No. 1001 **27 August 2004**

Established in terms of Act 58 of 1995

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

Civil Engineering and Construction

Registered by NSB 12, Physical Planning and Construction, publishes the following qualifications 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 upon which qualifications are based. 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, Hatfield Forum West, 1067 Arcadia Street, Hatfield.

Comment on the unit standards should reach SAQA at the address ***below and no later than 27 September 2004.*** All correspondence should be marked **Standards Setting – SGB Civil Engineering and Construction** and addressed to

The Director: Standards Setting and Development
SAQA
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JOE SAMUELS
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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Construction: Crane Operations

SAQA QUAL ID	*QUALIFICATION TITLE*	
48961	National Certificate: Construction: Crane Operations	
SGB NAME	SGB Civil Engineering Construction	
ABET BAND	*PROVIDER NAME*	
Undefined		
QUALIFICATION CODE	*QUAL TYPE*	*SUBFIELD*
PPC-2-National Certificate	National Certificate	Civil Engineering Construction
MINIMUM CREDITS	*NQF LEVEL*	*QUALIFICATION CLASS*
120	Level 2	Regular-Unit Stds Based
SAQA DECISION NUMBER	*REGISTRATION START DATE*	*REGISTRATION END DATE*

PURPOSE OF THE QUALIFICATION

This Qualification is intended to assist all relevant stakeholders and role-players.

For those who have been in the workplace for a long time, this Qualification can be used in the recognition of prior learning process to assess and recognise workplace skills acquired without the benefit of formal education and training.

For the new entrant, this Qualification describes the learning outcomes required to participate effectively in a structured workplace.

For education and training providers, this Qualification provides guidance for the development of appropriate learning programmes and assessment documentation.

For employers, this Qualification enables skills gaps to be identified and addressed ensuring that productivity levels are increased and business objectives achieved.

This Qualification has been developed to assist with the advancement of the learner across the Civil Engineering and Construction Industry and is aimed at Construction Crane Operations practitioners in the Industry, ensuring the upliftment of standards in general.

The combination of learning outcomes will provide the qualifying learner with vocational knowledge and skills appropriate to the context of Construction Crane Operations in the Civil Engineering and Construction environment. It will also equip learners with a foundation for further intellectual development, opportunities for gainful employment and reward for contributions to society.

This Qualification will provide the Industry with qualified Construction Crane Operations practitioners, thereby facilitating social and economic transformation, empowerment and upliftment in the Industry and country in general.

The relationship between this Qualification and the principles of the NQF is outlined in the following:

NQF Principle - National Certificate in Crane Operations - NQF Level 2

Recognition of Prior learning - Allows for Recognition of Prior Learning, especially as a means of career advancement
Credibility - Learning Outcomes are a result of consensus by the Industry
Relevance - Consulting workshops indicated a demand for a unit standard based Qualification in Construction Crane Operations
Access - Removes traditional barriers to Higher Education
Articulation/Progression - Forms part of a Learning Pathway for Construction Crane Operations, spanning

NQF Levels 2 - 4

Rationale for the Qualification:

This Qualification has been developed for the Construction Crane occupational area within the Civil Engineering and Construction Industry.

The rationale for the introduction of a unit standards based Qualification in Construction Operations is to provide a qualification for persons who perform construction crane activities on Civil Engineering and Construction sites, whether in micro, small, medium or large operations.

In the past many practitioners in the Civil Engineering and Construction area were denied career advancement and possible professional registration. The introduction of a unit standards based National Certificate in Construction: Crane Operations will allow learners, both unemployed and employed, to reach their full potential of advancement and will allow for Recognition of Prior Learning.

This qualification will facilitate the development of a professional community of Construction Crane Operators.

The competencies contained in this Qualification are essential for social and economic transformation, empowerment and upliftment within the construction crane operations environment, whilst simultaneously improving the skills base of the country.

The combination of learning outcomes will provide qualifying learners with applied competence in the integration of general construction sitework and technical competencies, areas of specialisation in construction plant operations.

This Qualification lays the basis for further learning towards the National Certificate in Construction: Advanced Crane Operations - NQF Level 3

The learning pathway for Construction Plant Operations, consists of the following Qualifications:

NQF Level 2 National Certificate in Construction: Crane Operations
NQF Level 3 National Certificate in Construction: Advanced Crane Operations
NQF Level 4 National Certificate in Construction: Plant Supervision

Key Work Areas

> Earthworks
> Roads
> Open Cast Mining
> Hiring / Services Industry

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that a learner entering a programme leading to this Qualification has successfully completed a General Education and Training Certificate including, Communication and Mathematics at NQF Level 1.

Recognition of Prior Learning:

The Qualification may be obtained in part or in whole through the process of Recognition of Prior Learning. Learners who successfully meet the requirements of any Unit Standard in this Qualification may apply to the relevant body for Recognition of Prior Learning (RPL) assessment. RPL candidates will be assessed against the assessment criteria and specific outcomes contained in the relevant Unit Standard/s.

QUALIFICATION RULES

The Qualification is composed of Fundamental, Core and Elective learning components:

Fundamental: 36
Core 72
Elective 12 (Minimum)

Credit total:
Minimum of 120 credits

In order to be awarded the Qualification, the learner has to prove competence in all of the Fundamental and Core Unit Standards, as well as at least 12 credits from Elective Unit Standards of the learner's choice.

Stakeholders decided that 560 notional hours of fundamental learning in Communications and Mathematics at NQF Levels 1-2 would be required in support of the core outcomes.

The bulk of the total credit value 72 is made up of the core learning. This is due to the following:

> General and basic technical skills are combined in the Qualification
> A working knowledge of general sitework and construction practices are compulsory in order for learners to exit as competent Construction Crane Operators who have acquired competencies in various areas of technical specialisation.

EXIT LEVEL OUTCOMES

Core exit level outcomes

On completion of this Qualification learners are able to:

1. Demonstrate knowledge of relevant Occupational Health and Safety legislation.
2. Demonstrate an understanding of NOSA requirements and organisational policies
3. Demonstrate knowledge of relevant code of practice
4. Demonstrate knowledge of and apply control measures for hazardous/dangerous goods/materials
5. Demonstrate knowledge of the main types and categories of cranes
6. Demonstrate knowledge of safe practices in crane operations
7. Demonstrate knowledge of daily checks and servicing of cranes and associated equipment.
8. Demonstrate knowledge of the documentation for crane operations and equipment maintenance requests
9. Identify Types of lifting equipment
10. Inspect and evaluate lifting gear
11. Prepare and sling regular loads
12. Communicate during crane operations
13. Identify and describe functions of major components and systems
14. Identify and describe functions of instruments and controls
15. Apply recognised methods for inspection and recording operational fitness of all crane components
16. Demonstrate an understanding of leverage application

Elective exit level outcomes

1. Demonstrate knowledge of the requirements to deliver and move mobile cranes and equipment to and from site
2. Confirm site arrangements
3. Arrange and confirm resources
4. Demonstrate an understanding of the regulatory requirements in terms of obtaining permits to move a mobile crane to and from site
5. Demonstrate knowledge of the functions of either mobile crane, a Tower Crane, a Cab Controlled Overhead Crane and a Pendant Controlled Overhead Crane, or a Truck Mounted Loader Crane
6. Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane
7. Operate either a Mobile Crane, a Tower Crane, a Cab Controlled Overhead Crane, a Pendant Controlled Overhead Crane, or a Truck Mounted Loader Crane
8. Apply the recognised methods for inspecting and recording the operational fitness of all components of cranes
9. Identify the safety and suitability of a particular crane.
10. Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane

Demonstrate the ability to integrate the following critical cross-field competencies when applying the general, specialist and basic computer literacy competencies outlined above:

Identify and solve problems
> Corrective actions are described or demonstrated in terms of neutralising warnings received.

Work effectively with others
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications

Employ self management
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and record keeping using a logbook

Manage information
> Warnings from crane indicators and gauges are explained according to manufacturer's specifications.

Communicate effectively
> Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified

Demonstrate scientific and technological competence
> Demonstrate ability to assess operational capability of lifting equipment (e.g. correct SWL of slings etc).
> Demonstrate an understanding of what constitutes safety in the broader working environment, and when operating a Crane in compliance with statutory regulations.

Understand contextual world-systems
> Demonstrate an understanding of what constitutes safety in the broader working environment, and when operating a Crane in compliance with statutory regulations

ASSOCIATED ASSESSMENT CRITERIA

Core exit associated assessment criteria:

1. > Knowledge of the requirements of the relevant sections of the Occupational Health and safety Act is demonstrated.
> An understanding of what constitutes health, safety and environment appreciation in the broader working environment is demonstrated and applied.
> Relevant health and safety legislation is applied to ensure compliance with national and international requirements and environmental standards
> The application of appropriate reporting mechanisms for unsafe working practice and conditions are selected, demonstrated and described.

2. > An understanding of integrated occupational safety is demonstrated and applied.
> An understanding of integrated occupational health is demonstrated and applied.
> An understanding of integrated environmental management is demonstrated and applied.
> Good housekeeping practices (e.g. preparing dunnage, stacking within demarcated areas) are selected, explained and demonstrated

3. > Knowledge of the requirements of the relevant Code of Practice is demonstrated.
> The requirements of the relevant Code of Practice are applied.
> The application of appropriate reporting mechanisms in terms of the relevant Code of Practice is selected, demonstrated and described

4. > Knowledge of control measures for Hazardous/Dangerous Goods/Materials is demonstrated.
> Control measures for Hazardous/Dangerous Goods/Materials is applied.

5. > The different categories, types, and safe working loads of cranes, as used in the crane industry are identified
> Crane descriptions, configurations, recommended uses, capabilities, and performance ratings are stated in accordance with crane manufacturers' specifications

6. > Safe crane practices for crane operations are stated in accordance with the relevant Health and Safety legislation, Codes of Practice, Company procedures, and Manufactures Manual
> Crane manufacturers' crane rating charts and range diagrams are described for crane use according to crane manufacturers' requirements and in accordance with Codes of Practice.
Range: Load charts, range diagrams, crane capacities, safe load indicators

7. > Checks and servicing are stated in accordance with equipment manufacturers' instructions and

enterprise procedures
> Pre-start checks are stated in accordance with equipment manufacturers' instructions and company procedures
Matters requiring expertise beyond that of the operator are recorded and forwarded on to appropriate personnel in accordance with enterprise procedures.
Range: Cranes, chassis, power source, lifting equipment

8. > Documentation of crane operations and equipment maintenance requests is described in accordance with enterprise procedures.
Range: Includes but is not limited to - log books, records, job sheets, crane equipment inventories, equipment maintenance requests.

9. > Types of lifting equipment are described in relation to their purpose and use. Weights of various regular loads are calculated, lifting equipment selected, and applicable sling and lifting gear applied to the load in accordance with the relevant Codes of Practice and Company procedures.
Range: Ropes, chains, web slings, lifting beams, spreader bars, slings, shackles, eye bolts, lifting devices
> Packing and dunnage are selected and applied to crane lift situations, in accordance with the relevant Codes of Practice and Company procedures

10. > Lifting gear is inspected and evaluated in accordance with relevant Codes of Practice and Company procedures.
Range: May include, but is not limited to - lifting beams, spreader bars, slings, shackles, eye bolts, natural, synthetic and wire ropes, chains and web slings.

11. > Regular loads are prepared and slung in accordance with the relevant Codes of Practice
> Tie appropriate knots in natural or synthetic ropes.
Range: bowline, clove hitch, sheet bend

12. > Hand signals for cranes and lifting appliances are in accordance with recognised practice
> Audible communication is done in accordance with the relevant Codes of Practice, and company procedures.
Range: May include but is not limited to radio telephone, other electrical devices, verbal

13. > Major components of construction Cranes are identified and their functions described

14. > Construction Crane instrumentation is identified and their functions described
> Construction Crane controls are identified and their functions described
> Warnings from machine indicators and gauges are explained according to manufacturer's specifications
> All safety features and warning devices on the machine are identified, and their purposes explained in accordance with manufacturer's specifications

15.> Pre-operational and Post-operational checks are carried out according to Manufacturer's operation manual.
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications.
> Start-up and shutdown procedures are followed according to manufacturer's specifications

16. > An understanding of leverage in relation to the load and capacity charts is demonstrated.
> An understanding of what constitutes the load rating in relation to the load radius, height, stability, structural and operational area is demonstrated.
> Crane most suitable for a particular application and method of operation to ensure safe operating procedures is selected

Elective associated assessment criteria:

1. > Work instructions are identified and confirmed to contract and/or company requirements.
> Documentation for the delivery is interpreted in accordance with company procedures and legislative requirements.
Range: Verbal, written, and telephone communication; health and safety

2. > Contract and/or company liaison and on site assessment is carried out in accordance with enterprise procedures
> Company procedures, Statutory requirements, Provincial regulations, and any other special requirements are understood

> Personnel involved and/or affected by the delivery are notified in accordance with company procedures.
Range: Personnel - people inside and outside the organisation who may be involved or have an influence;
> Hazards are identified in accordance with company risk assessmet procedures
> Contingency plans are in accordance with company safety policy procedures and statutory requirements are understood
Range: insecure and/or unstable and/or hazardous load, stability of crane, failure of lifting device

3. > Equipment best suited to meet the delivery needs is selected and confirmed in accordance with company procedures and checked to equipment manufacturers' specifications
> Resources required to assist with the project are arranged and confirmed and notified in accordance with company procedures and in accordance with job specifications.
Range: Personnel - pilot, dogger, riggers; equipment - type and capacity of crane, types and safe working load capacities of lifting equipment, cones, chocks, blocking, pads.

4. > Regulatory permits are obtained in accordance with statutory requirements pertaining to plan, task, site, and navigation routes assessment.
> Routes are mapped out and followed to relevant authority requirements
> Rules of the road for the particular crane are followed to traffic control requirements and crane and equipment are moved from depot to site in accordance with company procedures and manufacturers' operations manual.
Range: Crane characteristics - hydraulic suspension, stability, brake fade; traffic control - roads, speed limits, lanes, overtaking restrictions, giving way to other traffic, pilot requirements
> Access and exit to and from site are followed as per instructions.
Range: Hydraulic suspension, stability, obstructions, underground services, pot holes, overhead power lines.

5. > All safety features and warning devices on the crane are identified, and their purposes explained in accordance with manufacturer's specifications
> Corrective actions are described or demonstrated in terms of neutralising warnings received
> The main functions of Mobile Crane's are explained in terms of manufacturer's specifications
> The main functions of Truck Mounted Loader Crane's are explained in terms of manufacturer's specifications
> The maximum operating capacities are explained in terms of the designed crane capabilities.
> The operation of all major components is explained in terms of their functions
> Warnings from crane indicators and gauges are explained according to manufacturer's specifications

6. > Pre-operational checks are carried out according to appropriate checklist
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and record keeping using a logbook
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications
> Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified

7. > Controls are used to effectively manoeuvre the crane within manufacturer's specifications
> Crane is operated without risk of damage or loss to machine or property, or injury to people.
> Crane performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's manual.
> Functions of the various controls are demonstrated in accordance with the manufacturer's specifications
> Hazards specific to operating Mobile Crane's and ways to minimise these are explained in terms of potential damage to machine and property, and injury to people.
> Machine is parked according to manufacturer's and company requirements
> Safe working procedures are followed according to manufacturer's specifications, site specific and statutory requirements
> Start-up and shutdown procedures are followed according to manufacturer's manual
> The purpose of the various controls is explained in accordance with their designed use.

9.> An understanding of what constitutes safety in the broader working environment, and when operating a crane in compliance with statutory regulations is demonstrated.
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and record keeping using a logbook
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications
> Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified.

> Pre-operational checks are carried out according to appropriate checklist
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and record keeping using a logbook
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications.
> Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified

10. > The ability to identify the suitability of the crane prior to utilisation is demonstrated
> The ability to assess operational capability of lifting equipment (e.g. correct SWL of slings etc) is demonstrated.
> An understanding of the influence of load/range characteristics, manufacturers' requirements and environmental conditions is demonstrated
> An understanding of what constitutes safety in the broader working environment, and when operating a Crane in compliance with statutory regulations is demonstrated.

11. > Pre-operational checks are carried out according to appropriate checklist
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and record keeping using a logbook
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications
> Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified

Integrated Assessment:

Formative assessments conducted during the learning process will consist of written tests, demonstrations and a number of self-assessments. The purpose of formative assessment is to diagnose learner strengths and weaknesses and to determine readiness for summative assessment.

Summative assessment would consist of written tests and accompanying assignments, case studies and practical demonstrations. Summative assessments would only be conducted once the learner has indicated that he/she is ready to undergo summative assessment.

Before qualifying, learners will be expected to demonstrate competence in a practical situation that integrates the assessment of all specific outcomes, for all Unit Standards.

Integrated assessment provides learners with an opportunity to display an ability to integrate practical performance, actions, concepts and theory across Unit Standards to achieve competence in relation to the purpose of this Qualification.

In particular assessors should check that the learner is able to demonstrate the ability to consider a range of options and make decisions about:

> The quality of the observed practical performance as well as the theory and underpinning knowledge behind it.
> The different methods that can be used by the learner to display thinking and decision making in the demonstration of practical performance.
> Reflexive competencies

INTERNATIONAL COMPARABILITY

New Zealand Qualifications Authority:

The National Certificate in Construction: Crane Operations was benchmarked against the following New Zealand Qualifications:

> National Certificate in Crane Operations with strands in Mobile, Overhead and Tower

> Holders of this qualification are able to operate a mobile, overhead, or tower crane efficiently and safely in a dynamic working environment. They are able to determine the nature of each lift, stabilise loads, and place loads to requirements, in a manner that ensures the safety of all people and property. They are also able to carry out in-service maintenance of their equipment to a safe operational standard.

There is available an additional qualification, the National Certificate in Cranes (Advanced Mobile Crane Operation) [Ref: 0117], for the advanced operation of very large and sophisticated mobile cranes lifting complex loads. This certificate, with the mobile strand, leads into the advanced certificate.

There is also available a National Certificate in Cranes (Tower Crane Supervision) [Ref: 0120].

Core
All the unit standards listed below are required.

Field : Health
Sub-field: Health Studies
Domain: Core health

Unit Standard Title - Level - Credit
Manage first aid in emergency situations - 3 - 2
Provide first aid - 2 - 1
Provide resuscitation level 2 - 1 - 1

Sub-field: Occupational Health and Safety
Domain: Occupational health and safety practice

Unit Standard Title - Level-Credit
Protect health and safety in the work place - 1 - 1

Field: Humanities
Sub-field: Communication Skills
Domain: Interpersonal communications

Unit Standard Title - Level - Credit
Communicate information in a specified workplace - 2 - 3

Field: service sector
Sub-field: Cranes
Domain: Crane Operation

Unit Standard Title -□Level - Credit
Demonstrate knowledge of regulatory requirements pertaining to cranes - 2 - 4
Demonstrate knowledge of skills required in the crane industry - 3 - 8
Sling and communicate during crane operations - 3 - 22

Mobile Strand Compulsory
All the unit standards listed below are required.

Field: Service Sector
Sub-field: Cranes
Domain: Crane operation
Unit No.-Unit Standard Title-Level-Credit
3792-Arrange delivery and move mobile crane and equipment to and from site-4-22
3795-Configure mobile crane and lift and place loads-4-22

Overhead Strand Compulsory
All the unit standards listed below are required.

Field: service sector
Sub-field: Cranes
Domain: Crane maintenance and servicing

Unit Standard Title - Level - Credit
Carry out periodic maintenance checks and servicing for overhead cranes - 3 - 15

Domain: Crane operation

Unit Standard Title - Level - Credit
Operate a cab controlled overhead crane and lift and place loads - 3 - 12

Tower Strand Compulsory
All the unit standards listed below are required.

Field: Service sector
Sub-field: Cranes
Domain: Crane maintenance and servicing
Unit Standard Title - Level - Credit
Carry out periodic maintenance checks and servicing for tower cranes - 3 - 15

Domain: Crane operation
Unit Standard Title-Level - Credit
Lift and place loads with tower crane - 3 - 15

National Training Information Service - Australia

No National Certificate in Crane Operations were found in Australia, only courses in the various types of crane operations.

These courses are:

> (13551QLD) Course in Crane Operation
> (12446SA) Course in Mobile Crane Operation
> (12432SA) Course in Tower Crane Operation
> (12433SA) Course in Gantry Crane Operation

No Units of Competency were available related to this course. Refer to Training Provider for information on course modules

Scottish Qualifications Authority

No match was found for Level 3 qualifications listed in the Construction and Civil Engineering Services domain.

Irish Qualifications Authority
No match was found for Level 3 Qualifications listed in the Construction and Civil Engineering Services domain.

African Qualification Authorities -TEVETA (Malawi) & VETA (Zambia)

No Qualification was found for Level 3 Qualifications listed in the Construction and Civil Engineering Services domain.

ARTICULATION OPTIONS

This Qualification will allow learners access to a National Certificate in
Construction : Advanced Crane Operations

Learners who have successfully demonstrated applied competence in this
Qualification will be equipped with a foundation for further intellectual development,
opportunities for gainful employment and reward for contributions to society.

MODERATION OPTIONS

Assessment of learner achievements takes place at providers accredited by the relevant body (RSA, 1998b) for the provision of programmes that result in the outcomes specified for the National Certificate in Construction: Crane Operations - NQF Level 2.

The relevant ETQA or other appropriate ETQA's who have a Memorandum of Understanding in place with the relevant ETQA, are responsible for the moderation of learner achievements for those learners who meet the requirements of this Qualification.

Anyone assessing a learner, or moderating the assessment of a learner, against this Qualification must be registered as an assessor with the relevant ETQA. Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.

Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQA's and in terms of the moderation guideline detailed immediately below.

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

Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution, which is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Persons who apply to register as an Assessor for this Qualification, must meet the following criteria:

> A minimum of three years practical relevant occupational experience at NQF level 3 Detailed documentary proof of educational Qualification, subject matter expertise as well as experience gained (Portfolio of Evidence)
> A recognized assessor Qualification
> Compliance with the relevant ETQA's requirements for assessor registration

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	14656 Demonstrate an understanding of sexuality and sexually transmitted infections including HIV/AIDS	Level 1	5	Registered
Core	110075 Apply basic fire fighting techniques	Level 1	3	Registered
Core	9964 Apply health and safety to a work area	Level 2	3	Reregistered
Core	9965 Render basic first aid	Level 2	3	Registered
Core	9966 Establish and prepare a work area	Level 2	4	Registered
Core	9986 Apply quality principles on a construction project	Level 2	12	Registered
Core	14336 Maintain Records For Civil Construction Sites	Level 2	2	Registered
Core	14556 Apply productivity principles on a construction site	Level 2	6	Registered
Core	14560 Handle, transport, store and utilize hazardous materials on a construction site	Level 2	5	Registered
Core	110078 Plan, organise and manage oneself in the workplace	Level 2	2	Registered
Core	116227 Demonstrate mechanical awareness and crane appreciation	Level 2	5	Draft - Prep for P Comment
Core	116256 Sling and communicate during crane operations	Level 2	4	Draft - Prep for P Comment
Core	116283 Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation	Level 2	5	Draft - Prep for P Comment
Core	10955 Foster and maintain customer relations	Level 3	10	Reregistered
Core	14633 Adhere to disciplinary code	Level 3	1	Registered
Core	14636 Follow grievance procedure	Level 3	2	Registered
Elective	115903 Demonstrate knowledge of the requirements for mobile crane delivery	Level 2	8	Draft - Prep for P Comment
Elective	116231 Operate a cab controlled overhead crane	Level 2	8	Draft - Prep for P Comment
Elective	116235 Operate a pendant controlled overhead crane	Level 2	5	Draft - Prep for P Comment
Elective	116253 Operate a truck mounted loader crane	Level 2	20	Draft - Prep for P Comment
Elective	116254 Operate a mobile crane	Level 2	20	Draft - Prep for P Comment

Elective	116255 Operate a tower crane	Level 2	20	Draft - Prep for P Comment
Fundamental	7480 Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3	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	8967 Use language and communication in occupational learning programmes	Level 2	5	Registered
Fundamental	9007 Work with a range of patterns and functions and solve problems	Level 2	2	Registered
Fundamental	9008 Identify, describe, compare, classify, explore shape and motion in 2-and 3-dimensional shapes in different contexts	Level 2	3	Registered
Fundamental	9009 Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	4	Registered
Fundamental	7468 Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	2	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation

SAQA US ID	*UNIT STANDARD TITLE*
116283	Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of and apply relevant occupational health and safety legislation.

SPECIFIC OUTCOME 2

Demonstrate an understanding of and apply NOSA requirements and organisational policies.

SPECIFIC OUTCOME 3

Demonstrate knowledge of and apply relevant code of practice.

SPECIFIC OUTCOME 4

Demonstrate knowledge of and apply control measures for hazardous/dangerous goods/materials.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 2

Demonstrate mechanical awareness and crane appreciation

SAQA US ID	*UNIT STANDARD TITLE*
116227	Demonstrate mechanical awareness and crane appreciation

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify and describe functions of major components and systems.

SPECIFIC OUTCOME 2

Identify and describe functions of instruments and controls.

SPECIFIC OUTCOME 3

Apply recognised methods for inspection and recording operational fitness of all Crane components.

SPECIFIC OUTCOME 4

Demonstrate an understanding of leverage application.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 3

Sling and communicate during crane operations

SAQA US ID	*UNIT STANDARD TITLE*
116256	Sling and communicate during crane operations

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	4

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify types of lifting equipment.

SPECIFIC OUTCOME 2

Inspect and evaluate lifting gear.

SPECIFIC OUTCOME 3

Prepare and sling regular loads.

SPECIFIC OUTCOME 4

Communicate during crane operations.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 4

Operate a tower crane

SAQA US ID	*UNIT STANDARD TITLE*
116255	Operate a tower crane

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a tower crane.

SPECIFIC OUTCOME 2

Identify the safety and suitability of crane.

SPECIFIC OUTCOME 3

Apply the recognised methods for inspecting and recording the operational fitness of all components

SPECIFIC OUTCOME 4

Operate tower crane.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 5

Operate a truck mounted loader crane

SAQA US ID	*UNIT STANDARD TITLE*
116253	Operate a truck mounted loader crane

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a truck mounted loader crane.

SPECIFIC OUTCOME 2

Identify the safety and suitability of the crane.

SPECIFIC OUTCOME 3

Apply the recognised methods for inspecting and recording the operational fitness of all components

SPECIFIC OUTCOME 4

Operate truck mounted loader crane.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 6

Operate a pendant controlled overhead crane

SAQA US ID	*UNIT STANDARD TITLE*
116235	Operate a pendant controlled overhead crane

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a pendant controlled overhead crane.

SPECIFIC OUTCOME 2

Identify the safety and suitability of the crane.

SPECIFIC OUTCOME 3

Apply the recognised methods for inspecting and recording the operational fitness of all components

SPECIFIC OUTCOME 4

Operate a pendant controlled overhead crane.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 7

Operate a cab controlled overhead crane

SAQA US ID	*UNIT STANDARD TITLE*
116231	Operate a cab controlled overhead crane

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a cab controlled overhead crane.

SPECIFIC OUTCOME 2

Identify the safety and suitability of the crane.

SPECIFIC OUTCOME 3

Apply the recognised methods for inspecting and recording the operational fitness of all components

SPECIFIC OUTCOME 4

Operate a cab controlled overhead crane.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 8

Operate a mobile crane

SAQA US ID	*UNIT STANDARD TITLE*
116254	Operate a mobile crane

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a mobile crane.

SPECIFIC OUTCOME 2

Identify the safety and suitability of crane.

SPECIFIC OUTCOME 3

Apply the recognised methods for inspecting and recording the operational fitness of all components

SPECIFIC OUTCOME 4

Operate mobile crane.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 9

Demonstrate knowledge of the requirements for mobile crane delivery

SAQA US ID	*UNIT STANDARD TITLE*
115903	Demonstrate knowledge of the requirements for mobile crane delivery

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the requirements for mobile crane delivery to and from site.

SPECIFIC OUTCOME 2

Confirm site arrangements.

SPECIFIC OUTCOME 3

Arrange and confirm resources.

SPECIFIC OUTCOME 4

Demonstrate an understanding of the regulatory requirements in terms of obtaining permits.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 10

Demonstrate knowledge of skills required in the crane industry

SAQA US ID	*UNIT STANDARD TITLE*
115900	Demonstrate knowledge of skills required in the crane industry

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate Knowledge of the Main Types and Categories of Cranes.

SPECIFIC OUTCOME 2

Demonstrate Knowledge of Safe Practices in Crane Operations.

SPECIFIC OUTCOME 3

Demonstrate knowledge of daily checks and servicing of cranes and associated equipment.

SPECIFIC OUTCOME 4

Demonstrate knowledge of the documentation for crane operations and equipment maintenance requests.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Construction: Plant Operations

SAQA QUAL ID	*QUALIFICATION TITLE*	
48940	National Certificate: Construction: Plant Operations	
SGB NAME	SGB Civil Engineering Construction	
ABET BAND	*PROVIDER NAME*	
Undefined		
QUALIFICATION CODE	*QUAL TYPE*	*SUBFIELD*
PPC-3-National Certificate	National Certificate	Civil Engineering Construction
MINIMUM CREDITS	*NQF LEVEL*	*QUALIFICATION CLASS*
122	Level 2	Regular-Unit Stds Based
SAQA DECISION NUMBER	*REGISTRATION START DATE*	*REGISTRATION END DATE*

PURPOSE OF THE QUALIFICATION

This Qualification is intended to assist all relevant stakeholders and role-players:

> Civil & Building Construction companies
> Plant Hire
> Forestry
> Material Handling
> Mining
> Plant manufacturers

For those who have been in the workplace for a long time, this Qualification can be used in the recognition of prior learning process to assess and recognise workplace skills acquired without the benefit of formal education and training.

For the new entrant, this Qualification describes the learning outcomes required to participate effectively in a structured workplace.

For education and training providers, this Qualification provides guidance for the development of appropriate learning programmes and assessment documentation.

For employers, this Qualification enables skills gaps to be identified and addressed ensuring that productivity levels are increased and business objectives achieved.

This Qualification has been developed to assist with the advancement of the learner across the Civil Engineering and Construction Industry and is aimed at Construction Plant Operations practitioners in the Industry, ensuring the upliftment of standards in general.

The combination of learning outcomes will provide the qualifying learner with vocational knowledge and skills appropriate to the context of Construction Plant Operations in the Civil Engineering and Construction environment. It will also equip learners with a foundation for further intellectual development, opportunities for gainful employment and reward for contributions to society.

This Qualification will provide the Industry with qualified Construction Plant Operations practitioners, thereby facilitating social and economic transformation, empowerment and upliftment in the Industry and country in general.

The relationship between this Qualification and the principles of the NQF is outlined in the following:

NQF Principle - National Certificate in Plant Operations - NQF level 2

> Recognition of Prior learning - Allows for Recognition of Prior Learning, especially as a means of career advancement
> Credibility - Learning Outcomes are a result of consensus by the Industry
> Relevance - Consulting workshops indicated a demand for a unit standard based Qualification in Construction Plant Operations
> Access - Removes traditional barriers to Higher Education
> Articulation / Progression - Forms part of a Learning Pathway for Construction Plant Operations, spanning NQF Levels 1 - 4

Rationale for the Qualification:

This Qualification has been developed for the Construction Plant occupational area within the Civil Engineering and Construction Industry.

The rationale for the introduction of a NQF Level 2 unit standards based Qualification in Construction Operations is to provide a Qualification for persons who perform construction plant activities on Civil Engineering and Construction sites, whether in micro, small, medium or large operations.

In the past many practitioners in the Civil Engineering and Construction area were denied career advancement and possible professional registration. The introduction of a unit standards based National Certificate in Construction: Plant Operations will allow learners, both unemployed and employed, to reach their full potential of advancement and will allow for Recognition of Prior Learning.

This Qualification will facilitate the development of a professional community of Construction Plant Operators.

The competencies contained in this Qualification are essential for social and economic transformation, empowerment and upliftment within the construction plant operations environment, whilst simultaneously improving the skills base of the country.

The combination of learning outcomes will provide qualifying learners with applied competence in the integration of general construction sitework and technical competencies, areas of specialisation in construction plant operations.

This Qualification lays the basis for further learning towards the National Certificate in Construction: Advanced Plant Operations - NQF Level 3

The learning pathway for Construction Plant Operations, consists of the following Qualifications:

NQF Level 1 - National Certificate in Construction: Small Plant Operations
NQF Level 2 - National Certificate in Construction: Plant Operations
NQF Level 3 - National Certificate in Construction: Advanced Plant Operations
NQF Level 4 - National Certificate in Construction : Plant Supervision

Key Work Areas

> Earthworks
> Roads
> Open Cast Mining
> Hiring / Services Industry

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that a learner entering a programme leading to this Qualification has successfully completed a Further Education and Training Certificate including, Communication and Mathematics at NQF Level 1.

Recognition of Prior Learning:

The Qualification may be obtained in part or in whole through the process of Recognition of Prior Learning. Learners who successfully meet the requirements of any Unit Standard in this Qualification may apply to the relevant body for Recognition of Prior Learning (RPL) assessment. RPL candidates will be assessed against the assessment criteria and specific outcomes contained in the relevant Unit Standard/s.

QUALIFICATION RULES

Rules of commbination:

The Qualification is composed of Fundamental, Core and Elective learning components:

Fundamental: 36 credits
Core:n 82 credits
Elective: 12(Minimum) credits
Crędit total: Minimum of 130 credits

In order to be awarded the Qualification, the learner has to prove competence in all of the Fundamental and Core Unit Standards, as well as at least 12 credits from Elective Unit Standards of the learner's choice.

Stakeholders decided that 560 notional hours of fundamental learning in Communications and Mathematics at NQF Levels 2 - 3 would be required in support of the Core outcomes.

The bulk of the total credit value 82 is made up of the Core learning. This is due to the following:

> General and basic technical skills are combined in the Qualification
> A working knowledge of general sitework and roadworks construction practices is compulsory in order for learners to exit as competent Construction Plant Operators who have acquired competencies in various areas of technical specialisation.

Additional Elective Unit Standards could be added to the Qualification over time.

EXIT LEVEL OUTCOMES

On completion of this Qualification learners are able to:

Core exit level outcomes:

1. Demonstrate knowledge of civil construction processes and sequences
2. Demonstrate knowledge of civil construction plant, equipment and activities
3. Describe quality assurance of civil construction activities
4. Describe effects of adverse weather on Construction environments and activities
5. Describe different soil types
6. Demonstrate knowledge of bulk excavation
7. Describe dumping and spreading operations
8. Describe erosion control on earthworks
9. Describe compaction of earthworks
10. Identify and describe the functions of major components and systems
11. Identify and describe the functions of instruments and controls
12. Apply recognised methods for inspection and recording operational fitness of all plant components
13. Demonstrate an understanding of, and apply principles of leverage
14. Demonstrate knowledge of relevant occupational health and safety legislation.
15. Demonstrate an understanding of NOSA requirements and organisational policies
16. Demonstrate knowledge of relevant code of practice
17. Controlling hazardous/dangerous goods/materials

Elective exit level outcomes

1. Demonstrate knowledge of the functions of the respective plant types
2. Operate plant
3. Document plant use

Demonstrate the ability to integrate the following critical cross-field competencies when applying the general, specialist and basic computer literacy competencies outlined above:

Identify and solve problems
> Corrective actions are described or demonstrated in terms of neutralising warnings received

Work effectively with others
> Plant maintenance and faults are reported in accordance with company requirements.

Employ self-management
> Pre-operational checks are carried out according to appropriate checklist.
> Plant performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's specifications.

Manage information
> Plant hours are documented in accordance with company requirements.

Communicate effectively
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications.
> Plant maintenance and faults are reported in accordance with company requirements.

Demonstrate scientific and technological competence
> The main functions of relevant plant are explained in terms of manufacturer's specifications.

Understand contextual world-systems
> Hazards specific to operating plant and ways to minimise these are explained in terms of potential damage to machine and property, and injury to people.

ASSOCIATED ASSESSMENT CRITERIA

On completion of this Qualification learners are able to:

Core assessment criteria:
1. > Explanation of civil construction activities identifies and describes their processes and complexity, and the planning process required.
Range: May include - demolition, site clearing, earthworks, site preparation, excavation, foundations, erection and construction of structures, services, pavements and surfacing, road marking, erection of signs.
> Description of civil construction activities explains construction sequences.
Range: Demolition, site clearing, earthworks, site preparation, excavation, foundations, erection and construction of structures, services, pavements and surfacing, road marking, erection of signs

2. > Description identifies potential uses of large civil construction plant.
Range: Bulldozer, excavator, backhoe, wheeled loader, scraper, grader, self-propelled roller and dump truck
> Description identifies potential uses of civil construction equipment.
Range: Lifting gear and attachments, scaffolding, wheelbarrows, picks and shovel's, ladders, safety barricade, compressed air power tools, electric power tools, leads, transformers, safety equipment and adjustable props
> Description identifies survey and set out equipment and the importance of control marks to civil construction activities
> Description explains effect of machinery operations on the environment.
Range: Includes but is not restricted to - vibration, noise, visual pollution

3.> Description of the concept of supplying a product or service to meet specified requirements identifies and explains quality, timing, and level of service.
> Description explains impact of individual performance on own and company's professional reputation.
> Description identifies key principles of planning needs
> Description identifies and explains procedures for detecting and reporting defects in plant, materials, and tasks.
> Description of customer relationships identifies effects of customer satisfaction on potential contracts

4.> Description explains effect of adverse weather on construction materials
> Description explains effect of adverse weather on work area including road surfaces
> Description explains effect of wind, dust, heat, and ice on machine operation.
Range: Down-stream effects of further machine usage, wear and tear, cost · Description explains effect of adverse weather on construction environments.
Includes but is not restricted to - pollution of watercourses, dust nuisance, slips

5.> Cohesive and non-cohesive soils are identified and described in terms of their structure.
> Cohesive and non-cohesive soils are identified and described in terms of their moisture content.
> Cohesive and non-cohesive soils are described in relation to machinery suitable for cutting, hauling, dumping, spreading and compacting
> Description identifies methods of drying cohesive and non-cohesive soils to achieve specified strength

> Description identifies methods of wetting cohesive and non-cohesive soils to achieve specified strength

6.> Types of cutting operations are identified and related to different soil types. Range: cut-to-waste, cut-to-fill, cut-to stockpile, strip-to stockpile.
> Cut-to-fill materials are identified and action to be taken at cut area is described in terms of requirements for cohesive and non-cohesive soil types
> Principles of undercutting are described in relation to cohesive and non-cohesive soil types.
> Cut-to-waste operations are described in relation to the selection of disposal areas for reject materials, and alternative uses for reconditioned cut-to-waste material

7.> Principles of layering are described in relation to soil type. Range: straights, curves, rock sub-grade, thickness of layers, optimum moisture content.
> Technical procedures for borrow areas are identified in accordance with company requirements. Range: restricted sites, drainage, sequence, re-instatement of site

8.> Means of controlling surface erosion on earthworks are identified. Range: includes but is not restricted to - bench, batter, drainage
> Shaping and re-vegetating earthworks are described in relation to slope of terrain, availability of topsoil, re-grassing methods, and rolling
> Procedures for ceasing operations to avoid erosion are described in accordance with company requirements

9.> Means of compaction of earthworks are identified.
Range: includes but is not restricted to - steel-wheeled roller, pneumatic-tyre roller, impact roller, grid roller, vibratory roller, kneading compactor roller
> Methods of compacting for different types of soil/materials is identified

10.> Major components of construction plant are identified and their functions described
> Hydraulic systems of construction plant are identified and their functions described
> Transmission systems are identified and described according to functions

11.> Construction plant instrumentation is identified and their functions described
> Construction plant controls are identified and their functions described
> Warnings from machine indicators and gauges are explained according to manufacturer's specifications
> All safety features and warning devices on the machine are identified, and their purposes explained in accordance with manufacturer's specifications

12.> Pre-operational and Post-operational checks are carried out according to Manufacturer's operation manual
> Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications
> Start-up and shutdown procedures are followed according to manufacturer's specifications

13.> An understanding of principles of leverage in relation to the load and capacity charts is demonstrated
> An understanding of what constitutes the load rating in relation to the load radius, height, and stability, structural and operational area is demonstrated
> Most suitable plant for a particular application and method of operation to ensure safe operating procedures is selected

14.> Knowledge of the requirements of the relevant sections of the Occupational Health and safety Act is demonstrated
> An understanding of what constitutes health, safety and environment appreciation in the broader working environment is demonstrated and applied
> Relevant health and safety legislation is applied to ensure compliance with national and international requirements and environmental standards
> The application of appropriate reporting mechanisms for unsafe working practice and conditions are selected, demonstrated and described.

15.> An understanding of an integrated occupational safety programme is demonstrated and applied.
> An understanding of and apply integrated occupational health programme is demonstrated and applied.
> An understanding of an integrated environmental management programme is demonstrated and applied.
> Good housekeeping practices (e.g. preparing dunnage, stacking within demarcated areas) are selected, explained and demonstrated

16.> Knowledge of the requirements of the relevant Code of Practice is demonstrated
> The requirements of the relevant Code of Practice are applied
> The application of appropriate reporting mechanisms in terms of the relevant Code of Practice are selected, demonstrated and described

17.> Knowledge of Control measures for Hazardous/Dangerous Goods/Materials is demonstrated
> Control measures for Hazardous/Dangerous Goods/Materials are applied

Elective assessment criteria:

1.> The main functions of the plant are explained in terms of manufacturer's specifications.
> The operation of all major components is explained in terms of their functions
> All safety features and warning devices on the plants are identified, and their purposes explained in accordance with manufacturer's specifications
> The maximum operating capacities are explained in terms of the designed plant capabilities.
> Warnings from plant indicators and gauges are explained according to manufacturer's specifications
> Corrective actions are described or demonstrated in terms of neutralising warnings received

2.> The purpose of the various controls is explained in accordance with their designed use
> Functions of the various controls are demonstrated in accordance with the manufacturer's specifications
> Pre-operational checks are carried out according to appropriate checklist
> Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist
> Checklist is completed according to worksite procedures and corrective action taken if required, to ensure compliance with manufacturer's specifications
> Start-up and shutdown procedures are followed according to manufacturer's specifications.
> Controls are used to effectively manoeuvre the plant within manufacturer's specifications
> Plant is parked according to manufacturer's and company requirements
> Safe working procedures are followed according to manufacturer's specifications, site specific and statutory requirements
> Plant performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's specifications
> Plant is operated without risk of damage or loss to machine or property, or injury to people.
> Hazards specific to operating plant and ways to minimise these are explained in terms of potential damage to machine and property, and injury to people

3.> Plant hours are documented in accordance with company requirements
> Plant maintenance and faults are reported in accordance with company requirements

Integrated Assessment:

Formative assessments conducted during the learning process will consist of written tests, demonstrations and a number of self-assessments. The purpose of formative assessment is to diagnose learner strengths and weaknesses and to determine readiness for summative assessment.

Summative assessment would consist of written tests and accompanying assignments, case studies and practical demonstrations. Summative assessments would only be conducted once the learner has indicated that he/she is ready to undergo summative assessment.

Before qualifying, learners will be expected to demonstrate competence in a practical situation that integrates the assessment of all specific outcomes, for all Unit Standards.

Integrated assessment provides learners with an opportunity to display an ability to integrate practical performance, actions, concepts and theory across Unit Standards to achieve competence in relation to the purpose of this Qualification.

In particular assessors should check that the learner is able to demonstrate the ability to consider a range of options and make decisions about:

> The quality of the observed practical performance as well as the theory and underpinning knowledge behind it.
> The different methods that can be used by the learner to display thinking and decision making in the demonstration of practical performance.
> Reflexive competencies

INTERNATIONAL COMPARABILITY

New Zealand Qualifications Authority:

The National Certificate in Construction: Plant Operations was benchmarked against the following Qualifications:
> New Zealand - National Certificate in Civil Plant Operation Skilled, Multi-skilled
> Australia - Certificate III in Civil Construction (Plant).

In the New Zealand Qualification, the National Certificate in Civil Plant Operation, the certificate is awarded to those people who have been credited with the core compulsory units, and who have met the requirements for one of the strands.

Core Compulsory Unit Standards in the skilled strand account for 27 credits towards the Qualification.

These unit standards are:
> Inspect civil construction plant and equipment
> Apply working drawings and specifications to civil construction tasks
> Locate and identify services on civil construction works
> Apply quality and testing requirements on civil construction works
> Set up and work safely at roadwork sites

Skilled Strand
A minimum of one unit standard from list A, and a minimum of 40 credits from the unit standards in list B are required.
List A

Description-Credit
Meet driver licensing requirements for endorsement W (special-type vehicles on wheels) - 8
Meet driver licensing requirements for endorsement R (special-type vehicles on rollers) - 8
Meet driver licensing requirements for endorsement T (special-type vehicles on self-laying tracks) - 8

List B
Description - Credit
Convey civil construction plant by transporter - 20
Operate a mechanical rockbreaker - 10
Operate a wheeled loader on civil construction sites - 20
Operate a hydraulic excavator on civil construction sites - 25
Operate a motor grader for earthworks - 30
Operate a motor grader for road maintenance - 30
Operate a motor grader for road construction - 30
Operate a motor scraper on civil construction sites - 20
Operate a self-propelled roller on civil construction sites - 20
Operate a bulldozer on civil construction sites - 20
Operate an articulated dump truck on civil construction sites - 20
Operate a winch with civil plant - 15
Transport aggregates by truck - 3

Multi-Skilled Strand
All the unit standards listed in the strand compulsory are required, and minimum of 80 credits is required from the unit standards listed in the strand elective.

Compulsory Units

Description-Credit
Meet driver licensing requirements for endorsement W (special-type vehicles on wheels) - 8
Meet driver licensing requirements for endorsement R (special-type vehicles on rollers) - 8
Meet driver licensing requirements for endorsement T (special-type vehicles on self-laying tracks) - 8

Elective Units
Description - Credit

Convey civil construction plant by transporter - 20
Operate a mechanical rockbreaker - 10

Deliver, stockpile, and spread aggregates with truck and trailer - 12
Operate a wheeled loader on civil construction sites - 20
Operate a hydraulic excavator on civil construction sites - 25
Operate a motor grader for earthworks - 30
Operate a motor grader for road maintenance - 30
Operate a motor grader for road construction - 30
Operate a motor scraper on civil construction sites - 20
Operate a self-propelled roller on civil construction sites - 20
Operate a bulldozer on civil construction sites - 20
Operate an articulated dump truck on civil construction sites - 20
Operate a winch with civil plant - 15
Drive heavy rigid commercial goods service vehicles - 12
Carry out start up and shut down procedures on a commercial vehicle - 4
Drive prime mover with single or multiple trailers-15
Transport aggregates by truck - 3
Deliver base-course aggregates by truck - 2
Transport over dimension or overweight loads by road - 15
Pilot overweight and over dimension load - 6

Other New Zealand Civil Contracting National Certificates are:

> Civil Construction Works - Introductory Skills
> Civil Works and Services
> Road Construction
> Roading Maintenance
> Civil Plant Management
> Civil Plant Operation Forestry Earthworks
National Training Information Service - Australia

A Certificate III in Civil Construction (Plant) is listed. Details on this Qualification are listed below.

To obtain this Qualification all core competencies plus a minimum of three electives from the 1000 and 2000 series must be achieved. One competency standard from Group A and two competency standards from Group B must also be achieved.

Core Unit Title - Nominal Funding Hours
Carry out interactive workplace communication - 20
Carry out OH&S requirements - 40
Plan and organise work - 20
Site drainage/dewatering - 12
Carry out measurements and calculations - 20
Use hand and power tools - 80
Use small plant and equipment - 16
Use simple levelling devices - 8
Carry out manual excavation - 8
Carry out concreting to simple forms - 40
Handle construction materials and safe disposal of waste - 16
Spread and compact materials manually - 12
Monitor machine operations - 8
BCC10Unit Standards A -Control construction traffic - 4
BCC2000A -Read and interpret plans - 40
Assist with excavation and support installation - 8
Repair pavements - 16
Carry out concrete work - 120

Total Core Hours -

Three electives must be achieved from the following list.
Elective Unit Title - Nominal Funding Hours
Erect and dismantle restricted height scaffolding - 32
Carry out basic site survey - 24
Oxy/LPG acetylene cutting - 20
Lay pipes - 40
Erect/dismantle fencing and gates - 40

Operate elevating work platforms - 8
Use explosive power tools - 16

One competency standard must be achieved from the following list. (Group A.)

Group A Elective Unit Title - Nominal Funding Hours

Conduct backhoe/loader operations - 200
Conduct dozer operations - 240
Conduct excavator operations - 200
Conduct front end loader operations - 160
Conduct grader operations - 240
Conduct scraper operations - 180
Conduct skid skeer loader operations - 160
Unit Standards A - Conduct pipelayer operations - 80
Conduct recycler operations - 80

Two competency standards must be achieved from the following list.

(Group B.)
Group B Elective Unit Title - Nominal Funding Hours

Conduct tractor operations - 60
Conduct tip truck operations - 60
Conduct roller operations - 80
Conduct water cart operations - 40
Conduct continuous bucket trencher operations - 40
Conduct dump truck operations - 60
Conduct forklift operations - 32
Conduct soil and landfill compactor operations - 40
Conduct telescopic materials handler operations - 80
Conduct materials spreader operations - 80
Conduct profile planer operations - 80
Maximum Funded Hours - 1,008

Scottish Qualifications Authority

No match was found for Level 2 qualifications listed in the Construction and Civil Engineering Services domain.

Irish Qualifications Authority

No match was found for Level 3 Qualifications listed in the Construction and Civil Engineering Services domain.

African Qualification Authorities -TEVETA (Malawi) & VETA (Zambia)
No Qualification was found for Level 2 Qualifications listed in the Construction and Civil Engineering Services domain.

ARTICULATION OPTIONS

This Qualification will allow learners access to a National Certificate in Construction : Advanced Plant Operation.

Learners who have successfully demonstrated applied competence in this Qualification will be equipped with a foundation for further intellectual development, opportunities for gainful employment and reward for contributions to society.

MODERATION OPTIONS

Assessment of learner achievements takes place at providers accredited by the relevant body (RSA, 1998b) for the provision of programmes that result in the outcomes specified for the National Certificate in Construction: Plant Operations - NQF Level 2.

The relevant ETQA, or other ETQAs that have a Memorandum of Understanding in place with the relevant

ETQA, are responsible for the moderation of learner achievements for those learners who meet the requirements of this Qualification.

Anyone assessing a learner, or moderating the assessment of a learner, against this Qualification must be registered as an assessor with the relevant ETQA. Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.

Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQA's and in terms of the moderation guideline detailed immediately below.

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

Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution, which is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Person's who apply to register as an Assessor for this Qualification, must meet the following criteria:

> A recognized assessor Qualification
> Compliance with the relevant ETQA's requirements for assessor registration
> Detailed documentary proof of educational Qualification, subject matter expertise as well as experience gained (Portfolio of Evidence)
> A minimum of three years practical relevant occupational experience at NQF level 3

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	14656 Demonstrate an understanding of sexuality and sexually transmitted infections including HIV/AIDS	Level 1	5	Registered
Core	110075 Apply basic fire fighting techniques	Level 1	3	Registered
Core	9964 Apply health and safety to a work area	Level 2	3	Reregistered
Core	9965 Render basic first aid	Level 2	3	Registered
Core	9966 Establish and prepare a work area	Level 2	4	Registered
Core	9978 Describe the construction industry composition its work procurement systems and communication techniques	Level 2	3	Registered
Core	9986 Apply quality principles on a construction project	Level 2	12	Registered
Core	14336 Maintain Records For Civil Construction Sites	Level 2	2	Registered
Core	14556 Apply productivity principles on a construction site	Level 2	6	Registered
Core	14560 Handle, transport, store and utilize hazardous materials on a construction site	Level 2	5	Registered
Core	110078 Plan, organise and manage oneself in the workplace	Level 2	2	Registered
Core	114219 Demonstrate an understanding and implement environmental initiatives on a construction activity	Level 2	4	Registered
Core	116051 Demonstrate fundamental knowledge of earthworks	Level 2	5	Draft - Prep for P Comment
Core	116152 Demonstrate mechanical awareness and plant appreciation	Level 2	5	Draft - Prep for P Comment
Core	116154 Demonstrate knowledge of and apply regulatory requirements pertaining to plant operation	Level 2	5	Draft - Prep for P Comment
Core	116162 Demonstrate knowledge of civil construction works	Level 2	5	Draft - Prep for P Comment
Core	10955 Foster and maintain customer relations	Level 3	10	Reregistered

Core	14633 Adhere to disciplinary code	Level 3	1	Registered
Core	14636 Follow grievance procedure	Level 3	2	Registered
Elective	116045 Operate wheeled dozer	Level 2	20	Draft - Prep for P Comment
Elective	116047 Operate excavator	Level 2	20	Draft - Prep for P Comment
Elective	116054 Operate face shovel	Level 2	24	Draft - Prep for P Comment
Elective	116058 Operate a tracked dozer	Level 2	24	Draft - Prep for P Comment
Elective	116067 Operate a tip truck	Level 2	6	Draft - Prep for P Comment
Elective	116071 Operate a scraper	Level 2	20	Draft - Prep for P Comment
Elective	116073 Operate water cart	Level 2	6	Draft - Prep for P Comment
Elective	116075 Operate a sideboom	Level 2	8	Draft - Prep for P Comment
Elective	116078 Operate a grader	Level 2	26	Draft - Prep for P Comment
Elective	116085 Operate service truck	Level 2	10	Draft - Prep for P Comment
Elective	116089 Operate a roller	Level 2	8	Draft - Prep for P Comment
Elective	116097 Operate a rigid body dump truck	Level 2	16	Draft - Prep for P Comment
Elective	116102 Operate front end loader	Level 2	16	Draft - Prep for P Comment
Elective	116130 Operate a dragline	Level 2	24	Draft - Prep for P Comment
Elective	116132 Operate continuous bucket trencher	Level 2	8	Draft - Prep for P Comment
Elective	116135 Operate bitumen spray bitumen spray equipment	Level 2	5	Draft - Prep for P Comment
Elective	116140 Operate a paving screed	Level 2	6	Draft - Prep for P Comment
Elective	116142 Operate a milling machine	Level 2	8	Draft - Prep for P Comment
Elective	116146 Operate a hot mix asphalt paving machine	Level 2	8	Draft - Prep for P Comment
Elective	116177 Operate a tractor	Level 2	6	Draft - Prep for P Comment
Elective	116210 Operate a Skid Steer Loader	Level 2	16	Draft - Prep for P Comment
Elective	116330 Operate articulated dump truck	Level 2	16	Draft - Prep for P Comment
Elective	116333 Operate backhoe/loader	Level 2	20	Draft - Prep for P Comment
Fundamental	7480 Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3	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	8967 Use language and communication in occupational learning programmes	Level 2	5	Registered
Fundamental	9007 Work with a range of patterns and functions and solve problems	Level 2	2	Registered
Fundamental	9008 Identify, describe, compare, classify, explore shape and motion in 2-and 3-dimensional shapes in different contexts	Level 2	3	Registered
Fundamental	9009 Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	4	Registered
Fundamental	7468 Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	2	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 1

Demonstrate fundamental knowledge of earthworks

SAQA US ID	*UNIT STANDARD TITLE*
116051	Demonstrate fundamental knowledge of earthworks

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Describe different soil types.

SPECIFIC OUTCOME 2

Demonstrate knowledge of bulk excavation.

SPECIFIC OUTCOME 3

Describe dumping and spreading operations.

SPECIFIC OUTCOME 4

Describe erosion control on earthworks.

SPECIFIC OUTCOME 5

Describe compaction of earthworks.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 2

Demonstrate mechanical awareness and plant appreciation

SAQA US ID	*UNIT STANDARD TITLE*
116152	Demonstrate mechanical awareness and plant appreciation

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify and describe functions of major components and systems.

SPECIFIC OUTCOME 2

Identify and describe functions of instruments and controls.

SPECIFIC OUTCOME 3

Apply recognised methods for inspection and recording operational fitness of all plant components.

SPECIFIC OUTCOME 4

Demonstrate an understanding of, and apply principles of leverage.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 3

Demonstrate knowledge of and apply regulatory requirements pertaining to plant operation

SAQA US ID	*UNIT STANDARD TITLE*
116154	Demonstrate knowledge of and apply regulatory requirements pertaining to plant operation

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate Knowledge of and apply relevant Occupational Health and Safety legislation.

SPECIFIC OUTCOME 2

Demonstrate an understanding of and apply NOSA requirements and organisational policies.

SPECIFIC OUTCOME 3

Demonstrate knowledge of and apply relevant Code of practice.

SPECIFIC OUTCOME 4

Demonstrate knowledge of and apply control measures for hazardous/dangerous goods/materials.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 4

Demonstrate knowledge of civil construction works

SAQA US ID	*UNIT STANDARD TITLE*
116162	Demonstrate knowledge of civil construction works

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of civil construction processes and sequences.

SPECIFIC OUTCOME 2

Demonstrate knowledge of civil construction plant, equipment, and activities.

SPECIFIC OUTCOME 3

Describe quality assurance of civil construction activities.

SPECIFIC OUTCOME 4

Describe effects of adverse weather on construction environments and activities.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 5

Operate a sideboom

SAQA US ID	*UNIT STANDARD TITLE*
116075	Operate a sideboom

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a sideboom.

SPECIFIC OUTCOME 2

Start and shut down sideboom.

SPECIFIC OUTCOME 3

Operate sideboom.

SPECIFIC OUTCOME 4

Document sideboom use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 6

Operate excavator

SAQA US ID	*UNIT STANDARD TITLE*
116047	Operate excavator

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a excavator.

SPECIFIC OUTCOME 2

Start and shut down excavator.

SPECIFIC OUTCOME 3

Operate excavator.

SPECIFIC OUTCOME 4

Document excavator use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 7

Operate face shovel

SAQA US ID	*UNIT STANDARD TITLE*
116054	Operate face shovel

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB for Secondary Agriculture: Processing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Agriculture and Nature Conservation	Secondary Agriculture

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
AGR-SAG-0-SGB SAP	Regular	Level 2	24

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a face shovel.

SPECIFIC OUTCOME 2

Start and shut down face shovel.

SPECIFIC OUTCOME 3

Operate face shovel.

SPECIFIC OUTCOME 4

Document face shovel use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 8

Operate a dragline

SAQA US ID	*UNIT STANDARD TITLE*
116130	Operate a dragline

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	24

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a draglines.

SPECIFIC OUTCOME 2

Start and shut down dragline.

SPECIFIC OUTCOME 3

Operate dragline.

SPECIFIC OUTCOME 4

Document dragline use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 9

Operate a tracked dozer

SAQA US ID	*UNIT STANDARD TITLE*
116058	Operate a tracked dozer

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	24

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a tracked dozer.

SPECIFIC OUTCOME 2

Start and shut down tracked dozer.

SPECIFIC OUTCOME 3

Operate tracked dozer.

SPECIFIC OUTCOME 4

Document tracked dozer use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 10

Operate wheeled dozer

SAQA US ID	*UNIT STANDARD TITLE*
116045	Operate wheeled dozer

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate Knowledge of the Functions of a wheel dozer.

SPECIFIC OUTCOME 2

Start and shut down wheel dozer.

SPECIFIC OUTCOME 3

Operate wheel dozer.

SPECIFIC OUTCOME 4

Document wheel dozer use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 11

Operate front end loader

SAQA US ID	*UNIT STANDARD TITLE*
116102	Operate front end loader

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a front end loader.

SPECIFIC OUTCOME 2

Start and shut down front end loader.

SPECIFIC OUTCOME 3

Operate front end loader.

SPECIFIC OUTCOME 4

Document front end loader use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 12

Operate a grader

SAQA US ID	*UNIT STANDARD TITLE*
116078	Operate a grader

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	26

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a grader.

SPECIFIC OUTCOME 2

Start and shut down grader.

SPECIFIC OUTCOME 3

Operate grader.

SPECIFIC OUTCOME 4

Document grader use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 13

Operate a scraper

SAQA US ID	*UNIT STANDARD TITLE*
116071	Operate a scraper

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a scraper.

SPECIFIC OUTCOME 2

Start and shut down scraper.

SPECIFIC OUTCOME 3

Operate scraper.

SPECIFIC OUTCOME 4

Document scraper use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 14

Operate a tip truck

SAQA US ID	*UNIT STANDARD TITLE*
116067	Operate a tip truck

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	6

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a Tip Truck

SPECIFIC OUTCOME 2

Start and shut down tip truck.

SPECIFIC OUTCOME 3

Operate tip truck.

SPECIFIC OUTCOME 4

Document tip truck use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 15

Operate articulated dump truck

SAQA US ID	*UNIT STANDARD TITLE*
116330	Operate articulated dump truck

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a articulated dump trucks.

SPECIFIC OUTCOME 2

Start and shut down machine.

SPECIFIC OUTCOME 3

Operate machine.

SPECIFIC OUTCOME 4

Document machine use

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 16

Operate a Skid Steer Loader

SAQA US ID	*UNIT STANDARD TITLE*
116210	Operate a Skid Steer Loader

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a skid steer loader.

SPECIFIC OUTCOME 2

Start and shut down skid steer loader.

SPECIFIC OUTCOME 3

Operate skid steer loader.

SPECIFIC OUTCOME 4

Document skid steer loader use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 17

Operate a tractor

SAQA US ID	*UNIT STANDARD TITLE*
116177	Operate a tractor

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	6

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a tractor.

SPECIFIC OUTCOME 2

Start and shut down tractor.

SPECIFIC OUTCOME 3

Operate tractor.

SPECIFIC OUTCOME 4

Document tractor use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 18

Operate a roller

SAQA US ID	*UNIT STANDARD TITLE*
116089	Operate a roller

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a roller.

SPECIFIC OUTCOME 2

Start and shut down roller.

SPECIFIC OUTCOME 3

Operate roller.

SPECIFIC OUTCOME 4

Document roller use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 19

Operate water cart

SAQA US ID	*UNIT STANDARD TITLE*
116073	Operate water cart

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB for Secondary Agriculture: Processing	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Agriculture and Nature Conservation	Secondary Agriculture

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
AGR-SAG-0-SGB SAP	Regular	Level 2	6

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a water cart.

SPECIFIC OUTCOME 2

Start and shut down water cart.

SPECIFIC OUTCOME 3

Operate water cart.

SPECIFIC OUTCOME 4

Document water cart use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 20

Operate continuous bucket trencher

SAQA US ID	*UNIT STANDARD TITLE*
116132	Operate continuous bucket trencher

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a continuous bucket trencher.

SPECIFIC OUTCOME 2

Start and shut down continuous bucket trenche.

SPECIFIC OUTCOME 3

Operate continuous bucket trencher.

SPECIFIC OUTCOME 4

Document continuous bucket trencher use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 21

Operate a hot mix asphalt paving machine

SAQA US ID	*UNIT STANDARD TITLE*
116146	Operate a hot mix asphalt paving machine

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a hot mix asphalt paving machine.

SPECIFIC OUTCOME 2

Start and shut down hot mix asphalt paving machine.

SPECIFIC OUTCOME 3

Operate hot mix asphalt paving machine.

SPECIFIC OUTCOME 4

Document hot mix asphalt paving machine use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 22

Operate bitumen spray bitumen spray equipment

SAQA US ID	*UNIT STANDARD TITLE*
116135	Operate bitumen spray bitumen spray equipment

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	5

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions bitumen spray equipment.

SPECIFIC OUTCOME 2

Demonstrate an understanding of sprayer support plant.

SPECIFIC OUTCOME 3

Prepare to spray bitumen.

SPECIFIC OUTCOME 4

Operate bitumen spray equipment.

SPECIFIC OUTCOME 5

Operate bitumen spraying process controls.

SPECIFIC OUTCOME 6

Maintain sprayer bitumen spray equipment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 23

Operate a paving screed

SAQA US ID	*UNIT STANDARD TITLE*
116140	Operate a paving screed

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	6

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a paving screed.

SPECIFIC OUTCOME 2

Start and shut down paving screed.

SPECIFIC OUTCOME 3

Operate paving screed.

SPECIFIC OUTCOME 4

Document paving screed use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 24

Operate a milling machine

SAQA US ID	*UNIT STANDARD TITLE*
116142	Operate a milling machine

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a milling machine.

SPECIFIC OUTCOME 2

Start and shut down milling machine.

SPECIFIC OUTCOME 3

Operate milling machine.

SPECIFIC OUTCOME 4

Document milling machine use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 25

Operate service truck

SAQA US ID	*UNIT STANDARD TITLE*
116085	Operate service truck

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a service trucks.

SPECIFIC OUTCOME 2

Start and shut down service truck.

SPECIFIC OUTCOME 3

Operate service truck.

SPECIFIC OUTCOME 4

Document service truck use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 26

Operate backhoe/loader

SAQA US ID	*UNIT STANDARD TITLE*
116333	Operate backhoe/loader

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a backhoe/loader's.

SPECIFIC OUTCOME 2

Start and shut down machine.

SPECIFIC OUTCOME 3

Operate machine.

SPECIFIC OUTCOME 4

Document machine use.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 27

Operate a rigid body dump truck

SAQA US ID	*UNIT STANDARD TITLE*
116097	Operate a rigid body dump truck

SGB NAME	*ABET BAND*	*PROVIDER NAME*
SGB Civil Engineering Construction	Undefined	

FIELD DESCRIPTION	*SUBFIELD DESCRIPTION*
Physical Planning and Construction	Civil Engineering Construction

UNIT STANDARD CODE	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
PPC-CEC-0-SGB CEC	Regular	Level 2	16

Specific Outcomes:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a rigid body dump truck.

SPECIFIC OUTCOME 2

Start and shut down rigid body dump truck.

SPECIFIC OUTCOME 3

Operate rigid body dump truck.

SPECIFIC OUTCOME 4

Document rigid body dump truck use.