No. 616 **13 July 2007**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

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

Building Construction

registered by Organising Field 12, Physical Planning and Construction, publishes the following Qualification and Unit Standards for public comment.

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

Comment on the Qualification and Unit Standards should reach SAQA at the address below and ***no later 13 August 2007.*** All correspondence should be marked **Standards Setting – Building Construction** addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
Further Education and Training Certificate: Plumbing

SAQA QUAL ID	*QUALIFICATION TITLE*		
58782	Further Education and Training Certificate: Plumbing		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
QUALIFICATION TYPE	*FIELD*	*SUBFIELD*	
Further Ed and Training Cert	12 - Physical Planning and Construction	Physical Planning, Design and Management	
ABET BAND	*MINIMUM CREDITS*	*NQF LEVEL*	*QUAL CLASS*
Undefined	190	Level 4	Regular-Unit Stds Based

PURPOSE OF THE QUALIFICATION
Purpose:

Qualifying learners will be able to integrate their knowledge, understanding and competencies related to occupational health and safety, National Building Regulations and industry codes of practice to perform a range of plumbing activities.

The achievement of this qualification will contribute to the development of those learners who have not had the benefit of formal education and training in that it provides formal recognition for knowledge and skills acquired through extensive workplace experience. Learners who have achieved this qualification will be able to access further learning opportunities and enhance their prospects for sustainable employment within the construction industry. For new entrants, this Qualification describes the learning outcomes required to participate effectively in a structured work environment. Employers will be able to use this Qualification as the source for identifying skills needs and appropriate training interventions. Providers of education and training will be able to use this Qualification in the design and development of appropriate outcomes based learning materials, assessment guides and related assessment tools. Completion of this qualification relates to the Organising Framework for Occupations (OFO) in that it reflects the competencies of occupational designation 334101 Plumber (General).

Qualifying learners will be able to:

- Identify and solve problems with practical mathematical applications.
- Communicate in verbal or written form with peers, members of supervisory/management levels and others.
- Apply understanding of the functioning of plumbing systems to install, test and maintain them in a built environment.
- Apply fault finding techniques to diagnose and repair installed plumbing systems.

Rationale:

As a result of past legacies, many practitioners within the building construction sector were denied career advancement and possible recognition as qualified tradesmen. This was as a direct result of poor educational opportunities at some schools, leading to a lack of entry to formal training institutions. This National Certificate in Plumbing based on unit standards allows learners to reach their full potential of advancement without formal education becoming an impassable barrier and in addition, allow for the recognition of prior learning.

This Qualification represents a planned combination of learning outcomes with a defined purpose in that they consist of the essential embedded knowledge and applied competence required by the plumbing trade of those learners who seek to be recognised by the trade for formal certification and registration as a Plumber.

There is a high demand for learners who are able to apply their skills within the parameters of the legislative framework regulating the plumbing trade and formal recognition at this level is beneficial to learners, the industry and society in the order of sustainable employment, increased productivity levels and the health and safety of communities.

This Qualification is accessible to learners who are employed within the Construction Industry, new entrants into the world of work and persons who are unemployed. There is no gender, ethnic or other bias towards learners who wish to enter this qualification.

Learners who wish to enter this Qualification are assumed to have the equivalent competencies reflected as Learning Assumed to be in Place in the individual unit standards that make up this Qualification. The fundamental competencies in this qualification correspond with those found in other trades at NQF Level 4 to ensure portability of credits between other trade qualifications at this level. This qualification may be achieved through any of the (four) routes, which includes apprenticeship, learnership, internship, RPL. To successfully complete this qualification, the learner must spend a minimum time in the workplace (competent in sets of skills) linked to notional hours and will be completed in this qualification over a two years.

Wide stakeholder participation in the development of this Qualification has ensured that the learning outcomes are relevant to national and industry skills development needs and learners will be able to transfer their credits from one learning institution and/or employer to another. The development and guidance of learners is facilitated by persons who have achieved the level of qualification recognised by the industry for certification and registration as a Plumber.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
- National Certificate: Plumbing L2 (or equivalent)
- Mathematical literacy at NQF Level 3.
- Communication at NQF Level 3.

Recognition of Prior Learning:

Pre-assessments in both the Fundamental and Core areas of learning associated with this qualification will be conducted on learners prior to entry into the qualification. Successful demonstration of competence against all criteria contained in unit standards, against which prior learning is measured, will culminate in the award of credits to the learner. Learners' will not be required to repeat learning in those areas where prior learning is recognised and accredited.

The Recognition of Prior Learning process will also be applied where learners', who have achieved this Qualification, wish to continue their further learning and enter other trades at Level 4.

Access to the Qualification:

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

QUALIFICATION RULES
The qualification is made up of a combination of learning outcomes from Fundamental, Core and Elective components, totalling 190 credits.

Fundamental component - It consists of:
• Unit Standards at level 4 totalling 20 credits in Communication in a first South African language;
• Unit Standards at level 3 totalling 20 credits in Communication in a second South African language;
• Unit Standards at level 4 totalling 16 credits in Mathematical Literacy.
NB: It is compulsory for learners to be competent in two South African languages, the first at level 4 and the second at level 3. The completion of all these unit standards is compulsory.

Core Component - It is made up of unit standards totalling 114. All unit standards in this section are compulsory.

Elective component - There are 107 credits in this component. The learners is expected to choose a minimum of 20 credits from the Elective to achieve a minimum total credits of 190 in order to be awarded this qualification.

EXIT LEVEL OUTCOMES
1. Identify and solve problems with practical mathematical applications.

2. Communicate in verbal or written form with peers, members of supervisory/management levels and other relevant role-players.

3. Apply understanding of the functioning of plumbing systems to install, test and maintain them in a built environment.

4. Apply fault - finding techniques to diagnose and repair installed plumbing systems.

Critical Cross-Field Outcomes:

This qualification promotes, in particular, the following critical cross-field outcomes:

• Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made when:
o Identifying and developing component shapes for a plumbing activity.
o Obtaining information where instructions or information on drawings is insufficient.
o Identifying and pro-actively reporting on non-availability of resources and materials.

• Working effectively with others as a member of a team, group, organisation, and community during:
o Activities involving clients, co-workers and other trades on site.
o Communicating and receiving advice from supervisor.

• Organising and managing oneself and one's activities responsibly and effectively when:
o Setting out the work area and preparing to fabricate and install components.
o Performing activities in accordance with industry standards.
o Selecting plumbing tools and equipment in accordance with the requirements of the task.
o Ensuring tools, equipment and plumbing materials are securely stored.
o Maintaining minimum quantities of plumbing materials in accordance with task requirements.
o Safety equipment and clothing is selected and prepared in accordance with legislative requirements.

• Collecting, analysing, organising and critically evaluating information to better understand and explain by:
o Carrying out written site instructions issued by the client, correctly and efficiently.

o Correctly interpreting information contained in drawings.
o Setting out work areas from provided control positions and levels in accordance with instructions and drawings.

• Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion when:
o Issuing clear verbal instructions to team members.
o Actively listening to feedback received from team members.
o Evaluating and reporting problem situations to the client.

• Using science and technology effectively and critically, showing responsibility towards the environment and health of others when:
o Applying the appropriate tools and materials for different plumbing activities.

• Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation when:
o Applying the inter-relatedness of the fabrication and installation of components to plumbing systems.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

1.1 Plumbing problems are identified utilising mathematical principles to determine requirements.
1.2 Mathematical principles and techniques are used to solve problems related to personal and business contexts.
o Range: General and personal finance, statistics and probability, other practical applications such as monitoring, building.
1.3 Mathematical principles and techniques are applied while performing tasks in the plumbing context in respect of calculations.
o Range: Plumbing calculations, geometric shapes applied to design of structures, mass, volume, temperature, pressure.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 Verbal communication is used in the interaction with other role players in the plumbing process to determine and understand the extent of plumbing requirements and implement plumbing applications and giving and getting feedback.
2.2 Written communication is used in order to understand, evaluate and report on plumbing problems.
2.3 Technical reading skills are applied in order to understand plumbing regulations and task specifications.
2.4 Technical writing skills are applied in order to record plumbing activities and pass instructions.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 A working knowledge of the functioning of plumbing systems is demonstrated in accordance with Regulations.
3.2 Plumbing systems are installed in accordance with South African National Standards (SANS) standards and codes and manufacturers specifications.
3.3 Plumbing systems are tested in accordance with SANS standards and codes and manufacturers specifications.
3.4 Plumbing systems are maintained in accordance with SANS standards and codes and manufacturers specifications.

Associated Assessment Criteria for Exit Level Outcome 4:

4.1 Faultfinding techniques are applied to establish the cause of plumbing systems not functioning.
4.2 Building drawings are used to understand plumbing systems and trace the causes of problems.
4.3 The cause of the problem is identified in order for the appropriate remedies to be applied or recommended.
4.4 Inspection and testing is conducted to ensure that the plumbing systems have been restored and the cause of the problem rectified.
4.5 Plumbing tools and equipment are maintained in accordance with the relevant maintenance policy.
4.6 Work is completed in accordance with the relevant occupational health and safety, environmental, quality assurance and other requirements.
4.7 Cooperation with fellow workers and other personnel (teamwork) is effective and constructive to ensure the achievement of work objectives.
4.8 Work is planned, scheduled and evaluated in accordance with the relevant procedures and standards.

Integrated Assessment:

The Qualification will be awarded to learners who are able to successfully demonstrate competence, in a practical context, against all the specific outcomes contained in all unit standards and their associated assessment criteria, embedded knowledge (theory) and critical cross-field outcomes (generic abilities).

Integrated assessment practices are achieved through the design and development of assessment activities that make use of a variety of assessment methods and tools that measure not only the learner's knowledge and ability to perform practical tasks and activities within a familiar context, but which also challenge learners to demonstrate their ability to deal with problem situations that might or can arise in the workplace from time and which require learners' to demonstrate their ability to adapt their performance to meet the requirements of changed circumstances and to reflect on what they are doing and why.

Summative assessment consists of knowledge tests combined with assignments, case studies and practical demonstrations.

The assessment methods and instruments used to assess learners in the context of this qualification can be applied to the assessment process for Recognition of Prior Learning. A holistic approach is applied when RPL assessments are conducted and include methods and tools that allow for evidence to be gathered from sources located within the broader context where the learner's knowledge and skills have been acquired over a period of time. These assessment methods and tools include assessments of the learner conducted by peers or superiors, certificates of attendance for short courses or panel assessments.

To achieve this qualification and become a registered artisan plumber, the learner has to complete and be found competent in a final trade test moderated by the appropriate Quality Assurance Body.

INTERNATIONAL COMPARABILITY

An extensive Internet search was conducted to compare the revised NQF Level 4 qualification with international plumbing qualifications, particularly within 'developing world' nations. The key phrases of this search included 'plumber training' and 'plumbing apprenticeship'. The names of 'developing world' countries include Namibia, Nigeria, India and Jamaica were then suffixed to these keyword phrases in order to undertake a more targeted search. The developed countries include United Kingdom, Canada and Australia.

Namibia:

Namibia appears to be embarked on a quite radical reform of its VET system. This reflects growing acceptance of the weaknesses of the system as it has evolved to date and a concern to better focus the system on meeting the needs of socio-economic development. The weaknesses of the system have been well documented in a series of reports. There is limited employer involvement in training. There has been insufficient relevance to both the needs of the formal and informal economies and to economic and social development. Curriculum has been slow to change and the quality of delivery has been uneven. The system has remained small and costly; yet centralisation has been very strong. There appears to be a skills shortage already and plans for future economic development are likely to improve this. The system is faced with a dual challenge of better supporting both growth and poverty reduction strategies.

Nigeria:

As a result of shortage of skilled craftsmen and expert plumbers, Nigerian builders are now looking beyond the shores of the country and this has been giving industry practitioners sleepless nights. Besides the persistence of poor quality jobs, projects are being delayed and in some cases stalled. Also, construction costs are escalating and investors are beginning to have a rethink over the real estate development business. Observers have attributed the trend to the economic downturn, lack of sustained manpower development initiative and the emergence of a rather more attractive vocation to the craftsmen. Left with no other choice, developers are now importing skilled plumbers from neighboring countries.

India:

In India two bodies - the Central Apprenticeship Council (CAC), a statutory body and the National Council of Vocational Training (NCVT), a non-statutory body - operate as advisory institutions. The most important NCVT functions involve: establishing and awarding National Trade Certificates in engineering and non-engineering trades, prescribing standards for syllabi, equipment, space, duration of courses and methods of training; arranging trade tests and laying down standards of proficiency required for the National Trade Certificate; recognition of training institutions for the purposes of issuing National Trade Certificates and laying down conditions for such recognition. The State Councils for Vocational Training (SCVTs), as well as Trade Committees have been established to assist the NCVT. They advise the state government on training policy matters and are supposed to co-ordinate vocational training in each state.

Coming to curriculum, vocational training devotes 70 per cent of time to practical instruction while the rest is theory. The Central Staff Training and Research Institute (CSTARI) at Kolkata is responsible for preparation of draft curricula and their revision from time to time. The DGET's Curriculum Development Section coordinates this work. It scrutinises draft curricula and obtains approval of the NCVT. The periodicity of revisions depends on the technological changes taking place in industry in each trade. Generally, the introduction or revision of curriculum is based on recommendations made by NCVT. This should be done in consultation with relevant trade committees whose members are drawn from industry, technical institutions and DGET institutes.

The reality however, all of the above is how things should be. In reality, most curricula 'followed' at institutes imparting vocational training have little relevance for wage or self-employment of the trainees. Plumbing courses which have been running for the past five decades continue to be taught irrespective of the market demand for plumbers in the region.

Jamaica:

The Jamaican Qualification Framework gives information pertaining to unit competencies within a qualification plan that may fit your work area or skill area training needs.

All core unit standards must be completed in order to be certified along with the required number of electives.

Core:

Competency Description; Level; Hours; Code:

- Assemble pipes and fittings for clients; Level 1; 40 Hours; MEMASY0071A.
- Perform related Computations-Basic; Level 1; 20 Hours; MEMCOR0051A.
- Mark off/out (Genral Engineering); Level 1; 10 Hours; MEMCOR0081A.
- Draw and interpret sketches and simple drawings; Level 1; 20 Hours; MEMCOR0091A.
- Use power tools; Level 1; 15 Hours; MEMCOR0111A.
- Classify engineering materials - (Basic); Level 1; 30 Hours; MEMCOR0121A.
- Undertake interactive workplace communication; Level 1; 20 Hours; MEMCOR0131A.
- Follow principles of (Oh&S) in work environment; Level 1; 20 Hours; MEMCOR0141A.
- Plan to undertake a routine task; Level 1; 10 Hours; MEMCOR0161A.
- Use hand tools; Level 1; 5 Hours; MEMCOR0191A.
- Carry out mechanical cutting operations - (Basic); Level 1; Hours; 10 Hours; MEMFAB0041A.
- Perform brazing and/or silver soldering; Level 1; 40 Hours; MEMFAB0051A.
- Install and maintain piping and tubing; Level 1; Hours; 40 Hours; MEMINS0041A.
- Prepare for piping and tubing installation; Level 1; 20 Hours; MEMINS0061A.
- Perform manual handling and lifting; Level 1; 5 Hours; MEMMAH0071A.
- Perform Housekeeping Duties; Level 1; 10 Hours; MEMMAH0081A.
- Use workshop machines for basic operations; Level 1; 20 Hours; MEMMPO0081A.
- Plan a complete activity; Level 2; 5 Hours; MEMCOR0012A.
- Perform related romputations; Level 2; 20 Hours; MEMCOR0022A.
- Interpret standard specifications and manuals; Level 2; 5 Hours; MEMCOR0042A.
- Operate in an autonomous team environment; Level 2; 5 Hours; MEMCOR0052A.
- Write technical reports (Basic); Level 2; 40 Hours; MEMCOR0122A.
- Install valves, regulators and metering devices; Level 2; 15 Hours; MEMINS0182A.
- Roughing-in customer's pipe-work install pipe-work; Level 2; 15 Hours; MEMINS0192A.
- Install plumbing fixtures; Level 2; 15 Hours; MEMINS0202A.
- Install plumbing equipment; Level 2; 15 Hours; MEMINS0212A.
- Install auxiliary equipment; Level 2; 15 Hours; MEMINS0222A.
- Prepare materials and locations for installing drains and waste systems; Level 2; 15 Hours; MEMINS0232A.
- Position, join and secure pipes & components to provide drains & waste systems; Level 2; 15 Hours; MEMINS0242A.
- Carry out routine maintenance of plumbing systems to systems to sustain effectiveness; Level 2; 20 Hours; MEMMRD0462A.

Elective:

Competency Description; Level; Hours; Code:

- Prepare for demolition process; Level 1; 40 Hours; BCGCOR0171A.
- Carry out data entry and retrieval procedures; Level 1; 40 Hours; ITICOR0011A.
- Prepare basic engineering drawing; Level 1; 30 Hours; MEMCOR0101A.
- Perform manual heating, and thermal cutting; Level 1; 20 Hours; MEMFAB0061A.
- Undertake fabrication, forming, bending and shaping - (Basic); Level 1; 40 Hours; MEMFAB0071A.
- Weld using oxyacetylene welding process (Oaw)-fuel gas welding; Level 1; 50 Hours; MEMFAB0121A.
- Prepare surfaces; Level 2; 40 Hours; BCGCOR0212A.

- Carry out concrete work; Level 2; 40 Hours; BCGMAS0292A.
- Craft personal entrepreneurial strategy; Level 2; 50 Hours; BSBSBM0012A.
- Attend to breakdown; Level 2; 20 Hours; MEMCOR0062A.
- Perform advanced welding using oxyacetylene welding process (Oaw); Level 2; 40 Hours; MEMFAB0072A.
- Order materials; Level 2; 20 Hours; MEMMAH0042A.
- Shut down/isolate machines/equipment; Level 2; 20 Hours; MEMMRD0072A.
- Perform inspection (Basic); Level 2; 20 Hours; MEMQUA0012A.
- Assembly pipes, storage and main distribution systems; Level 3; 40 Hours; MEMASY0023A.
- Install and maintain storage and main distribution systems; Level 3; 40 Hours; MEMINS0043A.
- Purchase materials; Level 3; 20 Hours; MEMMAH0073A.
- Maintain the effective operation of storage and distribution systems; Level 3; 40 Hours; MEMMRD0343A.

Learners that feel that they have some experience in certain areas, the training institution will help them to assess and measure the quality of the skills and knowledge that they have already.

A career counsellor will advise them on how to close the gap between what they have and what they need, and will show them how they can build on what they already have.

After they have demonstrated competence at a level that meets the requirement of 'good quality work', they will be recommended for the National Vocational Qualification of Jamaica (NVQ-J) at the level at which they have been assessed.

The skills knowledge and experience that they already have might just be good enough to earn them a certificate to move to the next stage of their journey to employability and to a bright future.

Canada:

In Canada there are various models for delivery of apprenticeship training. Some programs are delivered using the traditional model which involves an individual spending their first year of training in-school, followed by practical time of approximately 1800 hours on-the-job supplemented by a 6 to 8-week in-school period each year of the apprenticeship term which, for the majority of occupations, is four years. Other models of delivery designed to provide quality, accessibility and transferability include Internship model.

England:

In England they have developed a suite of Qualifications for plumbers of all specialities. These include:

- Level 2 Certificate in basic Plumbing studies.

This provides the learner with the knowledge and understanding needed to complete a Level 2 NVQ. They will learn about key plumbing principles and the theory of areas such as hot and cold water systems, sanitation systems, central heating systems (pipe work), and electrical supply and safety. Assessment is via multiple choice examination and practical tests. A total of 495 learning hours are recommended for this award.

- Level 2 NVQ in Plumbing.

Candidates will need to demonstrate their competence in six mandatory areas:

- Maintaining a safe working environment.

- Maintaining effective working relationships.
- Contributing to improvement of the work environment.
- Install non-complex plumbing systems and components.
- Decommission non-complex plumbing systems.
- Maintain non-complex plumbing systems and components.

- Level 3 Certificate in Plumbing Studies.

This provides the learner with the knowledge and understanding needed to complete the Level 3 NVQ. They will learn about systems planning, complex cold water, domestic hot water and sanitation systems, central heating systems, domestic gas supply systems and improving business products and services. Assessment is by multiple choice question papers and practical tasks.

- Level 3 NVQ in Plumbing.

Candidates will need to demonstrate their competencies in the first two units of the Level 2 NVQ plus:

- Contribute to the improvement plumbing products and services.
- Plan complex domestic plumbing work activities.
- Install complex domestic plumbing systems.
- Commission and decommission complex domestic plumbing systems.
- Service and maintain complex domestic plumbing systems and components.

Learners can articulate horizontally through Levels 2 and 3 NVQ Heating and Ventilating, Levels 2 and 3 in Domestic Natural Gas Installation and Maintenance and Levels 2 and 3 Technical Studies.

Learners are also able to articulate vertically through Levels 3 and 4 Introductory Award for Owner Managers.

Australia:

Qualification Structure and Rules:

To be awarded the Certificate III in Plumbing qualification, candidates must achieve a minimum of four of the following plumbing streams:

- Stream 1 - Water (Mandatory).
- Stream 2 - Sanitary.
- Stream 3 - Drainage.
- Stream 4 - Mechanical Services.
- Stream 5 - Roofing.
- Stream 6 - Gas Services.

Individual competency units gained in one qualification or sub-sector stream may also be used as a credit for any other qualification or sub-sector in which the unit is listed in the table as either a core or elective.

The rules for each of these individual streams are shown in the following pages:

- Plumbing Stream 1 - Water. This is a mandatory requirement. To obtain this stream all twenty-four (24) core competency units and six (6) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPCM2001A; Work effectively in the plumbing and services sector.
- BCPCM2002A; Carry out interactive workplace communication.
- BCPCM2003A; Carry out OH&S requirements.
- BCPCM2004A; Read plans and calculate plumbing quantities.
- BCPCM2005A; Handle and store plumbing materials.
- BCPCM2006A; Use plumbing hand and power tools.
- BCPCM2007A; Carry out levelling.
- BCPCM2010A; Mark out materials.
- BCPCM2011A; Apply first aid in the workplace.
- BCPCM2012A; Weld using oxy-acetylene equipment.
- BCPCM2013A; Weld using arc welding equipment.
- BCPCM3001A; Flash penetrations through roofs and walls.
- BCPCM3002A; Weld polyethylene (PE) pipe using fusion method.
- BCPCM3003A; Fabricate and install non-ferrous pressure piping.
- BCPFS3001A; Fabricate and install fire hydrant and hose reel systems.
- BCPFS3007A; Install domestic and residential life safety sprinkler systems.
- BCPRF2001A; Work safely on roofs.
- BCPWT3001A; Set out and install water services.
- BCPWT3002A; Install and adjust water service controls and devices.
- BCPWT3003A; Install and commission water heating systems.
- BCPWT3005A; Install water pump sets.
- BCPWT3006A; Fit off and commission hot and cold water services.
- BCPWT3007A; Connect irrigation systems from drinking water supply.
- BCGCO2003B; Carry out concreting to simple forms.

Elective:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPFS2001A; Connect static storage tanks.
- BCPFS2002A; Install portable fire equipment.
- BCPFS3003A; Fit off sprinkler heads, controls and ancillary equipment.
- BCPFS3004A; Install control valve assemblies, actuating devices and local alarms.
- BCPFS3008A; Test and maintain fire hydrant and hose reel installations.
- BCPIG2001A; Design domestic urban irrigation systems.
- BCPIG3001A; Set out, install and commission irrigation systems.
- BCPIG3002A; Install and commission domestic irrigation pumps.
- BCPMS3001A; Fabricate and install steel pressure piping.
- BCPMS3002A; Select and fit insulation and sheathing.
- BCPMS3003A; Install small bore heating systems.
- BCPMS3010A; Install and maintain evaporative air cooling systems.
- BCPRF2003A; Collect and store roof water.
- BCPWT3004A; Install domestic water treatment equipment.
- BCPWT3008A; Install water service.
- BCCPL3001B; Install water mains pipelines.
- BCF2009A; Carry out load slinging of off-site materials.
- BCGCM2003B; Install trench support.
- BCGCM2008B; Erect and dismantle restricted height scaffolding.
- BCGCM3001B; Operate elevated work platforms.

- BCGRI3001B; Operate personnel and materials hoists.
- BCGWC3006B; Install acoustic and thermal environmental protection systems.
- MEM5.49AA; Perform routine gas tungsten arc welding.
- MEM5.50AA; Perform routine gas metal arc welding.
- RTE3605A; Troubleshoot faults and blockages in irrigation systems.

Plumbing Stream 2 - Sanitary. To obtain this stream all six (6) core competency units and four (4) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPDR2001A; Locate and clear blockages.
- BCPSN3001A; Plan the layout for a residential sanitary plumbing system.
- BCPSN3002A; Install discharge pipes.
- BCPSN3003A; Fabricate and install sanitary stacks.
- BCPSN3004A; Install and fit off sanitary fixtures.

Elective:

Unit Number; Title:

- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPDR2002A; Install domestic treatment plants.
- BCPDR2003A; Maintain effluent disinfection system.
- BCPDR2004A; Install stormwater and sub-soil drainage systems.
- BCPDR2005A; Drain worksite.
- BCPDR2006A; Install pre-fabricated inspection openings and enclosures.
- BCPDR3002A; Install below ground sanitary drainage systems.
- BCPDR3003A; Install on-site disposal systems.
- BCPMS3002A; Select and fit insulation and sheathing.
- BCPSN3005A; Install pre-treatment facilities.
- BCPSN3006A; Install sewerage pump sets
- BCF2009A; Carry out load slinging of off-site materials.
- BCGCM2003B; Install trench support.
- BCGCM2008B; Erect and dismantle restricted height scaffolding.
- BCGCM3001B; Operate elevated work platforms.
- BCGRI3001B; Operate personnel and material hoists.
- BCGWC3006B; Install acoustic and thermal environmental protection systems.

Plumbing Stream 3 - Drainage. To obtain this stream all nine (9) core competency units and three (3) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPDR2001A; Locate and clear blockages.
- BCPDR2002A; Install domestic treatment plants.
- BCPDR2004A; Install stormwater and sub-soil drainage systems.
- BCPDR2005A; Drain worksite.
- BCPDR2006A; Install pre-fabricated inspection openings and enclosures.
- BCPDR3001A; Plan the layout for a residential sanitary drainage system.

- BCPDR3002A; Install below ground sanitary drainage systems.
- BCPDR3003A; Install on-site disposal systems.
- BCGCM2003B; Install trench support.

Elective:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPDR2003A; Maintain effluent disinfection systems.
- BCPSN3005A; Install pre-treatment facilities.
- BCCPL3001B; Install water mains pipelines.
- BCF2009A; Carry out load slinging of off-site materials.

Plumbing Stream 4 - Mechanical Services. To obtain this stream all four (4) core competency units and eleven (11) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPMS2001A; Assemble mechanical services components.
- BCPMS3001A; Fabricate and install steel pressure piping.
- BCPMS3003A; Install small bore heating systems.

Elective:

Unit Number; Title:

- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPMS3002A; Select and fit insulation and sheathing.
- BCPMS3004A; Install medical gas pipeline systems.
- BCPMS3005A; Install and test ducting systems.
- BCPMS3006A; Install air handling units.
- BCPMS3007A; Install split system air conditioning.
- BCPMS3008A; Install air conditioning control equipment.
- BCPMS3009A; Maintain mechanical services equipment.
- BCPMS3010A; Install and maintain evaporative air cooling systems.
- BCPRF3003A; Fabricate and install external flashings.
- BCF2009A; Carry out load slinging of off-site materials.
- BCGCM2003B; Install trench support.
- BCGCM2008B; Erect and dismantle restricted height scaffolding.
- BCGCM3001B; Operate elevated work platforms.
- BCGRI3001B; Operate personnel and material hoists.
- BCGWC3006B; Install acoustic and thermal environmental protection systems.
- MEM5.49AA; Perform routine gas tungsten arc welding.
- MEM5.50AA; Perform routine gas metal arc welding.
- MEM10.9AA; Install refrigeration and air conditioning plant and equipment.
- MEM10.10AA; Install pipework and pipework assemblies.
- MEM18.86AA; Test, evacuate and charge refrigeration systems.

Plumbing Stream 5 - Roofing. To obtain this stream all nine (9) core competency units and four (4) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPRF2002A; Select and install roof sheeting and wall cladding.
- BCPRF2003A; Collect and store roof water.
- BCPRF3001A; Receive roofing materials.
- BCPRF3002A; Fabricate and install roof drainage components.
- BCPRF3003A; Fabricate and install external flashings.
- BCPRF3004A; Install roof components.
- BCPRF3005A; Install roof coverings to curved roof structures.
- BCPRF3006A; Install composite roof systems.

Elective:

Unit Number; Title:

- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPRF2004A; Fabricate roof coverings for curved structures.
- BCF2009A; Carry out load slinging of off-site materials.
- BCGCM2003B; Install trench support.
- BCGCM2008B; Erect and dismantle restricted height scaffolding.
- BCGCM3001B; Operate elevated work platforms.
- BCGRI3001B; Operate personnel and material hoists.
- BCGWC3006B; Install acoustic and thermal environmental protection systems.
- MEM5.49AA; Perform routine gas tungsten arc welding.
- MEM5.50AA; Perform routine gas metal arc welding.

Plumbing Stream 6 - Gas Services. To obtain this stream all twelve (12) core competency units and five (5) elective competency units from the following table must be achieved:

Core:

Unit Number; Title:

- BCPCM2008A; Cut and join sheet metal.
- BCPGS3001A; Install gas piping systems.
- BCPGS3002A; Size consumer piping systems.
- BCPGS3003A; Install and commission Type A gas appliances.
- BCPGS3004A; Install LP gas storage of aggregate storage capacity up to 500 litres.
- BCPGS3006A; Install LP gas systems in caravans/mobile homes, watercraft and mobile work places.
- BCPGS3007A; Install gas detection devices.
- BCPGS3008A; Install gas pressure control equipment.
- BCPGS3009A; Install a Type A appliance flue.
- BCPGS3011A; Purge consumer piping.
- BCPGS3013A; Disconnect and reconnect Type A appliances.
- BCPGS3014A; Calculate and install natural ventilation for Type A gas appliances.

Elective:

Unit Number; Title:

- BCPCM2009A; Cut with oxy-LPG acetylene.
- BCPGS3005A; Install LP gas storage of aggregate capacity exceeding 500 litres and less than 8KL.
- BCPGS3010A; Install a Type B appliance flue.
- BCPGS3012A; Maintain Type A gas appliances.
- BCPGS3015A; Install subsidiary gas meters.
- BCPMS2001A; Assemble mechanical services components.
- BCPMS3001A; Fabricate and install steel pressure piping.
- BCPMS3003A; Install small bore heating systems.
- BCPMS3005A; Install and test ducting systems.
- BCPMS3006A; Install air handling units.
- BCF2009A; Carry out load slinging of off-site materials.
- BCGCM2003B; Install trench support.
- BCGCM2008B; Erect and dismantle restricted height scaffolding.
- BCGCM3001B; Operate elevated work platforms.
- BCGRI3001B; Operate personnel and material hoists.
- MEM5.49AA; Perform routine gas tungsten arc welding.
- MEM5.50AA; Perform routine gas metal arc welding.

A comprehensive comparison between the South African NC in construction plumbing NQF Level 3 and the Australian Certificate III in Plumbing. The research was aided by a presentation by a delegate from the Australian plumbing industry. The findings of this comparison were that the two qualifications were very similar in the core unit standards with an exception of two competencies; these were basic electricity and basic welding. These were integrated into the unit standards with which they were directly associated. With regards to the elective unit standards, plumbers in South Africa do not perform some of the tasks stipulated in the Australian model. These unit standards were identified and put aside.

ARTICULATION OPTIONS

This qualification has been developed for mobility across similar trades within the industry and is intended to allow for further learning towards supervisory and management qualifications within this and other sectors.

This Qualification articulates horizontally with the following registered qualification(s):

- ID 24194: Further Education and Training Certificate: Construction Material Manufacturing, NQF Level 4.
- ID 50018: Further Education and Training Certificate: Computer Aided Drawing Office Practice, NQF Level 4.
- ID 48817: Further Education and Training Certificate: Construction Materials Testing, NQF Level 4.
- ID 49053: Further Education and Training Certificate: Supervision of Construction Processes, NQF Level 4.

This Qualification articulates vertically with the following registered learning programmes:

- ID 23683: National Diploma: Management of Civil Engineering Construction Processes, NQF Level 5.
- ID 48636: National Diploma: Structural Steelwork Detailing, NQF Level 5.
- ID 23675: National Certificate: Management of Building Construction Processes, NQF Level 5.
- National Certificate: Water Care, NQF Level 5.

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, and

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 ETQA's 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:

• Well-developed interpersonal skills, subject matter and assessment experience.
• To be competent in the planning and conducting assessment of learning outcomes as described in the unit standards Conduct Outcomes-based assessment at NQF Level 5.
• Well-developed subject matter expertise within Plumbing.
• Competent in the exit level outcomes of the FETC: Plumbing Level 4.
• To be registered with the relevant Education and Training Quality Assurance Body.
• Detailed documentary proof of educational qualification, practical training undergone, and experience gained by the applicant must be provided (Portfolio of evidence). Assessment competencies and subject matter experience of the assessor can be established by recognition of prior learning.

NOTES

Note on artisan registration:

To be registered as an artisan the learner must:

• Register as a learner in one of the four routes with a registered employer.
• Successfully complete the relevant qualification or its equivalent.
• Successfully complete the practical competencies laid down for the specific artisan.
• Successfully pass the Trade Test.
• Comply with the registration procedures for an artisan as determined by the Department of Labour procedure.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	116534	Carry out basic first aid treatment in the workplace	Level 3	2
Core	242692	Install access equipment for construction work	Level 3	6
Core	14580	Read and interpret construction drawings and specifications	Level 3	10
Core	242821	Identify responsibilities of a team leader in ensuring that organisational standards are met	Level 4	6
Core	244502	Install and maintain soil, waste and vent pipe systems	Level 4	12
Core	244492	Install, maintain and repair sanitaryware appliances	Level 4	12
Core	244495	Install, maintain and test Rainwater Systems	Level 4	12
Core	244498	Install, maintain and test below ground drainage systems	Level 4	12
Core	244507	Install, maintain and test cold water supply systems	Level 4	12
Core	244496	Install, maintain and test hot water supply systems	Level 4	12
Core	13224	Monitor the application of safety, health and environmental protection procedures	Level 4	4
Core	244497	Perform building works	Level 4	8
Core	244493	Procure resources for construction works	Level 4	6

Source: National Learners' Records Database Qualification 58782 06/07/2007 Page 15

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	9973	Apply basic business concepts	Level 3	8
Elective	114946	Identify causes of stress and techniques to manage it in the workplace	Level 3	2
Elective	244491	Fabricate and install sheet metal components	Level 4	8
Elective	244499	Install and maintain solar water heating systems	Level 4	12
Elective	244500	Install specialised hospital sanitaryware systems	Level 4	12
Elective	114589	Manage time productively	Level 4	4
Elective	7997	Managing self-development	Level 4	12
Elective	244494	Perform specialised fault-finding and repairs to plumbing systems	Level 4	12
Elective	15234	Apply efficient time management to the work of a department/division/section	Level 5	4
Elective	15237	Build teams to meet set goals and objectives	Level 5	3
Elective	7876	Conduct on-the-Job-Training	Level 5	8
Elective	115753	Conduct outcomes-based assessment	Level 5	15
Elective	15224	Empower team members through recognising strengths, encouraging participation in decision making and delegating tasks	Level 5	4
Elective	11994	Monitor, reflect and improve on own performance	Level 5	3
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6
Fundamental	119462	Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	5
Fundamental	119469	Read/view, analyse and respond to a variety of texts	Level 4	5
Fundamental	9016	Represent analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts	Level 4	4
Fundamental	119471	Use language and communication in occupational learning programmes	Level 4	5
Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6
Fundamental	119459	Write/present/sign for a wide range of contexts	Level 4	5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Fabricate and install sheet metal components

SAQA US ID	*UNIT STANDARD TITLE*		
244491	Fabricate and install sheet metal components		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Physical Planning, Design and Management	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	8

SPECIFIC OUTCOME 1
Plan and prepare to perform sheet metal component fabrication and installation.

SPECIFIC OUTCOME 2
Develops sheet metal shapes.

SPECIFIC OUTCOME 3
Fabricate sheet metal components.

SPECIFIC OUTCOME 4
Install fabricated sheet metal components.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install, maintain and test cold water supply systems

SAQA US ID	*UNIT STANDARD TITLE*		
244507	Install, maintain and test cold water supply systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install, maintain and test cold water supply systems.

SPECIFIC OUTCOME 2
Install cold water pipes and pipe fittings.

SPECIFIC OUTCOME 3
Test cold water supply systems.

SPECIFIC OUTCOME 4
Maintain and repair cold water pipes and fittings.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install and maintain soil, waste and vent pipe systems

SAQA US ID	*UNIT STANDARD TITLE*		
244502	Install and maintain soil, waste and vent pipe systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install and maintain soil, waste and vent pipe systems.

SPECIFIC OUTCOME 2
Install a one-pipe soil pipe system vents.

SPECIFIC OUTCOME 3
Install a single stack soil pipe system.

SPECIFIC OUTCOME 4
Maintain and repair above ground soil, waste and vent systems.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install specialised hospital sanitaryware systems

SAQA US ID	*UNIT STANDARD TITLE*		
244500	Install specialised hospital sanitaryware systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to perform specialised hospital sanitary system installations.

SPECIFIC OUTCOME 2
Install and maintain waste water, soil and vent systems for bio-hazardous effluent.

SPECIFIC OUTCOME 3
Install and maintain specialised hospital sanitaryware.

SPECIFIC OUTCOME 4
Install and maintain specialised hospital automatic cleaning and laboratory fixtures.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install and maintain solar water heating systems

SAQA US ID	*UNIT STANDARD TITLE*		
244499	Install and maintain solar water heating systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Understand solar energy as a source of heat.

SPECIFIC OUTCOME 2
Prepare and plan for the installation of solar water heating systems.

SPECIFIC OUTCOME 3
Install solar water heating components, pipes and fittings.

SPECIFIC OUTCOME 4
Maintain solar water heating components, pipes and fittings.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install, maintain and test below ground drainage systems

SAQA US ID	*UNIT STANDARD TITLE*		
244498	Install, maintain and test below ground drainage systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install, maintain and test below ground drainage systems.

SPECIFIC OUTCOME 2
Install below ground waterborne drainage systems.

SPECIFIC OUTCOME 3
Inspect and maintain below ground waterborne drainage systems.

SPECIFIC OUTCOME 4
Install below ground non-waterborne means of sanitary disposal.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Perform building works

SAQA US ID	*UNIT STANDARD TITLE*		
244497	Perform building works		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	8

SPECIFIC OUTCOME 1
Plan and prepare to perform building works.

SPECIFIC OUTCOME 2
Construct brick masonry for manholes and chambers.

SPECIFIC OUTCOME 3
Perform in-situ concreting and benching.

SPECIFIC OUTCOME 4
Install precast elements.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install, maintain and test hot water supply systems

SAQA US ID	*UNIT STANDARD TITLE*		
244496	Install, maintain and test hot water supply systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install, test and maintain hot water supply systems.

SPECIFIC OUTCOME 2
Install hot water pipes and fittings.

SPECIFIC OUTCOME 3
Install hot water cylinders.

SPECIFIC OUTCOME 4
Maintain and repair hot water pipes and fittings.

SPECIFIC OUTCOME 5
Understand and apply basic electrical principals referring to hot water cylinders.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install, maintain and test Rainwater Systems

SAQA US ID	*UNIT STANDARD TITLE*		
244495	Install, maintain and test Rainwater Systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install rainwater gutters and downpipes.

SPECIFIC OUTCOME 2
Position gutter brackets.

SPECIFIC OUTCOME 3
Install rainwater gutters and downpipes.

SPECIFIC OUTCOME 4
Maintain and repair rainwater gutters and downpipes.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Perform specialised fault-finding and repairs to plumbing systems

SAQA US ID	*UNIT STANDARD TITLE*		
244494	Perform specialised fault-finding and repairs to plumbing systems		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to perform specialised fault finding and repairs to plumbing systems.

SPECIFIC OUTCOME 2
Understand and describe diagnostic, correction and upgrading principles.

SPECIFIC OUTCOME 3
Apply specialised maintenance and repair techniques to hot and cold water plumbing systems.

SPECIFIC OUTCOME 4
Apply specialised maintenance and repair techniques to above ground soil and waste water piping systems.

SPECIFIC OUTCOME 5
Apply specialised maintenance and repair techniques to below ground drainage systems.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Procure resources for construction works

SAQA US ID	*UNIT STANDARD TITLE*		
244493	Procure resources for construction works		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Understand the principles and processes in the procurement of resources.

SPECIFIC OUTCOME 2
Procure labour resources.

SPECIFIC OUTCOME 3
Procure material resources.

SPECIFIC OUTCOME 4
Procure plant, equipment and tools.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install, maintain and repair sanitaryware appliances

SAQA US ID	*UNIT STANDARD TITLE*		
244492	Install, maintain and repair sanitaryware appliances		
ORIGINATOR		*PROVIDER*	
SGB Building Construction			
FIELD		*SUBFIELD*	
12 - Physical Planning and Construction		Building Construction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	12

SPECIFIC OUTCOME 1
Plan and prepare to install sanitaryware appliances.

SPECIFIC OUTCOME 2
Install sanitaryware appliances.

SPECIFIC OUTCOME 3
Fit sanitaryware appliances to hot and cold water supply systems.

SPECIFIC OUTCOME 4
Fit sanitaryware appliances to soil and waste water systems.

SPECIFIC OUTCOME 5
Maintain and repair sanitaryware appliances.