No. 541 **9 June *2006***

SOUTH AFRICAN QUALIFICATIONS **AUTHORITY (SAQA)**

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

Manufacturing and Assembly Processes

Registered **by** Organising **Field** 06, Manufacturing, Engineering and Technology, publishes the following **qualification** and unit standards for public comment.

This notice contains the titles, fields, subfields, NQF levels, credits, and purpose of the qualification and unit standards. The 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 for Standards Setting and Development at the SAQA offices, Hatfield Forum **West, 1067** Arcadia ***Street,*** Hatfield, Pretoria.

Comment on the qualification and unit standards should reach SAQA at the address ***below and no later than 6 July 2006.*** **All** correspondence should be marked Standards Setting **– SGB for** Manufacturing and Assembly Processes and addressed to

The Director: Standards Setting and Development
SAQA
***Attention: Mr. D** Mphuthing*
Postnet Suite 248
Private Bag **X06**
Waterkloof
0145
or faxed to 012 **– 431-5144**
e-mail: dmphuthing@saqa.co.za

S BHIKHA
DIRECTOR STANDARDS SETTING AND DEVELOPMENT

SAQA QUAL ID	*QUALIFICATION TITLE*		
50560	Further Education and Training Certificate: Small Craft Construction		
SGB NAME		*ORGANISING FIELD ID*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes		**6**	
QUAL TYPE		*ORGANISING FIELD DESCRIPTION*	*SUBFIELD*
Further Ed and Training Cert		Manufacturing, Engineering and Technology	Manufacturing and Assembly
ABET BAND	*MINIMUM CREDITS*	*NQF LEVEL*	*QUALIFICATION CLASS*
Undefined	169	Level **4**	Regular-Unit Stds Based

Range:

> Small craft construction is limited to boats with fibreglass hulls not exceeding five meters.
> Construction excludes the manufacturing of the hull and major components such as the power system **and** communication systems but does include the fitting of such systems.

Rationale:

Since small craft construction discipline has not previously had formal qualifications, people who have worked in this field require validation by being given access to formal qualifications and standards.

The qualification will therefore be able to affirm the experiences of boat builders through the recognition of prior learning, credit accumulation and achievement of competencies in communicating and presenting

information clearly and reliably and demonstrating the ability to analyse information to identify problems and determine trends; undertaking selfdirected and a limited amount of directed small craft construction activities; Monitoring, maintaining and supporting quality manufacturing processes and procedures in building and maintaining small craft by accepting responsibility for outcomes whilst operating under general guidance; demonstrating an understanding of quality specifications and an ability to interpret these and evaluate small craft manufacturing processes to determine compliance; and maintaining and supporting procedures to solve a variety of problems, both familiar and unfamiliar, within small craft manufacturing context and operate within familiar and new situations, taking responsibility and making decisions.

This qualification is for learners who are pursuing a career specifically within the small craft construction sector and is one of several in a learning pathway that has been created. It also provides learners with opportunities for professional development and career advancement within the broader manufacturing environment

This qualification reflects the need and demand within the small craft construction sector for skilled employees, people looking for a career in small craft construction of which is limited to boats with fibreglass hulls not exceeding five meters and excludes the manufacturing of the hull and major components such as the power system and communication systems but does include the fitting of such systems or new entrants to the employment market that will be able to perform predominantly in a production environment that produces national and international quality small craft for leisure activity. Through the availability of this qualification employees within the boating environment will be able to provide world class service, improve professionalism and enhance the quality of service delivery thereby contributing to the creation of investor confidence and global competitiveness in the South African small craft construction sector.

This qualification opens up access for historically disadvantaged incumbents as well as other learners in the boating environment for further development through vertical mobility to higher-level qualifications and horizontally to qualifications on the same level but in a different discipline in the manufacturing field.

RECOGNIZE PREVIOUS LEARNING?

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LEARNING ASSUMED TO BE IN PLACE

It is assumed that learners are already competent in:
> Communication and Mathematical Literacy at NQF Level 3,

The unit standards:
> "Apply the fundamental methods of composite, wood and metal small craft construction" at NQF Level 3.
> "Install marine systems under close supervision" at NQF Level 3.
> "Apply the fundamentals of design in small craft construction processes" at NQF Level 3.

Recognition of prior learning:

The structure of this unit standards-based qualification makes the Recognition of Prior Learning possible. This qualification may therefore be achieved in part or completely through the recognition of prior learning, which inctudes formal, informal and non-formal learning and work experience. The learner should be thoroughly briefed on the mechanism to be used and support and guidance should be provided. Care should be taken that the mechanism used provides the learner with an opportunity to demonstrate competence and is not so onerous as to prevent learners from taking up the RPL option towards gaining a qualification,

If the learner is able to demonstrate competence in the knowledge, skills, values and attitudes implicit in this qualification the appropriate credits should be assigned to the learner. Recognition of Prior Learning will be done by means of Integrated Assessment as mentioned above.

This Recognition of Prior Learning may allow:
> Accelerated access to further learning at this or higher levels on the NQF.
> Gaining of credits towards a unit standard.
> Obtaining of this Qualification in part or in whole.

Access to the Qualification:

Access to this qualification is open bearing in mind learning assumed to be in place.

QUALIFICATION RULES

The Qualification is made up of a planned combination of learning outcomes that have a defined purpose

and will provide qualifying learners with applied competence and a basis for further training. The Qualification is made up of unit standards that are classified as Fundamentat, Core and Elective in achieving its purpose. A minimum of 169 credits is required to complete the Qualification.

In this Qualification the credits are allocated as follows:
> Fundamental: 56 credits.
> Core: 59 credits.
> Electives (minimum): 54 credits.
> Total: 169 credits.

Note that thirty five per cent of the credits relate directly to small craft construction practices. The elective component allows the learner to select unit standards that are:
> Related to the work done by the learner in an organisatin.
> Related to specialist areas in small craft construction specifically or other specialist areas that the learner might be interested in.

This is to ensure that while there is a strong small craft construction focus, there is scope for learners to select additional unit standards that are relevant to their own situations and cement articulation and portability opportunities for the learner.

Motivation for number of credits assigned to fundamental, core and elective.

Allocation of Fundamental credits:

Unit standards to the value of 56 credits in Language and Communication, Mathematicat Literacy have been selected for the Fundamental Component. These unit standards will add value to learners both organisationally and functionally in terms of their ability to operate as a proficient person in a global economy. All the Fundamental unit standards are compulsory.

Allocation of Core credits:

59 credits have been allocated to unit standards in the Core component of this qualification. This is *to* ensure that the qualification has a strong small craft construction focus. The unit standards classified as Core reflect the compulsory aspects in small craft construction that the learner needs *to* be fully competent in. The Core component covers competencies related to advanced boat systems and processes, qualifi assurance, generic management and financial skills, project management and occupational, health, safety and environmental competencies. The unit standards provide the knowledge, values and skills that all learners require in order to engage in small craft construction practices. All Core unit standards are compulsory.

Allocation of Elective credits:

There are unit standards totalling 463 credits in this component. Learners are required to select electives totalling a minimum of 54 credits. It is intended that the selected electives should allow learners to develop alternative career paths: or gain additional skills and knowledge that relate directly to the work of the learner and which will enhance the learner's work performance or introduce a learner to areas of specialisation in small craft construction.

EXIT LEVEL OUTCOMES

Qualifying learners are able to:

1. Communicate and present information clearly and reliably and demonstrate the ability to analyse information *to* identify problems and determine trends.

2. Undertake self-directed and a limited amount of directed small craft construction activities.

3. Monitor, maintain and support quality manufacturing processes and procedures in building and maintaining small craft by accepting responsibility for outcomes whilst operating under general guidance.

4. Demonstrate an understanding of quality specifications and an ability to interpret these and evaluate small craft manufacturing processes *to* determine compliance.

5. Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within small craft manufacturing context and operate within familiar and new situations, taking responsibility and making decisions.

ASSOCIATED ASSESSMENT CRITERIA

1.
> Verbal and non-verbal communication skills are used effectively in the workplace.
> A range of communication strategies are identified and utilised to solve manufacturing related problems.
> Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management.
> Data gathered through manufacturing procedures is examined systematically and analysis is repeated until problem is solved.
> Records are available for scrutiny and future reference.

2.
> Routine maintenance, operations and service activities are conducted on small craft in order to monitor, maintain and support quality manufacturing processes.
> An understanding of the fundamentals of plug and mould construction are demonstrated for the manufacture of small craft andlor their components.
> An understanding of engineering design and fluid dynamic principles are demonstrated within the design for sailing and power craft.
> An understanding of the fundamentals of design and installation of marine systems are demonstrated in undertaking selfdirected systems operations and trouble-shooting.

3.
> Problems are identified and diagnosed promptly, impact on operations is evaluated and implementation of chosen solution restores operating conditions safely and effectively.
> Production, housekeeping and maintenance requirements and routines are communicated to relevant personnel and carried out according to organisational and legal requirements.
> Health ahd safety and preventive measures in area of responsibility are promoted and monitored, and staff members are coached to ensure understanding of issues.
> Work schedules and production specifications are drawn up according to organisational requirements, to provide optimum productionwithin given constraints.
> Machinery is prepared, set up, tested and operated correctly, in accordance with all relevant health and safety and organisational requirements.
> Designs and specifications are developed with due consideration for needs of target user, available resources and limitations, and cost effectiveness.

4.
> Knowledge and comprehension of small craft manufacturing concepts and its effects on quality products and materials are applied according to manufacturing principles.
> Quality control practices are performed during small craft manufacturing processes according to standard operating procedures.
> Quality assurance procedures are monitored and controlled according to standard operating procedures.
> Tolerance and troubleshooting activities are undertaken to ensure quality assurance procedures are followed.
> Quality specifications are interpreted and applied *to* small craft manufacturing processes for compliance to be determined and reported.
> Can respond to questions and discuss issues related to quality specifications and the principles underpinning such specifications.

5.
> Solutions to small craft manufacturing problems are based on a clear analysis of information gathered through diagnostic procedures.
> Procedures are modified to respond to unfamiliar problems where appropriate.
> Can respond to questions and discuss issues related to familiar and unfamiliar problems arising in small craft manufacturing processes.
> All actions related to problem solving are accurately recorded for future reference.

IntegratedAssessment

> Assessment practices must be open, transparent, fair, valid, and reliable and ensure that no learner is disadvantaged in any way whatsoever, so that an integrated approach to assessment is incorporated into the qualification.

> Learning, teaching and assessment are inextricably interwoven. Whenever possible, the assessment of knowledge, skills, attitudes and values shown in the unit standards should be integrated.

> Assessment of communication and mathematical literacy should be integrated as far as possible with

other aspects and should use practical administration contexts wherever possible. A variety of methods must be used in assessment and tools and activities must *be* appropriate to the context in which the learner is working or will work. Where it is not possible to assess the learner in the workplace or on-the-job, simulations, case studies, role-plays and other similar techniques should be used to provide a context appropriate to the assessment.

> The term 'Integrated Assessment' implies that theoretical and practical components should be assessed together. During integrated assessments, the assessor should make use of a range of formative and summative assessment tools methods and assess combinations of practical, applied, foundational and reflective competencies.

> Assessors must assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience.

> Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated, in an integrated manner.

INTERNATIONAL COMPARABILITY

This qualification was compared with training offered in countries that are acknowledged leaders in the small boat-building industry; countries whose industry suppliers small craft to others. These countries are:

> Malaysia.
> China.
> Turkey.
> Australia.
> New Zealand.
> UK.
> USA.

United States of America:

Several providers of courses in boat building were identified in the USA, however no evidence was found of a national qualification in boat building. Standards for vocational training in boat building have been approved by the US Department of Education. Most courses are short learning programmes on a specific type of boat. The level at which these programmes are presented seems to be very elementary and the contents are well defined. It is deduced that the proposed South African qualifications at level 2 and 3 compares well with most of the learning programmes presented in the USA It is evident that the South African approach will provide for a much more informed learner whilst the opportunity to follow a skills programme based on selected unit standards will allow learners to develop a very specific focused skill as is the USA,

Malaysia:

Malaysia is an emerging boat building country. To date they have not developed a formal national qualification. They have however identified future training objectives and are in the process of developing learning programmes for fibreglass boats.

China:

China *has* a well-established boat building industry but no evidence was found of any formal qualifications in boat building.

Turkey:

The boating industry is in Turkey is well developed. A technical high school, Kurucasile, *on* the Black Sea Coast of Turkey, is devoted to boat building only. This school, in addition to modem techniques, teaches its students, elements and principles of traditional craftsmanship. All the schools and academic institutions, issue diplomas to students who have attended the necessary courses and fulfilled all conditions, including tests and exams. In addition, people attending and successfully finishing the training courses held at various places, such as large yards, and other institutions, are given certificates declaring that the holder has completed a certain program All these diplomas and certificates are valid nationwide. Diplomas issued by large universities (such as the naval architect diplomas issued by most technical universities) are internationally recognized.

Australia:

Australia has a well-established boat-building industry supported by well-defined units of study to be applied by training providers. Their learning programmes in boat building do not seem to follow levels of complexity but rather that of completeness. It is very difficult to compare the South African individual boat building qualifications with those in Australia. However, it seems that once South African learners had completed the FETC in Boat Building, they will be adequately equipped to compete with their Australian counterparts.

New Zealand:

The New Zealand authorities compiled a range of national certificates that can be applied in the boat building industry. Most of these certificates are at level 4 with the exception of one that is registered at level 3. In general the contents of the South African boat building qualifications compares well with the New Zealand boat building qualifications.

United Kingdom:

The United Kingdom is renowned for their boat building expertise and similarly displays a well-thought-out capability to train towards that expertise. The UK has several national registered qualifications, however, it does seem as though many training providers still present their own traditional learning programmes based on years of experience and specific community needs. It is thought that the South African boat building qualifications are much more comprehensive.

Africa in General:

Although many countries in Africa have displayed across the continent the capability to build boats of many shapes and *sizes* it still lacks the capability to build modern boats. No evidence was found of any boat building training being presented in sub-Saharan Africa. The South African qualifications could help to fill that gap on the continent by making these qualifications available to all those countries that might show an interest in these qualifications

ARTICULATION OPTIONS

This Qualificatior articulates with the following proposed and registered Qualifications:

Horizontal articulation:

> FETC: Polymer Composite Fabrication, ID 36153.
> FETC: Airconditioning, Refrigeration and Ventilation, ID **48966.**
> FETC: Welding Application and Practice, ID **24216.**
> FETC: Furniture Making, ID **49092.**

> National Diploma: Master Craftsmanship (Electrical): NQF Level 5, ID 49059.

MODERATION OPTIONS

> Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with an appropriate Education, Training, Quality Assurance (ETQA) Body or with an ETQA that has a Memorandum of Understanding 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 or with an ETQA that has a Memorandum of Understanding with the relevant ETQA. Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQAs policies and guidelines for assessment and moderation.

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

in the Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

for an applicant to register as an assessor, the applicant needs:

> To be registered as an assessor with the relevant ETQA.
> A similar qualification at one level higher than the level of the qualification.

NOTES

The elective unit standard category is open ended to allow the learner to choose the 54 credits associated to the elective unit standards from any discipline that would add value to the purpose of the qualification or the learners own development on a learning pathway within the manufacturing environment

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	7791 Display cultural awareness in dealing with customers and colleagues	Level4	4	Reregistered
Core	10022 Comply with organisational ethics	Level4	4	Reregistered
	13224 Monitor the appliition of safety, health and environmental protection procedures	Level 4	4	Registered
Core	13235 Maintain the quality assurance system	Level 4	5	Registered
Core	13951 Demonstrate knowledge and understanding of the Occupational Health and Safety Act 85 of 1993 (OHSA) (as amended) and the responsibilities of management in terms of the Act	Level 4	4	Registered
Core	120379 Work as a project team member	Level 4	8	Registered
Core	123610 Undertake the maintenance activities required on a small craft	Level 4	6	Draft - Prep for P Comment
Core	123611 Identify and describe engineering design and fluid dynamic principles within hull design and mast and sail shape	Level4	5	Draft - Prep for P Comment
Core	123612 Select and install simple marine systems of a small craft	Level 4	6	Draft - Prep for P Comment
Core	123613 Construct a basic plug utilised in small craft manufacturing	Level4	6	Draft - Prep for P Comment
Core	120380 Evaluate and Improve the project team's performance	Level 5	7	Registered
Elective	116714 Lead a team, plan, allocate and assess their work	Level3	4	Registered
Elective	117877 Perform one-to-one training on the job	Level 3	4	Registered
	7117 Contribute to and improve on the operation of a quality assurance system	Level 4	6	Registered
Elective	7289 Complete a product change over to a polymer preparation process	Level4	30	Registered
Elective	7293 Complete a product change Over to a fibre finishing process	Level 4	30	Registered
Elective	7307 Complete a product change over to polymer manufacturing processes	Level 4	30	Registered
Elective	9905 Change and set tooling	Level 4	16	Reregistered
Elective	12252 Develop and fabricate from complex drawings	Level 4	28	Reregistered
Elective	12253 Cut drill and punch, assemble and mechanically join structural steel work	Level 4	24	Reregistered
Elective	12254 Weld workpieces with the shielded metal arc welding process in all positions	Level 4	25	Reregistered
Elective	13254 Contribute to the implementation and maintenance of business processes	Level 4	10	Registered
Elective	13305 Produce complex components using milling machines	Level 4	29	Registered
Elective	13314 Produce complex components using lathes	Level 4	20	Registered
Elective	14586 Monitor and control quality control practices in a manufacturing/engineering environment	Level 4	8	Registered
Elective	14680 Weld work piece with combination weld processes using shielded metal arc welding and gas tungsten arc welding	Level 4	8	Registered
Elective	14685 Weld pipe using gas metal arc welding process	Level 4	20	Registered
Elective	14692 Weld pipes with combination weld processes using gas tungsten arc welding and gas metal arc welding	Level 4		Registered
Elective	14698 Cut materials using plasma cutting	Level 4	4	Registered
Elective	14709 Weld pipes using shielded metal arc welding process	Level 4	20	Registered
Elective	14710 Manage and develop the performance of work group members in fabrication activities	Level 4	6	Registered
Elective	110009 Manage administration records	Level4	4	Registered

Elective	110283 Fabricate specialised polymer composite parts and complex assemblies	Level 4	28	Registered
Elective	114586 Manage finances of a new venture	Level 4	5	Registered
Elective	114591 Implement an action plan for business operations	Level 4	4	Registered
Elective	114600 Apply innovative thinking to the development of a small business	Level 4	4	Registered
Elective	117167 Produce furniture design finishing specifications	Level4	20	Registered
Elective	117175 Carry out assembly repairs to damaged furniture	Level 4	6	Registered
Elective	117176 Prepare equipment and machines for production	Level 4	6	Registered
Elective	9904 Coordinate work group to produce product	Level 5	8	Reregistered
Elective	10631 Demonstrate an understanding of manufacturing, principles, methodologies and processes	Level 5	7	Reregistered
Elective	12665 Control production and resource scheduling and planning in a manufacturing environment	Level 5	8	Reregistered
Elective	115753 Conduct outcomes-based assessment	Level 5	15	Registered
Elective	117874 Guide learners about their learning, assessment and recognition opportunities	level 5	6	Registered
Fundamental	119457 Interpret and use information from	Level 3	5	Registered
Fundamental	119458 Analyse and respond to a variety of written texts	Level 3	5	Registered
Fundamental	119466 Interpret a variety of literary texts	Level 3	5	Registered
Fundamental	119472 Accommodate audience and context needs in oral/signed communication	Level 3	5	Registered
Fundamental	7468 Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6	Reregistered
Fundamental	9015 Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6	Reregistered
Fundamental	9016 Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 4	4	Reregistered
Fundamental	119459 Write/present/sign for a wide range of contexts	Level 4	5	Registered
Fundamental	119462 Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	5	Registered
Fundamental	119469 Read/view, analyse and respond to a variety of texts	Level 4	5	Registered
Fundamental	119471 Use language and communication in occupational learning programmes	Level 4	5	Registered

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 1

SAQA US ID	*UNIT STANDARD TITLE*		
123610	Undertake the maintenance activities required on a small craft		
SGB NAME		*ORGANISING FIELD ID*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes		6	
UNIT STANDARD TYPE		*ORGANISING FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Manufacturing, Engineering and Technology	Manufacturing and Assembly
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	6	Level 4	Regular

SPECIFIC OUTCOME 1

Determine the necessity for maintenance on small craft and identify the types of maintenance work to be undertaken.

SPECIFIC OUTCOME 2

Identify the parts of a small craft which require maintenance and the installation considerations which allows maintenance work to be performed.

SPECIFIC OUTCOME 3

Undertake trouble-shooting and diagnose a range of faults and breakdowns found on small Craft.

SPECIFIC OUTCOME 4

Conduct basic maintenance work on the hull, deck, superstructure and installed equipment on a small craft.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: **2**

SAQA US ID	***UNIT STANDARD TITLE***		
123611	identify and describe engineering design and fluid dynamic principles within hull design and mast and sail shape		
SGB NAME		***ORGANISING FIELD ID***	***PROVIDER NAME***
SGB Manufacturing and Assembly Processes		6	
UNIT STANDARD TYPE		***ORGANISING FIELD DESCRIPTION***	***SUBFIELD DESCRIPTION***
Regular		Manufacturing, Engineering and Technology	Manufacturing and Assembly
ABET ***BAND***	***CREDITS***	***NQF LEVEL***	***UNIT STANDARD TYPE***
Undefined	***5***	Level 4	Regular

SPECIFIC OUTCOME 1

tdentify and describe fluid dynamic principles and the necessity for professional engineering design in small craft construction.,

SPECIFIC OUTCOME 2

Identify and describe key elements in sail and mast design and construction that influence the design and performance of a small sailing craft.

SPECIFIC OUTCOME 3

Describe how engineering design and tank testing relate to small craft design and construction.

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 3

Select and install simple marine systems of a small craft

SAQA US ID	*UNIT STANDARD TITLE*		
123612	Select and install simple marine systems of a small craft		
SGB NAME		*ORGANISING FIELD ID*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes		6	
UNIT STANDARD TYPE		*ORGANISING FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Manufacturing, Engineering and Technology	Manufacturing and Assembly
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	6	Level 4	Regular

SPECIFIC OUTCOME 1

Select and install simple marine plumbing systems.

SPECIFIC OUTCOME 2

Select and install simple marine steering systems.

SPECIFIC OUTCOME 3

Select and install simple marine electrical systems.

SPECIFIC OUTCOME 4

Select and install simple marine refrigeration systems.

SPECIFIC OUTCOME 5

Select and install simple marine liquid petroleum gas (LPG) systems for small craft.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 4

Construct a basic plug utilised in small craft manufacturing

SAQA US ID	*UNIT STANDARD TITLE*		
123613	Construct a basic plug utilised in small craft manufacturing		
SGB NAME		*ORGANISING FIELD ID*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes		6	
UNIT STANDARD TYPE		*ORGANISING FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Manufacturing, Engineering and Technology	Manufacturing and Assembly
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	6	Level 4	Regular

SPECIFIC OUTCOME 1

Interpret and apply plug drawings.

SPECIFIC OUTCOME 2

Prepare to construct a plug.

SPECIFIC OUTCOME 3

Construct a plug.

SPECIFIC OUTCOME 4

Finish a plug to stage of mould casting.