 2 and 3). This notwithstanding, the technical content of this series of qualifications does correspond with the equivalent level of qualification in manufacturing in Australia and New Zealand. This qualification was also compared to manufacturing skills standards in the United States and this qualification broadly corresponds to these, with the same proviso that the United States skills standards do not make provision for exit levels below the equivalent of NQF level 4.

ARTICULATION OPTIONS

The qualification has been designed and structured so that qualifying learners can move from one context to another. 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. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA and have a qualification in engineering.

To assure the quality of the assessment process the moderation should cover one of the following:
> Assessor credentials
> The assessment instrument
> The assessment process

Where assessment and moderation are taking place in sectors other than the MERSETA, assessment and moderation should be in terms of a memorandum of understanding negotiated with the MERS ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing - with a minimum of 2 years in industrial rubber manufacturing environment. The subject matter expertise of the assessor can be established by recognition of prior learning.

2. Appropriate experience and understanding of assessment theory, processes and practices.

3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards
> The interests of the learner
> The need for transformation and redressing the legacies of the past
> The cultural background and language of the learner

4. Registration as an assessor with the MERS ETQA or any other relevant ETQA.

5. Any other criteria required by the MERS ETQA or any other 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	9527 Lead a team, plan, allocate and assess their work	Level 3	4	Registered
Core	13195 Lead workgroup activities relating to material preparation processes	Level 4	8	Registered
Core	13196 Set industrial rubber manufacturing equipment	Level 4	14	Draft - Prep for P Comment

Core	13198	Formulate and recommend solutions to common industrial rubber manufacturing problems	Level 4	20	Draft - Prep for P Comment
Core	13224	Monitor the application of safety, health and environmental protection procedures	Level 4	4	Public Comment
Core	13235	Maintain the quality assurance system	Level 4	5	Public Comment
Core	13254	Contribute to the implementation and maintenance of business processes	Level 4	10	Public Comment
Elective	12484	Perform basic fire fighting	Level 2	4	Public Comment
Elective	12455	Perform the role of a safety, health and environmental protection representative	Level 4	3	Registered
Elective	13194	Perform statistical process control	Level 4	12	Draft - Prep for P Comment
Fundamental	7794	Communicate verbally	Level 3	8	Registered
Fundamental	9528	Communicate with clients	Level 3	3	Registered
Fundamental	9850	Communicate and liaise with internal departments and external sales support structures	Level 3	4	Registered
Fundamental	9960	Communicate verbally and non-verbally in the workplace	Level 3	5	Registered
Fundamental	12429	Develop a personal financial plan	Level 3	2	Public Comment
Fundamental	8974	Engage in sustained oral communication and evaluate spoken texts	Level 4	5	Registered
Fundamental	8975	Read, analyse and respond to a variety of texts	Level 4	5	Registered
Fundamental	8976	Write for a wide range of contexts	Level 4	5	Registered
Fundamental	9014	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 4	6	Registered
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6	Registered
Fundamental	9502	Write a technical report	Level 4	4	Registered
Fundamental	9505	Manage basic business and personal finance	Level 4	6	Registered
Fundamental	9506	Communicate in an assertive manner with clients and fellow workers	Level 4	4	Registered
Fundamental	12417	Measure, estimate & calculate physical quantities & explore, critique & prove geometrical relationships in 2 and 3 dimensional space in the life and workplace of adult with increasing responsibilities	Level 4	4	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 1

Install, test, maintain and commission basic electrical circuits

SAQA US ID	*UNIT STANDARD TITLE*
13136	Install, test, maintain and commission basic electrical circuits

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Read and interpret basic electric circuit diagrams and select electrical components.

SPECIFIC OUTCOME 2

Select, terminate and join electric cables.

SPECIFIC OUTCOME 3

Install wire-ways.

SPECIFIC OUTCOME 4

Install basic electrical circuits in accordance with relevant regulations.

SPECIFIC OUTCOME 5

Maintain electrical installations.

SPECIFIC OUTCOME 6

Apply relevant safety practices and procedures when working with electrical equipment.

SPECIFIC OUTCOME 7

Discuss and report incidents and problems related to electrical work.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 2

Work with and look after materials in the industrial rubber manufacturing process

SAQA US ID	*UNIT STANDARD TITLE*
13158	Work with and look after materials in the industrial rubber manufacturing process

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for working with material.

SPECIFIC OUTCOME 2

Materials are located and transport is arranged to the workstation.

SPECIFIC OUTCOME 3

Look after, transport and store materials.

SPECIFIC OUTCOME 4

Identify problems and take corrective action.

SPECIFIC OUTCOME 5

Record material quantities and report material usage.

SPECIFIC OUTCOME 6

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SPECIFIC OUTCOME 7

Discuss and explain incidents and problems related to working with the material.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 3

Prepare industrial rubber manufacturing equipment

SAQA US ID	*UNIT STANDARD TITLE*
13160	Prepare industrial rubber manufacturing equipment

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan production equipment preparation.

SPECIFIC OUTCOME 2

Prepare site for equipment set up.

SPECIFIC OUTCOME 3

Prepare equipment for use.

SPECIFIC OUTCOME 4

Produce first-off product while monitoring equipment indicators.

SPECIFIC OUTCOME 5

Identify problems and take corrective action.

SPECIFIC OUTCOME 6

Apply quality checks on completed work / pre-production samples.

SPECIFIC OUTCOME 7

Care for and store equipment preparation tools and equipment.

SPECIFIC OUTCOME 8

Record information on work done and report machine readiness.

SPECIFIC OUTCOME 9

Discuss and explain incidents and problems related to equipment preparation.

SPECIFIC OUTCOME 10

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 4

Respond to changes in industrial rubber manufacturing processes

SAQA US ID	*UNIT STANDARD TITLE*
13161	Respond to changes in industrial rubber manufacturing processes

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Recognise and report changes and/or malfunctions.

SPECIFIC OUTCOME 2

Carry out housekeeping and simple maintenance as required by the process.

SPECIFIC OUTCOME 3

Monitor material flow and respond to shortages.

SPECIFIC OUTCOME 4

Check the product-in-process visually and respond to changes.

SPECIFIC OUTCOME 5

Determine output figures, record outputs, stoppages and changes.

SPECIFIC OUTCOME 6

Identify problems and take corrective action.

SPECIFIC OUTCOME 7

Discuss and explain incidents and problems related to the process, the materials and the products.

SPECIFIC OUTCOME 8

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 5

Use and care for services, tools and equipment in the industrial rubber manufacturing process

SAQA US ID	*UNIT STANDARD TITLE*
13163	Use and care for services, tools and equipment in the industrial rubber manufacturing process

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Choose and use the correct tools to cut, trim and finish.

SPECIFIC OUTCOME 3

Choose and use the correct tools to adjust and maintain equipment.

SPECIFIC OUTCOME 4

Choose and use the correct tools and materials to clean equipment and product.

SPECIFIC OUTCOME 5

Lift, load and unload products, equipment and containers.

SPECIFIC OUTCOME 6

Adjust, clean and store tools and equipment.

SPECIFIC OUTCOME 7

Identify problems and take corrective action.

SPECIFIC OUTCOME 8

Record information on work done and report.

SPECIFIC OUTCOME 9

Discuss incidents and problems related to using and caring for services, tools and equipment.

SPECIFIC OUTCOME 10

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 6

Monitor the quality of the output from a rubber manufacturing process

SAQA US ID	*UNIT STANDARD TITLE*
13164	Monitor the quality of the output from a rubber manufacturing process

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Conduct visual checks on incoming and finished materials, components and product.

SPECIFIC OUTCOME 3

Measure products, components and materials and conduct initial / operational / on-line tests.

SPECIFIC OUTCOME 4

Recognise defects and mark or remove defective materials, products or components.

SPECIFIC OUTCOME 5

Record production and / or defects and report incidents.

SPECIFIC OUTCOME 6

Receive and respond to information or communications.

SPECIFIC OUTCOME 7

Discuss and explain incidents and problems related to monitoring the quality of the output.

SPECIFIC OUTCOME 8

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 7

Prepare materials for industrial rubber production

SAQA US ID	*UNIT STANDARD TITLE*
13168	Prepare materials for industrial rubber production

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 3	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Inspect the condition of material preparation tools and equipment.

SPECIFIC OUTCOME 3

Prepare materials for production.

SPECIFIC OUTCOME 4

Carry out quality checks related to the material.

SPECIFIC OUTCOME 5

Label and store materials.

SPECIFIC OUTCOME 6

Care for and store material preparation tools and equipment.

SPECIFIC OUTCOME 7

Complete all applicable documentation.

SPECIFIC OUTCOME 8

Report on material quantities and tool and equipment condition.

SPECIFIC OUTCOME 9

Discuss and explain incidents and problems related to material preparation process.

SPECIFIC OUTCOME 10

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 8

Change and set tooling

SAQA US ID	*UNIT STANDARD TITLE*
13170	Change and set tooling

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 3	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Prepare set up tools and instruments.

SPECIFIC OUTCOME 3

Prepare work area for tooling change.

SPECIFIC OUTCOME 4

Change and set up tooling.

SPECIFIC OUTCOME 5

Apply quality checks on completed work.

SPECIFIC OUTCOME 6

Care for and store material preparation tools and equipment.

SPECIFIC OUTCOME 7

Complete all applicable documentation related to acquiring, moving and setting up of tooling.

SPECIFIC OUTCOME 8

Discuss and explain incidents and problems related to tooling set up.

SPECIFIC OUTCOME 9

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 9

Operate and monitor industrial rubber manufacturing equipment

SAQA US ID	*UNIT STANDARD TITLE*
13173	Operate and monitor industrial rubber manufacturing equipment

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 3	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Prepare work area for production.

SPECIFIC OUTCOME 3

Operate rubber manufacturing equipment.

SPECIFIC OUTCOME 4

Monitor materials, equipment and rubber manufacturing process.

SPECIFIC OUTCOME 5

Keep production process within operating parameters.

SPECIFIC OUTCOME 6

Liase with process control personnel and maintenance specialists.

SPECIFIC OUTCOME 7

Apply quality checks.

SPECIFIC OUTCOME 8

Complete and process all applicable documentation.

SPECIFIC OUTCOME 9

Discuss and explain incidents and problems related to equipment operation.

SPECIFIC OUTCOME 10

Work safely with due care for self, fellow workers, equipment, materials and the environment.

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 10

Apply quality procedures

SAQA US ID	*UNIT STANDARD TITLE*
13234	Apply quality procedures

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Plastics Manufacturing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 3	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Explain and discuss the quality assurance system and quality objectives, standards, elements

SPECIFIC OUTCOME 2

Apply quality procedures and standards in work area

SPECIFIC OUTCOME 3

Handle and care for instruments and gauges related to quality processes

SPECIFIC OUTCOME 4

Recognise and report on quality problems in work area

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 11

Optimise the safety, health and environmental protection system

SAQA US ID	*UNIT STANDARD TITLE*
12459	Optimise the safety, health and environmental protection system

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	6

Specific Outcomes:

SPECIFIC OUTCOME 1

Communicate workplace safety, health and environmental protection policies and procedures

SPECIFIC OUTCOME 2

Conduct preventive safety, health and environmental protection inspections

SPECIFIC OUTCOME 3

Benchmark safety, health and environmental protection practices

SPECIFIC OUTCOME 4

Determine priorities for safety, health and environmental training

SPECIFIC OUTCOME 5

Respond to new concerns and implement changes to the safety, health, environmental protection system

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 12

Optimise an industrial rubber manufacturing process

SAQA US ID	*UNIT STANDARD TITLE*
13199	Optimise an industrial rubber manufacturing process

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	24

Specific Outcomes:

SPECIFIC OUTCOME 1

Analyse production data and identify opportunities for improvement.

SPECIFIC OUTCOME 2

Generate and test options to achieve improvement.

SPECIFIC OUTCOME 3

Generate plan for optimisation, brief work group and implement plan.

SPECIFIC OUTCOME 4

Collect and evaluate results and review and adjust the optimisation process.

SPECIFIC OUTCOME 5

Adjust and update operating procedures.

SPECIFIC OUTCOME 6

Identify problems and take corrective action.

SPECIFIC OUTCOME 7

Explain and discuss optimising issues with workgroup and other partners.

SPECIFIC OUTCOME 8

Understand the impact and the inter-relationship of changes on production quality and output.

SPECIFIC OUTCOME 9

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 13

Conduct mould or material trials in industrial rubber manufacturing processes

SAQA US ID	*UNIT STANDARD TITLE*
13200	Conduct mould or material trials in industrial rubber manufacturing processes

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Collect data for evaluation.

SPECIFIC OUTCOME 3

Formulate project plan.

SPECIFIC OUTCOME 4

Select and brief project team.

SPECIFIC OUTCOME 5

Arrange necessary tools, equipment and material.

SPECIFIC OUTCOME 6

Run trials and compile and process report on results.

SPECIFIC OUTCOME 7

Identify problems and take corrective action.

SPECIFIC OUTCOME 8

Present final report and recommendations.

SPECIFIC OUTCOME 9

Discuss and explain incidents and problems relating to trials.

SPECIFIC OUTCOME 10

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 14

Maintain business processes

SAQA US ID	*UNIT STANDARD TITLE*
13256	Maintain business processes

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify internal and external customer needs

SPECIFIC OUTCOME 2

Request and negotiate production requirements with internal partners and management

SPECIFIC OUTCOME 3

Maintain supplier and customer relationships to ensure quality

SPECIFIC OUTCOME 4

Monitor customer satisfaction

SPECIFIC OUTCOME 5

Make recommendations for improvement of external customer and supplier relationships

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 15

Prepare product from the industrial rubber manufacturing process for the next stage or for storage

SAQA US ID	*UNIT STANDARD TITLE*
13166	Prepare product from the industrial rubber manufacturing process for the next stage or for storage

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Apply finishing procedures.

SPECIFIC OUTCOME 3

Carry out post-production operations.

SPECIFIC OUTCOME 4

Identify problems and take corrective action.

SPECIFIC OUTCOME 5

Record information, and report on work done.

SPECIFIC OUTCOME 6

Discuss and explain incidents and problems related to preparing product for the next stage.

SPECIFIC OUTCOME 7

Work safely with due care for self, fellow workers, equipment, materials and the environment.

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 16

Apply study and learning techniques

SAQA US ID	*UNIT STANDARD TITLE*
13202	Apply study and learning techniques

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 2	3

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify and discuss types of available study and learning techniques

SPECIFIC OUTCOME 2

Evaluate and select appropriate study and learning techniques for the particular field of learning

SPECIFIC OUTCOME 3

Reflect on learning experiences and selected study and learning techniques

SPECIFIC OUTCOME 4

Evaluate and report on progress with the learning process

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 17

Test industrial rubber product

SAQA US ID	*UNIT STANDARD TITLE*
13175	Test industrial rubber product

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 3	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Plan and prepare for activity.

SPECIFIC OUTCOME 2

Prepare work area and equipment.

SPECIFIC OUTCOME 3

Prepare test samples.

SPECIFIC OUTCOME 4

Test rubber product.

SPECIFIC OUTCOME 5

Evaluate test results.

SPECIFIC OUTCOME 6

Apply quality checks on completed work.

SPECIFIC OUTCOME 7

Care for and store sample preparation and testing tools and equipment.

SPECIFIC OUTCOME 8

Complete and process all applicable documentation.

SPECIFIC OUTCOME 9

Report on product testing process.

SPECIFIC OUTCOME 10

Discuss and explain incidents and problems relating to product testing.

SPECIFIC OUTCOME 11

Work safely with due care for self, fellow workers, equipment, materials and the environment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 18

Develop the skills of a work team

SAQA US ID	*UNIT STANDARD TITLE*
12458	Develop the skills of a work team

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Discuss and explain the concept of skills development and associated individual and team skills

SPECIFIC OUTCOME 2

Determine areas for improvement in performance and assess team members for skills gaps

SPECIFIC OUTCOME 3

Arrange individual and team skills development plans and programmes

SPECIFIC OUTCOME 4

Request training or other interventions

SPECIFIC OUTCOME 5

Support team members in implementing new learning

SPECIFIC OUTCOME 6

Assess and evaluate the impact of new learning on individuals and the team

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 19

Counsel workgroup members in respect of HIV/AIDS

SAQA US ID	*UNIT STANDARD TITLE*
13203	Counsel workgroup members in respect of HIV/AIDS

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	3

Specific Outcomes:

SPECIFIC OUTCOME 1

Explain and discuss various approaches to counselling

SPECIFIC OUTCOME 2

Counsel workgroup members in respect of HIV/AIDS

SPECIFIC OUTCOME 3

Refer workgroup members seeking further counselling to appropriate qualified staff

SPECIFIC OUTCOME 4

Reflect on counselling experiences and approaches taken

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 20

Use mathematical and statistical techniques effectively

SAQA US ID	*UNIT STANDARD TITLE*
12432	Use mathematical and statistical techniques effectively

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Discuss and explain a range of mathematical and statistical techniques used in the workplace

SPECIFIC OUTCOME 2

Apply mathematical and statistical techniques

SPECIFIC OUTCOME 3

Perform costing, estimating and budget calculations

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 21

Use communication techniques effectively

SAQA US ID	*UNIT STANDARD TITLE*
12433	Use communication techniques effectively

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
MET-MNA-0-SGB MAP	Regular	Level 5	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Discuss and explain a range of written and oral communication techniques used in the workplace

SPECIFIC OUTCOME 2

Lead discussions and chair meetings

SPECIFIC OUTCOME 3

Generate a variety of workplace reports using various data gathering techniques

SPECIFIC OUTCOME 4

Deliver presentations