### STAATSKOERANT, 5 NOVEMBER 2004

No. 1303



# 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 **NSR 12**, Physical Planning and Construction, publishes the following qualifications and **unil** 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 <u>www.saqa.org.za</u>. 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 then 14 November 2004.** All correspondence should be marked **Standards Setting –** SGB Civil Engineering and Construction and addressed to

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

JOE SAMUELS DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



### UNIT STANDARD:

1

### Apply generic crane operational skills

SAQA US ID UNIT STANDAR	D TITLE					
116976 Apply generic cra	116976 Apply generic crane operational skills					
§GB NAME	ISB ACRON	IYM	PROVIDER NAME			
SGB Civil Engineering Construction NSB 12						
FIELD		SUBFIELD			<u>.</u>	
FIELD Physical Planning and Construct	on	SUBFIELD Civil Engine	eering	Construction	<u> </u>	
FIELD Physical Planning and Construct ABET BAND	on UNIT STANDA	SUBFIELD Civil Engine RD TYPE	eering	Construction	CREDITS	

# Specific Outcomes:

SPECIFIC OUTCOME 1

Identify and select suitable cranes.

# SPECJFJC OUTCOME 2

Apply safe practices in crane operation.

## **SPECIFIC OUTCOME** 3

Carry out specified checks and servicing of cranes and associated equipment.

## **SPECIFIC OUTCOME 4**

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



UNIT STANDARD:

2

No. 26952 27

Established in terms of Act 58 of 1995

## Conduct advanced articulated dump truck operations

SAQA US ID	UNIT STANDARD TITLE						
117015	Conduct advance	Conduct advanced articulated dump truck operations					
SGB NAME	NSB ACRON			YM	PROVIDER NAME		
SGB Civil Eng	ineeringConstruction NSB 12						
FIELD			SUBFIELD				
Physical Planning and Construction		Civil Engineering Construction					
ABET BAND		UNIT STANDARD TYPE		NQF	LEVEL	CREDITS	
Undefined		Regular		Leve	el 3	16	

# Specific Outcomes:

SPECIFIC OUTCOME 1

Plan work activity.

### **SPECIFIC OUTCOME** 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

### SPECIFIC OUTCOME 4

Conduct articulated dump truck operations.

### **SPECIFIC OUTCOME 5**

Carry out driver maintenance.

# SPECIFIC OUTCOME 6

Move articulated dump truck from site to site.



## **UNIT STANDARD:**

3

## Conduct advanced backhoe / loader operations

SAQA US ID	UNIT STANDARD TITLE					
117006	Conduct advance	Conduct advanced backhoe/ loader operations				
SGB NAME	NSB ACRON			IYM	PROVIDER NAME	
SGB Civil Eng	jineeringConstruction NSB 12					
FIELD		•	SUBFIELD			
Physical Planning and Construction		Civil Engine	Civil EngineeringConstruction			
ABET BAND		UNIT STANDA	ARD TYPE	NQF	LEVEL	CREDITS
Undefined		Regular		Leve	3	20

# Specific Outcomes:

# SPECIFIC OUTCOME 1

Plan work activity.

### **SPECIFIC OUTCOME** 2

Prepare work area.

#### SPECIFIC OUTCOME 3

Apply concepts of road anatomy.

#### SPECIFIC OUTCOME 4

Conduct the selection, fitting and removing of attachments.

## SPECIFIC OUTCOME 5

Conduct backhoe/loader operations.

### **SPECIFIC OUTCOME 6**

Move backhoelloader from site to site.



# **UNIT** STANDARD:

4

Established in terms of Act 58 of 1995

# Conduct advanced bitumen spray equipment operations

SAQA US ID	UNIT STANDARI	INIT STANDARD TITLE				
116997	Conduct advanced	conduct advanced bitumen spray equipment operations				
SGB NAME	NSB ACRON			IYM	PROVIDER NAME	]
SGB Civil Eng	ineeringConstruction NSB 12					
'FIELD			SUBFIELD			
' <b>FIELD</b> Physical Planr	ing and Constructi	on	SUBFIELD Civil Engine	eering	Construction	
<b>'FIELD</b> Physical Planr <b>ABET BAND</b>	ing and Constructi	on UNIT STANDA	SUBFIELD Civil Engine RD TYPE	eering	Construction	CREDITS

# Specific Outcomes:

SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

#### **SPECIFIC OUTCOME** 3

Conduct bitumen spraying processes.

## SPECIFIC OUTCOME 4

Carry out sprayer equipment maintenance.



## **UNIT STANDARD:**

5

Established in terms of Act 58 of 1995

Conduct advanced continuous bucket trencher operations

SAQA US ID	UNIT STANDARD-TITLE					
116983	Conduct advance	Conduct advanced continuous bucket trencher operations				
SGB NAME	B NAME NSB ACRO		NSB ACRON	IYM	PROVIDER NAME	
SGB Civil Eng	ineeringConstruction NSB 12					
FIELD			SUBFIELD			
Physical Planning and Construction Civil En			Civil Enain	Civil Engineering Construction		
ABET BAND		UNIT STANDA	RD TYPE	NQF	LEVEL	CREDITS
Undefined		Regular		Leve	13	8

## Specific Outcomes:

SPECIFIC OUTCOME 1

Plan work activity.

## SPECIFIC OUTCOME 2

Prepare work area.

# **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

## **SPECIFIC OUTCOME 4**

Conduct the selection, fitting and removing of attachments.

# SPECIFIC OUTCOME 5

Conduct continuous bucket trencher operations.

# **SPECIFIC OUTCOME** 6

Move continuous bucket trencher from site to site.



## UNIT STANDARD:

6

# Conduct advanced dragline operations

SAQA US ID	UNIT STANDARI	JNIT STANDARD TITLE				
117013	Conduct advance	Conduct advanced dragline operations				
SGB NAME	NSB ACRON			IYM	PROVIDER NAME	
SGB Civil Eng	ineering Construction NSB 12					
çı <b>pı n</b> (St						
çı <b>pı n</b>			SUBFIELD			
<b>çıp<del>ı n</del></b> Physical Planr	ing and Constructi	on	SUBFIELD	eering	Construction	
<b>çı<del>pı n</del> Physical Planr ABET BAND</b>	ing and Constructi	on UNIT STANDA	SUBFIELD Civil Engine RDTYPE	eering	Construction	CREDITS

# **Specific Outcomes:**

# **SPECIFIC OUTCOME** 1

Plan work activity.

# **SPECIFIC OUTCOME** 2

Prepare work area.

# SPECIFIC OUTCOME 3

Conduct dragline operations.

# **SPECIFIC OUTCOME 4**

Move draglines from site to site.



# **UNIT STANDARD:**

7

# Conduct advanced face shovel operations

SAQA US ID	UNIT STANDARD TITLE						
117019	Conduct advance	d face shovel op	perations				
SGB NAME	NSB ACRONYM PROVIDER NAME						
SGB Civil Eng	ineering Construction NSB 12						
FIELD			SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engine	ering	Construction		
ABET BAND		UNIT STANDA	RD TYPE	NQF	LEVEL		CREDITS
Undefined		Regular		Leve	13		24

# Specific Outcomes:

## **SPECIFIC OUTCOME** 1

Plan work activity.

# SPECIFIC OUTCOME 2

Prepare work area.

# **SPECIFIC OUTCOME** 3

Conduct face shovel operations.

## **SPECIFIC OUTCOME 4**

Move face shove from site to site.



# UNIT STANDARD:

8

### Conduct advanced front end loader operations

SAQA US ID	UNIT STANDARD TITLE					
116990	Conduct advance	Conduct advanced front end loader operations				
SGB NAME	SGB NAME NSB ACR			IYM	PROVIDER NAME	
SGB Civil Eng	ngineeringConstruction NSB 12					
FIELD			SUBFIELD	)		
Physical Planning and Construction			Civil Engineering Construction			
ABET BAND		UNIT STANDARD TYPE		NQFLEVEL		CREDITS
[Undefined		Regular		Leve	el <b>3</b>	16

## Specific Outcomes:

### SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

## **SPECIFIC OUTCOME 4**

Conduct the selection, fitting and removing of attachments.

### SPECIFIC OUTCOME 5

Conduct front end loader operations.

# SPECIFIC OUTCOME 6

Move front end loader from site to site.



UNIT STANDARD:

9

### Conduct advanced grader operations

SAQA US ID	UNIT STANDARE	D TITLE				
116992	Conduct advanced	d grader operat	tions			
SGB NAME	NSB ACRONYM PROVIDER NAME					
SGB Civil Eng	jineeringConstruction NSB 12					
FIELD			SUBFIELD			
Physical Plann	ing and Construction	on	(Civil Engine	ering	Construction	
ABET BAND		UNIT STAND	ARD TYPE	NQF		CREDITS
Undefined		Regular		Leve	13	26

# **Specific Outcomes:**

# SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

#### **SPECIFIC OUTCOME 4**

Conduct grader operations.

#### **SPECIFIC OUTCOME 5**

Conduct the selection, fitting and removing of attachments.

#### **SPECIFIC OUTCOME** 6

Move grader from site to site.



**UNIT STANDARD:** 

10

## Conduct advanced hot mix asphalt paving machine operations

SAQA USID	UNIT STANDARD TITLE					
117031	Conduct advance	d hot mix asphal	t paving ma	chine	operations	
SGB NAME NSB ACRONYM PROVIDER NAME						
SGB Civil Engineering Construction NSB 12						
FIELD			SUBFIELD			
Physical Planning and Construction			Civil Engineering Construction			
ABET BAND		UNIT STANDA	RD TYPE	NQF	LEVEL	CREDITS
Undefined		Regular		Leve	9 3	а

# **Specific Outcomes:**

## SPECIFIC OUTCOME 1

Plan work activity.

## **SPECIFIC OUTCOME 2**

Prepare work area.

# SPECIFIC OUTCOME 3

Control hot mix asphalt paving machine processes.

# SPECIFIC OUTCOME 4

Move hot mix asphalt paving machine from site to site.



**UNIT STANDARD:** 

11

### Conduct advanced hydraulic excavator operations

SAQA US ID	UNIT STANDARI	UNIT STANDARD TITLE					
117011	Conduct advance	Conduct advanced hydraulic excavator operations					
SGB NAME	AME NSB ACR			IYM	PROVIDER NAME		
SGB Civil Eng	ineering Construction NSB 12						
FIELD			SUBFIELD				
Physical Planning and Construction			Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQF	LEVEL	CREDITS	
Undefined		Regular		Leve	el <b>3</b>	20	

# **Specific Outcomes:**

## SPECIFIC OUTCOME 1

Plan work activity.

## **SPECIFIC OUTCOME 2**

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

## SPECIFIC OUTCOME 4

Conduct the selection, fitting and removing of attachments.

# SPECIFIC OUTCOME 5

Conduct hydraulic excavator operations.

# SPECIFIC OUTCOME 6

Move hydraulic excavator from site to site.

5



### UNIT STANDARD:

12

## Conduct advanced milling machine operations

SAQA US ID UNIT STANDAR	QA US ID UNIT STANDARD TITLE					
117014 Conduct advanced milling machine operations						
SGB NAME	SB ACRON	IYM	PROVIDER NAME			
SGB Civil Engineering Construct	SB 12	1				
FIELD		SUBFIELD				
Physical Planning and Constructi	Civil Engineering Construction					
ABET BAND	UNIT STANDARD TYPE		NQF	LEVEL	CREDITS	

# **Specific Outcomes:**

# SPECIFIC OUTCOME

Plsn work activity.

### **SPECIFIC OUTCOME 2**

Prepare work area.

### **SPECIFIC OUTCOME** 3

Conduct the selection, fitting and removing of attachments.

### **SPECIFIC OUTCOME 4**

Control milling machine operations.

### **SPECIFIC OUTCOME 5**

Move milling machine from site to site.



#### **UNIT STANDARD:**

13

## Conduct advanced mobile crane operations

SAQA US ID	UNIT STANDARI	D TITLE						
116978	Conduct advanced	d mobile crane	ор	perations				
SGB NAME	NSB ACRON			YM	PROVIDER NAME			
SGB Civil Engi	jineering Construction NSB 12							
FIELD			SUBFIELD					
Physical Plann	ing and Constructi	on	(	Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQF	LEVEL	CREDITS		
Undefined		Regular		Level 3 2		20		

# **Specific Outcomes:**

## SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Conduct mobile crane operations.

#### SPECIFIC OUTCOME 4

Carry out documentation, required checks and servicing.

### **SPECIFIC OUTCOME** 5

Move mobile crane from site to site.



# UNIT STANDARD:

14

# Conduct advanced paving screed operations

SAQA US ID	UNIT STANDARI	D TITLE					
116996	Conduct advance	d paving screed	operations				
SGB NAME	NSB ACROI			IYM	PROVIDER NAME		
SGB Civil Eng	gineering Construction NSB						
FIELD		•	SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQF	LEVEL	CREDITS	
Undefined		Regular		Level 3		6	

# **Specific Outcomes:**

## SPECIFIC OUTCOME 1

Plan work activity.

### **SPECIFIC OUTCOME** 2

Prepare work area.

## **SPECIFIC** OUTCOME 3

Conduct the selection, fitting and removing of attachments.

### **SPECIFIC OUTCOME 4**

Control paving screed operations.

### **SPECIFIC OUTCOME 5**

Move paving screed from site to site.



# **UNIT STANDARD:**

15

4

# Conduct advanced rigid body dump truck operations

SAQA US ID	UNIT STANDARD TITLE						
117037	Conduct advance	d rigid body dur	np truck oper	ations	3		
SGBNAME			NSB ACRON	IYM	PROVIDERNAME		
SGB Civil Engineering Construction NSB			NSB 12				
FIELD			SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQF LEVEL		CREDITS	
Undefined		Regular		Level 3		16	

# Specific Outcomes:

SPECIFIC OUTCOME 1 Plan work activity.

#### **SPECIFIC OUTCOME 2**

Prepare work area.

### **SPECIFIC OUTCOME 3**

Apply concepts of road anatomy.

### SPECIFIC OUTCOME 4

Conduct rigid body dump truck operations.

### **SPECIFIC OUTCOME** 5

Carry out driver maintenance.

## SPECIFIC OUTCOME 6

Move rigid body dump truck from site to site.



# UNIT STANDARD:

16

No. 26952 41

# Conduct advanced road rehabilitation machine operations

SAQA US ID	UNIT STANDARI	D TITLE						
117035	Conduct advance	d road rehabilit	tati	ion machine	e oper	ations		
SGB NAME	ME NSB AC			SB ACRON	IYM	PROVIDER NAME		
SGB Civil Engineering Construction N			SB 12					
FIELD			Ţ	SUBFIELD				
Physical Plann	ing and Constructi	ion	0	Civil Engine	ering	Construction		
ABET BAND		UNIT STANDARD TYPE		RD TYPE	NQF LEVEL		0	CREDITS
Undefined		Regular			Leve	13	a	à

# Specific Outcomes:

SPECIFIC OUTCOME 1 Plan work activity.

# SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

## SPECIFIC OUTCOME 4

Conduct road rehabilitation machine operations.

## SPECIFIC OUTCOME 5

Move road rehabilitation machine from site to site.



## **UNIT STANDARD:**

17

### Conduct advanced roller operations

SAQA USID	UNIT STANDARI	UNIT STANDARD TITLE							
117032	Conduct advance	onduct advanced roller operations							
SGB NAME			SB ACRON	IYM	PROVIDER NAME				
SGB Civil Engi	ion N	SB 12			Ī				
FIELD			SUBFIELD						
Physical Plann)	ing and Construct	on	Civil Engin	eering	Construction				
ABET BAND		UNIT STANDAR	D TYPE	NQF	LEVEL	CREDITS			
Undefined		Regular		Leve	3	8			

# Specific Outcomes:

SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

### SPECIFIC OUTCOME 4

Conduct material compaction processes.

### **SPECIFIC OUTCOME 5**

Move roller from site to site.

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# UNIT STANDARD:

18

Conduct advanced scraper operations

SAQA US ID	UNIT STANDARI	UNIT STANDARD TITLE						
117030	Conduct advance	Conduct advanced scraper operations						
SGB NAME NSB ACRON			IYM	PROVIDER NAME				
SGB Civil Eng	Civil Engineering Construction NSB 12							
FIELD			SUBFIELD					
Physical Plann	ing and Constructi	on	Civil Engineering Construction					
ABET BAND		UNIT STANDA	ARD TYPE	NQF	LEVEL	CREDITS		
Undefined		Regular		Level 3		20		

### **Specific Outcomes:**

SPECIFIC OUTCOME 1 Plan work activity.

## **SPECIFIC OUTCOME** 2

Prepare work area.

## **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

### SPECIFIC OUTCOME 4

Conduct scraper coupling procedures.

### **SPECIFIC OUTCOME 5**

Conduct scraper operations.

SPECIFIC OUTCOME 6

Move scraper from site to site.

No. 26952 43



UNIT STANDARD:

19

### Conduct advanced sideboom operations

SAQA US ID	UNIT STANDARD TITLE							
117036	Conduct advance	onduct advanced sideboom operations						
SGBNAME NSB ACRON			IYM	PROVIDER NAME				
SGB Civil Engineering Construction NSB			NSB 12					
FIELD			The second s					
FIELD			SUBFIELD					
<i>FIELD</i> Physical Planr	ning and Construction	on	SUBFIELD	eering	Construction			
<i>FIELD</i> Physical Planr <i>ABET BAND</i>	ning and Construction	on	SUBFIELD	eering NQF	Construction	CREDITS		

# **Specific Outcomes:**

### SPECIFIC OUTCOME 1

Plan work activity.

## SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME 3**

Apply concepts of road anatomy.

### SPECIFIC OUTCOME 4

Conduct the selection, fitting and removing of attachments.

## **SPECIFIC OUTCOME 5**

Conduct sideboom operations.

## SPECIFIC OUTCOME 6

Move sideboom from site to site.



# **UNIT** STANDARD:

20

# Conduct advanced skid steer loader operations

SAQA US ID	UNIT STANDARI	JNIT STANDARD TITLE						
117038	Conduct advance	onduct advanced skid steer loader operations						
SGB NAME	GB NAME NS			IYM	M PROVIDER NAME			
SGB Civil Eng	B Civil Engineering Construction							
FIELD			SUBFIELD					
Physical Plann	ing and Constructi	on	Civil Engin	Civil Engineering Construction				
ABET BAND	٠	UNIT STAND	ARDTYPE	NQF LEVEL		CREDITS		
Undefined		Regular		Leve	el 3	16		

# **Specific Outcomes:**

# SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME 3**

Apply concepts of road anatomy.

### **SPECIFIC OUTCOME 4**

Conduct the selection, fitting and removing of attachments.

### **SPECIFIC OUTCOME** 5

Conduct skid steer loader operations.

### **SPECIFIC OUTCOME** 6

Move skid steer loader from site to site.



UNIT STANDARD:

21

# Conduct advanced tip truck operations

SAQA US ID	UNIT STANDAR	UNIT STANDARD TITLE						
117034	Conduct advance	conduct advanced tip truck operations						
SGB NAME			NSB ACRONYM		PROVIDER NAME			
SGB Civil Engineering Construction			<b>NSB</b> 12					
FIELD			SUBFIELD					
Physical Plann	ing and Constructi	on	Civil Engineering Construction					
ABET BAND		UNIT STANDARD TYPE		NQF LEVEL			CREDITS	
Undefined		Regular		Level 3			16	

## **Specific Outcomes:**

SPECIFIC OUTCOME 1 Plan work activity.

# SPECIFIC OUTCOME 2 Prepare work area.

SPECIFIC OUTCOME 3

Apply concepts of road anatomy.

# SPECIFIC OUTCOME 4

Conduct tip truck operations.

#### **SPECIFIC OUTCOME 5**

Carry out driver maintenance.

### **SPECIFIC OUTCOME 6**

Move tip truck from site to site.



# **UNIT STANDARD:**

22

## Conduct advanced tower crane operations

SAQA US ID	UNIT STANDARI	UNIT STANDARD TITLE					
116981	Conduct advance	onduct advanced tower crane operations					
SGB NAME			NSB ACRONYM	PROVIDER NAME			
SGB Civil Engineering Construction			NSB 12				
FIELD			SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND UNIT STANDA			ARD TYPE NOF	LEVEL	CREDITS		
Undefined		Regular	Leve	13	20		

## Specific Outcomes: SPECIFIC OUTCOME

Plan work activity.

## SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Conduct tower crane operations.

## SPECIFIC OUTCOME 4

Carry out documentation, required checks and servicing.

# SPECIFIC OUTCOME 5

Move tower crane from site to site.



### UNIT STANDARD:

23

# Conduct advanced tracked dozer operations

SAQA US ID	UNIT STANDARI	NIT STANDARD TITLE						
117020	Conduct advance	onduct advanced tracked dozer operations						
SGB NAME			NSB ACRONYM		PROVIDER NAME			
SGB Civil Eng	NSB 12	ISB 12						
FIELD			SUBFIELD					
Physical Plann	ing and Constructi	on	Civil Engine	eering	J Construction			
ABET BAND		UNIT STANDARD TYPE		NQFLEVEL		CREDITS		
Undefined		Regular		Level 3		24		

### **Specific Outcomes:**

SPECIFIC OUTCOME 1 Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

#### SPECIFIC OUTCOME 3

Apply concepts of road anatomy.

#### SPECIFIC OUTCOME 4

Conduct the selection, fitting and removing of attachments.

#### **SPECIFIC OUTCOME** 5

Conduct tracked dozer operations.

### SPECIFIC OUTCOME 6

Move tracked dozer from site to site.



## UNIT STANDARD:

24

### **Conduct advanced tractor operations**

SAQA US ÍD	UNIT STANDARI	D TITLE				-	
117010	Conduct advance	d tractor operati	ons				
SGB NAME			NSB ACRON	SB ACRONYM PROVIDER		1	
SGB Civil Engineering Construction NSB 12			NSB 12				
FIELD		•	SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQFLEVEL		CREDITS	
Undefined		Regular		Level 3		6	

# Specific Outcomes:

SPECIFIC OUTCOME 1

Plan work activity.

## **SPECIFIC OUTCOME** 2

Prepare work area.

## **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

# **SPECIFIC OUTCOME 4**

Conduct the selection, fitting and removing of attachments.

### **SPECIFIC OUTCOME 5**

Conduct tractor operations.

## **SPECIFIC OUTCOME** 6

Move tractor from site to site.



## **UNIT STANDARD:**

25

#### Conduct advanced water cart operations

SAQA US ID	UNIT STANDARI	D TITLE				,, L		
117012	Conduct advance	Conduct advanced water cart operations						
SGB NAME		N	SB ACRONY	YM PI	ROVIDER NAME			
SGB Civil Eng	ineeringConstruct	ion N	SB 12					
FIELD			SUBFIELD					
Physical Planning and Construction			(Civil Enaine	erina Co	onstruction			
ABET BAND		<b>UNIT</b> STANDAR	RD TYPE	NQF LE	EVEL	CREDITS		
Undefined		Regular	lL	Level 3		16		

# Specific Outcomes:

# SPECIFIC OUTCOME 1

Plan work activity.

### SPECIFIC OUTCOME 2

Prepare work area.

# **SPECIFIC OUTCOME** 3

Apply concepts of road anatomy.

## SPECIFIC OUTCOME 4

Conduct water cart operations.

## SPECIFIC OUTCOME 5

Carry out driver maintenance.

# SPECIFIC OUTCOME 6

Move water cart from site to site.





# UNIT STANDARD:

26

No. 26952 51

Conduct advanced wheeled dozer operations

SAQA US ID	UNIT STANDARD TITLE						
117028	Conduct advanced wheeled dozer operations						
SGB NAME	B NAME NSB ACRONY				PROVIDER NAME		
SGB Civil Engi	Engineering Construction NSB 12						
FIELD			SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND		UNIT STANDARD TYPE		NQF LEVEL		CREDITS	
Undefined		Regular		Level 3		20	

# Specific Outcomes:

## SPECIFIC OUTCOME 1

Plan work activity.

## **SPECIFIC OUTCOME** 2

Prepare work area.

## **SPECIFIC OUTCOME 3**

Apply concepts of road anatomy.

## SPECIFIC OUTCOME 4

Conduct the selection, fitting and removing of attachments.

### **SPECIFIC OUTCOME 5**

Conduct wheeled dozer operations.

# **SPECIFIC OUTCOME** 6

Move wheeled dozer from site to site.



## UNIT STANDARD:

27

Demonstrate an understanding of the principles of the construction of layerworks

SAQA US ID	UNIT STANDARI	D TITLE					
117039	Demonstrate an understanding of the principles of the construction of layerworks						
SGB NAME		V	NSB ACRONYM	PROVIDER NAME			
SGB Civil Eng	ineering Construct	ion [	NSB 12				
FIELD			SUBFIELD				
<i>FIELD</i> Physical Plann	ing and Constructi	on	SUBFIELD Civil Engineerir	ng Construction			
FIELD Physical Plann ABET BAND	ing and Constructi	on UNIT STANDA	SUBFIELD Civil Engineerir RD TYPE NQ	ng Construction <b>F LEVEL</b>	(CREDITS		

## Specific Outcomes:

### SPECIFIC OUTCOME 1

Demonstrate an understanding of the principles of layer works resource procurement.

## **SPECIFIC OUTCOME** 2

Demonstrate an understanding of the principles of programming processes for layer works .

### **SPECIFIC OUTCOME** 3

Demonstrate an understanding of the need for the preparation of the work area for layer works.

### **SPECIFIC OUTCOME 4**

Demonstrate an understanding of the principles of layer works construction processes.

## **SPECIFIC OUTCOME 5**

Demonstrate an understanding of the implementation principles of layer works quality control process.

## SPECIFIC OUTCOME 6

Demonstrate an understanding of the implementation principles of layer works production control processes.

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# UNIT STANDARD:

28

# Demonstratean understanding of the principles of bulk earthworks construction

SAQA US ID	UNIT STANDARI	D TITLE					
117040	Demonstrate an u	Demonstrate an understanding of the principles of bulk earthworks construction					
SGB NAME			NSB ACRON	IYM	<b>PROVIDER NAME</b>		
SGB Civil Eng	ineering Construct	ion	<b>NSB</b> 12				
FIELD			SUBFIELD				
Physical Plann	ing and Constructi	on	Civil Engineering Construction				
ABET BAND		UNIT STANDA	RD TYPE	NQF	LEVEL		CREDITS
Undefined	,	Regular		Leve	13		10

# Specific Outcomes:

### SPECIFIC OUTCOME 1

Demonstrate an understanding of the principles of bulk earthworks resource procurement.

### **SPECIFIC OUTCOME** 2

Demonstrate an understanding of the principles of bulk earthworks programming processes.

# SPECIFIC OUTCOME 3

Demonstrate an understanding of the principles of bulk earthworks quality control process implementation.

### SPECIFIC OUTCOME 4

Demonstrate an understanding of the principles of bulk earthworks production control process implementation.



## UNIT STANDARD:

29

Established in terms of Act 58 of 1995

## Sling complex loads and communicate during crane operations

SAQA US ID	UNIT STANDARD TITLE						
116986	Sling complex loa	Sling complex loads and communicate during crane operations					
SGB NAME	NSB ACRO			IYM	PROVIDER NAME		
SGB Civil Eng	gineering Construction NSB 12						
FIELD			SUBFIELD				
Physical Planning and Construction			Civil Engineering Construction				
ABET BAND		UNIT STANDAR		NQF	LEVEL	CREDITS	
Undefined		Regular		Leve	3	12	

# **Specific Outcomes:**

# SPECIFIC OUTCOME 1

Identify and select appropriate lifting equipment.

## **SPECIFIC OUTCOME 2**

Inspect and evaluate lifting gear.

## **SPECIFIC OUTCOME** 3

Prepare and sling complex loads.

## SPECIFIC OUTCOME 4

Communicate during crane operations.





## **UNIT STANDARD:**

30

### Use a mobile crane to carry out demolition activities with demolition equipment

SAQA US ID	UNIT STANDARI	DTITLE							
116989	Use a mobile crar	Jse a mobile crane to carry out demolition activities with demolition equipment							
SGB NAME			NSB ACRON	IYM	PROVIDERNAME				
SGB Civil Engi	ineering Construct	ion	NSB 12						
FIELD			SUBFIELD						
Physical Plann	ing and Constructi	on	]Civil Engine	eering	Construction				
ABET BAND		UNIT STAND	ARDTYPE	NQF	LEVEL	CREDITS			
Undefined		Regular		Leve	13	a			

# **Specific Outcomes:**

# SPECIFIC OUTCOME 1

Plan work activity.

### **SPECIFIC** OUTCOME 2

Prepare work area.

# **SPECIFIC OUTCOME** 3

Prepare crane for demolition service.

## **SPECIFIC OUTCOME 4**

Perform demolition activities.

## SPECIFIC OUTCOME 5

Re-rig and functionally test crane for routine mobile crane use.



UNIT STANDARD:

31

## Use a mobile crane to carry out pile driving

SAQA US ID UNIT STANDARI	D TITLE					
117001 Use a mobile crane to carry out pile driving						
SGB NAME	SB ACRON	YМ	PROVIDER NAME	T		
SGB Civil EngineeringConstruct	SB 12					
FIELD		SUBFIELD				
Physical Planning and Construction	Civil Engineering Construction					
ABET BAND	UNIT STANDARD TYPE		NQF	- LEVEL	CREDITS	
Undefined	Regular		Leve	el <b>3</b>	8	

# **Specific Outcomes:**

## SPECIFIC OUTCOME 1

Plan work activity.

#### SPECIFIC OUTCOME 2

Prepare work area.

### **SPECIFIC OUTCOME** 3

Prepare a mobile crane for piling service.

### SPECIFIC OUTCOME 4

Erect pile.

### **SPECIFIC** OUTCOME 5

Extract pile.

## **SPECIFIC OUTCOME** 6

Re-rig and functionally test crane for routine mobile crane use.



QUALIFICATION:

National Certificate: Construction: Advanced Crane Operations

SAQA QUAL ID	QUALIFICATION TITLE							
49080	National C	National Certificate: Construction: Advanced Crane Operations						
SGB NAME	SGB Civil	GB Civil Engineering Construction						
NSB ACRONYM	M PROVIDER NAME							
NSB 12								
QUAL TYPE		FIE	LD			SUBFIELD		
National Certificate Physical Planning and				ng and Constru	iction	Civil Engineering Construction		
ABET BAND	MINI	MU	<b>M</b> CREDITS	NQF LEVEL	QUALIFICA	TION CLASS		
Undefined	lefined 127			Level 3	Regular-Unit Stds Based			

### 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 or 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 Advanced Crane Operations Practitioners in the Industry, ensuring the uptiftment 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 was also equip learners with a foundation for further intellectual development, opportunities for gainful employment and reward for contributions to society.

This Qualification vol 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 Advanced Crane Operations - NQF Level 3: > Recognition of Prior learning: Allows for Recognition of Prior Learning, especially as a means or career advancement.

> Credibility: Learning Outcomes are a result of consensus by the Industry.

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> 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 advanced construction crane activities on Civil Engineering and Construction sites, whether in micro, small, medium or large operations.

The introduction of a unit standards based National Certificate in Construction: Advanced Crane Operations vol 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 Advanced 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 advanced skills base of the country.

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

This Qualification lays the basis for further learning towards the National Certificate *in* Construction: Plant Supervision - NQF Level 4

The learning pathway for Construction Plant Operation 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:

- **7** 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 2.

**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

49080

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against the assessment criteria and specific outcomes contained in the relevant Unit Standard/s.

#### QUALIFICATIONRULES

Credit total: Minimum of 127 credits

In order to be awarded the Qualification, the learner has to prove competence in all 36 of the Fundamental and 30 Core credits from Exit Level Outcomes 1 and 2 as well as 41 Core credits from Exit Level Outcomes 3,4 or 5 and at least 20 credits of the Elective credits of the learner's choice from Exit Level Outcomes 3, 4 or 5.

Exit Level Outcomes 3, 4 and 5 address the various key work areas in construction.

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 **d** the total credit value 127 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 site work and construction practices is compulsory in order for learners to exit as competent Construction Crane Operators who have acquired competencies in various areas Of technical specialisation.

### WITLEVEL OUTCOMES

Exit level outcome 1: Communicate in a variety of ways.

Associated unit standards:

Fundamental (20 credits):

- > Accommodate audience and context needs in oral communication
- interpret and use information from texts
- > Write texts for a range of communicative contexts
- > Use language and communication in occupational learning programmes

Core (22 credits):

- > Maintain records for civil construction sites
- > Read and interpret construction drawing and specifications
- > Procure Materials, Tools and Equipment

Exit level outcome 2: Use mathematics in real life education training and development.

Associated unit standards:

Fundamental (16 credits):

> Demonstrate understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations

> Use mathematics to investigate and monitor the financial aspects of personal and business issues

Investigate life and work related problems using data and probabilities

> Measure, estimate and calculate physical quantities and explore, describe and represent, interpret and justify geometrical relationships in two and three-dimensional space relevant to the lifeor workplace O the community

Core (8 credits):

> Calculate Construction Quantities to develop a work plan.

Exit level outcome 3: Conduct advanced tower crane operations.

Associated unit standards: Core (41 credits):

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- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > implement roadside safety procedures
- > Perform basic fire fighting
- > Describe and interpret the Composition, Construction Sequence and Processes of the Construction Industry
- > identify describe and use materials in civil engineering construction
- > Apply generic crane operational skills
- > Sling complex loads and communicate during crane operations

Elective (20 credits):

> Conduct Advanced Tower Crane Operations

Exit level outcome 4: Conduct advanced mobile crane operations.

Associated unit standards:

- Core (41 credits):
- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > Implement roadside safety procedures
- > Perform basic fire fighting
- > Describe and interpret the Composition, Construction Sequence and Processes of the Construction Industry
- > Identify describe and use materials in civil engineering construction
- > Apply generic crane operational skills
- > Sling complex loads and communicate during crane operations

Elective (20 credits):

> Conduct advanced mobile crane operations

Exit level outcome 5: Conduct specialised mobile crane operations.

Associated unit standards:

Core (41 credits):

- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > Implement roadside safety procedures
- > Perform basic fire fighting
- > Describe and Interpret the Composition, Construction Sequence and Processes of the Construction Industry
- > Identify describe and use materials in civil engineering construction
- > Apply generic crane operational skills
- > Sling complex loads and communicate during crane operations

Elective (16 credits):

- > Use a Mobile Crane to carry out demolition activities with demolition equipment
- > Use a Mobile Crane to carry out piling

### ASSOCIATED ASSESSMENT CRITERIA

For award of the whole qualification:

Candidates must achieve the required number of credits as specified in the rules of combination as well as the criteria specified for integrated assessment below.

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For award **d** part of the qualification:

Recognition will be awarded for each unit standard achieved. Candidates are urged however to seek to achieve the required unit standards associated with a given Exit Level Outcome i.e. the core and elective unit standards for any particular Exit Level Outcome. This will ensure that candidates emerge with coherent and meaningful parts of a qualification.

Integrated Assessment:

Assessment will take place according to the detailed specifications indicated in the unit standard associated with each Exit Level Outcome.

Over and above the achievement of the specified Unit Standards, evidence of integration will be required as per the following broad criteria:

Integrative criteria:

Assessors should note that the evidence of integration (as below) could be presented by candidates when being assessed against Unit Standards/Specific Outcomes, therefore negating the need for separate assessments for each Unit Standard/Specific Outcome. Assessments that are well designed make it possible to gain evidence for each Unit StandardISpecific Outcomes and integration of Unit Standards/Specific Outcomes simultaneously.

Exit level outcome 1: Communicate in a variety of ways

> Communication within and about the advanced plant operation process is clear, understandable and effective.

> Construction drawing information is correctly interpreted and applied.

Exit level outcome 2 Use mathematics in real life education training and development

> The mathematics is applied within a variety of advanced plant operation and construction processes.

Exit level outcome 3: Conduct advanced tower crane operations

> Health and safety principles are applied as per related regulations and codes of practice in all work practices.

> Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, **work** area preparation, quality control and production control

> Appropriate lifting equipment, packing and dunnage is identified and selected according to weights of various loads in accordance with the relevant codes of practice and company procedures

> Lifting gear is inspected and evaluated and complex loads are prepared and slung in accordance with relevant Codes of Practice and Company procedures.

> Hand signals and communication for cranes and lifting appliances is in accordance with recognised practice

> Tower Crane is moved from Site to Site in accordance with statutory requirements, local body regulations, company procedures and any other special requirements

Exit level outcome 4: Conduct advanced mobile crane operations

> Health and safety principles are applied as per related regulations and codes of practice in all work practices.

*r* Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

 $\tau$  Suitable cranes are identified and selected in accordance with company procedures and checked to crane manufacturers' specifications

> Work activities are planned and work areas prepared according to worksite procedures

> Appropriate lifting equipment, packing and dunnage is identified and selected according to weights of various loads in accordance with the relevant codes of practice and company procedures

> Lifting gear is inspected and evaluated and complex loads are prepared and slung in accordance with relevant codes of practice and company procedures.

> Hand signals and communication for cranes and lifting appliances is in accordance with recognised

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#### practice

Exit level outcome 5: Perform specialised activities using a mobile crane

> Health and safety principles are applied as per related regulations and codes of practice in all work practices.

> Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

> Suitability of crane for specialised services is confirmed in accordance with the crane manufacturer's operating manual, the company policy and procedures for use of cranes, and recognised standards.

> Work activities are planned and work areas prepared according to worksite procedures

Crane is rigged for specialised service, operated in accordance with crane manufacturer's operating instructions for specialised service and re-rigged for routine mobile crane use on completion of specialised wak

Integrated assessment provides learners with an **opportunity** to display an ability to integrate **practical** performance, actions, concepts and theory across **Unit** Standard **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

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

Assessment Principles:

Assessment should be in accordance with the following general and specific principles:

The initial assessment activities should focus on gathering evidence in terms of the main outcomes expressed in the titles of the unit standards to ensure assessment is integrated rather than fragmented. Where assessment at title level is unmanageable, focus assessment on each specific outcome, or groups of specific outcomes, taking into special note of the need for integrated assessment.

> Evidence must be gathered across the entire range specified in each unit standard, as applicable. Assessment activities should enable candidates to display an ability to integrate practical performance, actions, concepts and theory across Unit Standard. Where simulations or role-plays are used, there should be supporting evidence to prove that the candidate is able to perform to the required standard in the real work-related situation.

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

> Summative assessment may consist of written tests and accompanying assignments, case studies and practical demonstrations. Summative assessments would only be conducted once the learner has

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indicated that he/she is ready to undergo summative assessment.

> All assessments should be conducted in accordance with the following universally accepted principles of assessment:

> Use appropriate, fair and manageable methods that are integrated into real work-related or learning situations!

- > Judge evidence on the basis of its validity, currency, authenticity and sufficiency; and
- > Ensure assessment processes are systematic, open and consistent.

Before qualifying, learners **w** 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

National Training Information Service - Australia:

No National Certificate in Crane Operations exist 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

There are no Units of Competency 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.

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 we allow learners access to a National Certificate in Construction: Plant Supervision.

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 ETQA (RSA, 1998b) for the provision of programmes that result in the outcomes specified for the National Certificate in Construction: Advanced Crane Operations - NQF Level 3.

The relevant ETQA, or any other ETQA who have a Memorandum of Understanding in place with CETA - **ETQA**, is 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 ETQAs 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); and
- > A minimum of three years practical relevant occupational experience at NQF level 3

#### NOTES

Structure of the Qualification:

The rationale and purpose provides a broad description of what holders of the qualification can do.

The qualification is further defined by means of a number of Exit Level Outcomes (ELOs). These ELOs provide a means for candidates to exit the qualification with recognition for this cluster of competencies, even if they do not achieve the whole qualification. The ELOs also provide a means to organise the unit standards into coherent clusters thus facilitating integrated assessment.

Each ELO is further defined by means of the associated unit standards. Some of these unit standards may be indicated as CORE (compulsory), while others may be indicated as ELECTIVES, with rules of combination provided.

Assessment criteria **are** provided for each ELO where required, mainly **to** address the need for evidence of integration of competencies.

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Each unit standard contains details of the specific outcomes, range statements and assessment criteria, thus making it possible for assessors to judge competence in terms of each unit standard, while at the same time providing possible evidence of integration of competencies.

#### 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	12483 Perform basic first aid	Level 2	4	Reregistered
core	12484 Perform basic fire fighting	Level 2	4	Reregistered
core	13971 Describe and interpret the composition. roleplayers, processes and role of the construction industry	Level2	3	Registered
Core	13972 Identify describe and use materials in civil engineering construction	Level 2	4	Registered
Core	14336 Maintain Records For Civil Construction Sites	Level2	2	Registered
Core	14560 Handle, transport. store and utilize hazardous materials on a construction site	Level 2	5	Registered
Core	14561 Implement road side safety	Level 2	2	Registered
Core	15034 Work in confined spaces on construction sites	Level 2	2	Registered
Core	9962 Calculate construction quantities to develop a work plan	Level 3	8	Registered
Core	9968 Procure materials, tools and equipment	Level 3	10	Registered
core	14580 Read and interpret construction drawings and specifications	Level 3	10	Registered
core	116976 Apply generic crane operational skills	Level3	5	Draft - Prep for P comment
core	116986 Sling complex loads and communicate during crane operations	Level 3	12	Draft - Prep for P Comment
Elective	116978 Conduct advanced mobile crane operations	Level 3	20	Draft - Prep for P Comment
Elective	116981 Conduct advanced tower crane operations	Level3	20	Draft - Prep for P Comment
Elective	116989 Use a mobile crane to carry out demditionactivities with demolition equipment	Level 3	8	Draft - Prep for P
Elective	117001 Use a mobile crane to carry out pile driving	Level 3	8	Draft- Prep far P Comment
Fundamental	7456 Use mathematicsto investigate and monitor the financial aspects of personal, business and national issues	Level 3	2	Registered
Fundamental	8968 Accommodate audience and context needs In oral communication	Level 3	5	Registered
Fundamental	8969 Interpret and use information from texts	Level 3	5	Registered
Fundamental	8970 Write texts for a range of communicativecontexts	Level 3	5	Registered
Fundamental	8973 Use language and communication in occupational learning programmes	Level 3	5	Registered
Fundamental	9010 Demonstratean understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2	Registered
Fundamental	9012 Investigate life and work related problems using data and probabilities	Level 3	5	Registered
Fundamental	9013 Describe, apply, analyse and calculate shape and motion in 2-and 3- dimensionalspace in different contexts	Level 3	4	Registered
Fundamental	14086 Work with a wide range of patterns and basic functions and sofve related problems	Level 3	3	Registered



**QUALIFICATION:** 

stablished in terms of Act 58 of 1995

National Certificate: Construction: Advanced Plant Operations

SAQA QUAL ID	QUALIFICA	TION TITLE							
49081	National Ce	National Certificate: Construction: Advanced Plant Operations							
SGB NAME	SGB Civil E	SGB Civil Engineering Construction							
NSB ACRONYM		PROVIDER	NAME						
NSB 12									
QUAL TYPE	F	TELD			SUBFIELD				
National Certifica	te P	hysical Planni	ing and Constru	ction	Civil Engineering Construction				
ABET BAND	MINIM	UM CREDITS	NQF LEVEL	QUALIFICA	TION CLASS				
Undefined .	122		Level 3	Regular-Unit	Stds Based				

#### PURPOSE OF THE QUALIFICATION

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

- > Civil & BuildingConstruction 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 advanced 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 Advanced Construction Plant Operations practitioners in the Industry, ensuring the upliftment of standards in general.

The combination of learning the outlined outcomes vol 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 voll 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 Advanced Construction Plant Operations practitioners, thereby facilitating social and economic transformation, empowerment and upliftment in the Industry and country in general.

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**NQF** Principles

- 1. Recognition of Prior learning
- 2. Credibility
- 3. Relevance
- 4. Access
- 5. Articulation/Progression

National certificate in advanced plant operations - NQF Level 3

1. Allows for Recognition of Prior Learning, especially as a means of career advancement

2. Learning Outcomes are a result of consensus by the Industry

3. Consulting workshops indicated a demand for a Unit Standard based Qualification in Construction Plant Operations

- 4. Removes traditional barriers to Higher Education
- 5. 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 **3** Unit Standard 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.

The introduction of a Unit Standard based National Certificate in Construction: Plant Advanced Operations will allow learners, both unemployed and employed, to reach their full potential of advancement and values allow for Recognition of Prior Learning.

This qualification will facilitate the development of a professional community of Construction **Plant** Operators with advanced competency skills.

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 advanced skills base **d** the country.

The combination of learning outcomes **v** provide qualifying learners with applied competence in the integration of general construction site work and technical competencies, as **v** as areas **of** advanced specialisation in construction plant operations.

This Qualification lays the basis for further learning towards the National Certificate in Construction: Plant Supervision - NQF Level 4

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

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#### **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 Level Certificate including, Communication and Mathematics at **NQF** Level 2.

#### 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 vi be assessed against the assessment criteria and specific outcomes contained in the relevant Unit Standard/s.

#### **QUALIFICATION RULES**

Credit total: Minimum of 122 credits

In order to be awarded the Qualification, the learner has to prove competence in all 36 of the Fundamental and 30 Core credits from Exit level Outcomes 1 and 2 as well as 40 Core credits from Exit Level Outcomes 3, 4, 5 or 6 and at least 16 credits of their choice from any of the Elective credits of the learner's choice from Exit Level Outcomes 3, 4, 5 or 6.

Exit Level Outcomes 3, 4, 5 and 6 address the various key work areas in construction.

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.

### EXIT LEVEL OUTCOMES

Exit Level Outcome 1: Communicate in a variety of ways (, Core 22) Associated unit standards: Fundamental (20 credits)

- > Accommodate audience and context needs in oral communication
- > Interpret and use information from texts
- > Write texts for a range of communicative contexts
- > Use language and communication in occupational learning programmes

Core (22 credits)

- > Maintain records for civil construction sites
- > Read and interpret construction drawing and specifications
- > Procure Materials, Tools and Equipment

Exit Level Outcome 2: Use mathematics in real life education training and development Associated unit standards:

#### Fundamental (16 credits)

> Demonstrate understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations

> Use mathematics to investigate and monitor the financial aspects of personal and business issues

Investigate life and work related problems using data and probabilities

> Measure, estimate and calculate physical quantities and explore, describe and represent, interpret and justify geometrical relationships in two and three-dimensional space relevant to the life or workplace of the community

#### Core (8 credits)

> Calculate Construction Quantities to develop a work plan.

Exit Level Outcome 3: Conduct advanced bulk earthworks movement operations Associated unit standards:

Core (40 credits)

- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > Implement roadside safety procedures
- > Perform basic fire fighting

Describe and Interpret the Composition, Construction Sequence and Processes of the Construction Industry

- > Identify describe and use materials in civil engineering construction
- > Demonstrate and understanding of the principles of the construction of Layerworks

#### Elective (188)

- > Conduct Advanced Articulated Dump Truck Operations
- > Conduct Advanced Dragline Operations
- > Conduct Advanced Face Shovel Operations
- > Conduct Advanced Front End Loader Operations
- > Conduct Advanced Hydraulic Excavator Operations
- > Conduct Advanced Scraper Operations
- > Conduct Advanced Tip Truck Operations
- > Conduct Advanced Tracked Dozer Operations
- > Conduct Advanced Wheeled dozer Operations
- > Conduct Advanced Front End Loader Operations

Exit Level Outcome 4: Conduct advanced layerworks operations Associated unit standards:

Core (40 credits)

- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > Implement roadside safety procedures
- > Perform basic fire fighting

> Describe and Interpret the Composition, Construction Sequence and Processes of the Construction Industry

- > Identify describe and use materials in civil engineering construction
- > Demonstrate and understanding of the principles of the construction of Layerworks

Elective (150 credits)

- > Conduct Advanced Grader Operations
- > Conduct Advanced Scraper Operations
- > Conduct Advanced Articulated Dump Truck Operations
- > Conduct Advanced Tip Truck Operations
- > Conduct Advanced Tracked Dozer Operations
- > Conduct Advanced Wheeled dozer Operations
- Conduct Advanced Front End Loader Operations
- > Conduct Advanced Tractor Operations
- > Conduct Advanced Water Cart Operations
- > Conduct Advanced Roller Operations

Exit Level Outcome 5: Conduct advanced surfacing operations (Core 40, Elective 67) Associated unit standards:

### Core (40 credits)

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- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > Implement roadside safety procedures

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> Perform basic fire fighting

> Describe and Interpret the Composition, Construction Sequence and Processes of the Construction Industry

- > Identify describe and use materials in civil engineering construction
- > Demonstrate and understanding of the principles of the construction of Layerworks
- Elective (67 credits)
- > Conduct Advanced Roller Operations
- > Conduct Advanced Tip Truck Operations
- > Conduct Advanced Milling Machine Operations
- > Conduct Advanced Paving Screed Operations
- > Conduct Advanced Rigid Body Dump Truck Operations
- > Conduct Advanced Road Rehabilitation Machine Operations
- > Conduct Advanced Hot Mix Asphalt Paving Machine Operations
- > Conduct Advanced Bitumen Spray Equipment Operations

Exit Level Outcome 6: Conduct advanced trenching operations Associated unit standards:

Core (40 credits)

- > Perform basic fire fighting
- > Handle, transport, store and utilize hazardous materials on a construction site
- > Work in confined spaces on a construction site
- > implement roadside safety procedures
- > Perform basic fire fighting

> Describe and Interpret the Composition, Construction Sequence and Processes of the Construction Industry

- > identify describe and use materials in civil engineering construction
- > Demonstrate and understanding of the principles of the construction of Layerworks
- Elective (72 credits)
- > Conduct Advanced Backhoe/Loader Operations
- > Conduct Advanced Hydraulic Excavator Operations
- > Conduct Advanced Continuous Bucket Trencher Operations
- > Conduct Advanced Sideboom Operations
- > Conduct Advanced Skid Steer Loader Operations

#### ASSOCIATED ASSESSMENT CRITERIA

For award of the whole qualification

Candidates must achieve the required number of credits as specified in the rules of combination as well as the criteria specified for integrated assessment.

For award of part of the qualification

Recognition will be awarded for each unit standard achieved. Candidates are urged however to seek to achieve the required unit standards associated with a given Exit Level Outcome i.e. the core and elective unit standards for any particular Exit Level Outcome. This will ensure that candidates emerge with coherent and meaningful parts of a qualification.

integrated Assessment:

Assessment will take place according to the detailed specifications indicated in the unit standard associated with each Exit Level Outcome.

Over and above the achievement of the specified Unit Standards, evidence of integration val be required as per the following broad criteria:

Integrative criteria Assessors should note that the evidence of integration (as below) could be presented by candidates when

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being assessed against Unit Standards/Specific Outcomes, therefore negating the need for separate assessments for each Unit Standard/Specific Outcome. Assessments that are **well** designed make it possible to gain evidence for each Unit Standard/Specific Outcomes and integration of Unit Standards/Specific Outcomes simultaneously.

Exit level outcome 1: Communicate in a variety of ways

> Communication within and about the advanced plant operation process is clear, understandable and effective.

> Construction drawing information is correctly interpreted and applied.

Exit level outcome 2: Use mathematics in real life education training and development

> The mathematics is applied within a variety of advanced plant operation and construction processes.

Exit level outcome 3: Conduct advanced bulk earthworks movement operations

Health and safety principles are applied as per related regulations and codes of practice in all work practices.

> Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

Plant and/or attachments are selected according to material and project type.

Plant operation is conducted effectively and efficiently in complex bulk earthworks movement operations. The planning of work activities includes the preparation of work area's the application road Anatomy Concepts and the movement of materials

> Operator Maintenance is carried out and plant moved from site to site as per relevant regulations.

Exit level outcome 4: Conduct advanced layerworks operations

> Health and safety principles are applied as per related regulations and codes of practice in all work practices.

Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

> Plant and/or attachments are selected according to material and project type.

> Plant operation is conducted effectively and efficiently in complex layerworks operations

> The planning of work activities includes the preparation of work area's the application road Anatomy Concepts and the movement of materials

> Operator Maintenance is carried out and plant moved from site to site as per relevant regulations.

Exit level outcome 5: Conduct advanced surfacing operations

> Health and safety principles are applied as per related regulations and codes of practice in **all work** practices.

> Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

> Plant and/or attachments are selected according to material and project type.

> Plant operation is conducted effectively and efficiently in complex surfacing operations

> The planning of work activities includes the preparation of work area's the application road Anatomy Concepts and the movement of materials

> Operator Maintenance is carried out and plant moved from site to site as per relevant regulations

Exit level outcome 6: Conduct advanced trenching operations

> Health and safety principles are applied as per related regulations and codes of practice in all work practices.

> Principles and processes in the construction industry are applied in all plant operation processes, the implementation of resource procurement, programming, work area preparation, quality control and production control

> Plant and/or attachments are selected according to material and project type.

> Plant operation is conducted effectively and efficiently in complex trenching operations, attachments are

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correctly selected, fitted and removed according to material and project type

> The planning of work activities includes the preparation of work area's and the movement of materials

> Operator Maintenance is carried out and plant moved from site to site as per relevant regulations.

In essence, integrated assessment provides learners with an opportunity to display an ability to integrate practical performance, actions, concepts and theory across Unit Standard 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

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 vuel** 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

#### Assessment Principles

Assessment should be in accordance with the following general and specific principles:

a. The initial assessment activities should focus on gathering evidence in terms of the main outcomes expressed in the titles of the unit standards to ensure assessment is integrated rather than fragmented. Where assessment at title level is unmanageable, focus assessment on each specific outcome, or groups of specific outcomes, taking into special note of the need for integrated assessment.

**b.** Evidence must be gathered across the entire range specified in each unit standard, as applicable. Assessment activities should enable candidates to display an ability to integrate practical performance, actions, concepts and theory across Unit Standard. Where simulations or role-plays are used, there should **be** supporting evidence to prove that the candidate is able to perform to the required standard in the real **work** -related situation.

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

d. Summative assessment may **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.

e. All assessments should be conducted in accordance with the following universally accepted principles of assessment:

> Use appropriate, fair and manageable methods that are integrated into real work -related or learning situations;

> Judge evidence on the basis of its validity, currency, authenticity and sufficiency; and

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> Ensure assessment processes are systematic, open and consistent.

### INTERNATIONAL COMPARABILITY

New Zealand Qualifications Authority:

The National Certificate in Construction: Plant Operations was benchmarked against the following New

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, , Zealand Qualifications:

> National Certificate in Civil Plant Operation Skilled, Multi-skilled

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

Other New Zealand Civil Contracting National Certificates are:

- > Civil Construction Works IntroductorySkills
- > 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)

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 we allow learner's access to a National Certificate in Construction: Plant supervision.

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.

Structure of the Qualification:

The rationale and purpose provides a broad description of what holders of the qualification can do.

The qualification is further defined by means of a number **of** Exit Level Outcomes **(ELOs).** These ELOs provide a means for candidates to exit the qualification with recognition for this cluster of competencies, even if they do not achieve the whole qualification. The ELOs also provide a means to organise the unit standards into

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coherent clusters thus facilitating integrated assessment. Each ELO is further defined by means of the associated unit standards. Some of these unit standards may be indicated as CORE (compulsory), while others may **be** indicated as ELECTIVES, with rules of combination provided. Assessment criteria are provided for each ELO where required, mainly to address the need for evidence of integration of competencies.

Each unit standard contains details of the specific outcomes, range statements and assessment criteria, thus making it possible for assessors to judge competence in terms of each unit standard, while at the same time providing possible evidence of integration of competencies.

#### **MODERATION OPTIONS**

Assessment of learner achievements takes place at providers accredited by the relevant ETQA (RSA, 1998b) for the provision of programmes that result in the outcomes specified for the National Certificate in Construction: Advanced Plant Operations - NQF Level 3.

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

Anyone assessing a learner,  $\alpha$  moderating the assessment of a learner, against this Qualification must be registered as an assessor with the relevant ETQA. Any institution offering learning that  $\sqrt{n}$  enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.

Assessment and moderation of assessment will be overseen by the relevant **ETQA** according to the **ETQAs** policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQAs 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 Standard as **wel** 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**.

### CRITERIAFOR 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); and

> A minimum of three years practical relevant occupational experience at NQF level 3

#### **NOTES**

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### **UNIT STANDARDS**

(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

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core	12484 Perform basic fire fighting		Level 2	4	Reregistered
Core	12483 Perform basic first aid		Level 2	4	Reregistered
	UNIT STANDARD ID AND	TITLE	LEVEL C	REDITS	S STATUS

Core	13971 Describe and interpret the composition, roleplayers, processes and role of the construction industry	Level2	3	Registered
Core	13972 Identify describe and use materials in civil engineering construction	Level 2	4	Registered
core	14336 Maintain Records For CivilConstruction Sites	Level2	2	Registered
core	14560 Handle, transport, store and utilize hazardous materialson a construction site	Level2	5	Registered
core	14561 Implementroad side safety	Level2	2	Registered
Core	15034 Walk in confined spaces on construction sites	Level 2	2	Registered
cons	9962 Calculate construction quantities to develop a work plan	Level 3	8	Registered
core	9968 Procure materials, tools and equipment	Level3	10	Registered
cons	14580 Read and interpret construction drawings and specifications	Level 3	10	Registered
Core	117039 Demonstratean understanding of the principles of the construction d layerworks	Level3	10	Draft - Prep for P
core	117040 Demonstratean understanding of the principles of bulk earthworks construction	Level 3	10	Draft - Prep for P Comment
Elective	116983 Conduct advanced continuous bucket trencher operations	Level 3	8	Draft - Prep for P Comment
Elective	116990 Conduct advanced front end M e r operations	Level3	16	Draft - Prep for P Comment
Elective	116992 Conduct advanced grader operations	Level3	26	Draft - Prep for P comment
Elective	1 16996 Conduct advanced paving screed operations	Level3	6	Draft - Prep for P Comment
Elective	116997 Conduct advanced bitumen spray equipment operations	Level 3	5	Draft - Prep for P Comment
Elective	117006 Conduct advanced backhoe/ loader operations	Level 3	20	Draft - Prep for P comment
Elective	117010 Conductadvanced tractoroperatii	Level3	6	Draft - Prep for P Comment
Elective	117011 Conduct advanced hydraulk excavator operations	Level3	20	Draft - Prep for P Comment
Elective	117012 Conduct advanced water cart operations	Level3	6	Draft - Prep for P Comment
Elective	1 17013 Conduct advanced dragline operations	Level3	8	Draft - Prepfor P Comment
Elective	117014 Conduct advanced milling machine operations	Level3	8	Draft - Prep for P Comment
Elective	117015 Conduct advanced articulated dump truck operations	Level 3	16	Draft - Prep for P Comment
Elective	117019 Conduct advanced face shovel operations	Level3	24	Draft - Prep for P Comment
Elective	117020 Conduct advanced tracked dozer operations	Level 3	24	Draft - Prep for P comment
Elective	1 17028 Conduct advanced wheeled dozer operations	Level3	20	Draft - Prep for P Comment
Wive	117030 Conduct advanced scraper operations	Level3	20	Draft - Prep for P comment
Elective	117031 Conduct advanced hot mix asphalt paving machine operations	Level 3	8	Draft - Prep for P Comment
Elective	117032 Conduct advanced roller operations	Level 3	8	Draft - Prep for P Comment
Elective	117034 Conduct advanced tip truck operations	Level 3	16	Draft - Prepfor P Comment
Elective	117035 Conduct advanced road rehabilitation machine operatiins	Level 3	8	Draft - Prep for P comment
Elective	117036 Conduct advanced sideboorn operations	Level3	8	Draft - Prep for P Comment
Elective	117037 Conduct advanced rigid body dump truck operations	Level3	16	Draft-Prepfor P comment
Elective	117038 Conduct advanced skid steer loader operations	Level 3	16	Draft - Prep for P Comment
Fundamental	8962 Maintainand adapt oral communication	Level 2	5	Registered

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Fundamental	8963 Access and use information from texts	Level 2	5	Registered
Fundamentai	8964 Write for a defined context	Level 2	5	Registered
Fundamental	13217 Collect and use information	Level 2	5	Registered
Fundamental	7456 Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	2	Registered
Fundamental	8968 Accommodate audience and context needs in czal communication	Level3	5	Registered
Fundamental	8969 interpret and use information from texts	Level 3	5	Registered
Fundamental	8970 Write texts for a range of communicative contexts	Level 3	5	Registered
Fundamental	8973 Use language and communication in occupational learning programmes	Level 3	5	Registered
Fundamental	9010 Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2	Registered
Fundamental	9012 Investigate life and work related problems using data and probabilities	Level 3	5	Registered
Fundamental	9013 Decode; apply, analyse and calculate shape and motion in 2-and 3- dimensional space in different contexts	Level3	4	Registered
Fundamental	14086 Work with a wide range of patterns and basic functions and solve related problems	Level 3	3	Registered

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