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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY
REGISTERED UNIT STANDARD:**

Operate a mobile crane

SAQA US ID	UNIT STANDARD TITLE			
116254	Operate a mobile crane			
ORIGINATOR				
SGB Civil Engineering Construction				
QUALITY ASSURING BODY				
-				
FIELD			SUBFIELD	
Field 12 - Physical Planning and Construction			Civil Engineering Construction	
ABET BAND	UNIT STANDARD TYPE	PRE-2009 NQF LEVEL	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	NQF Level 02	20
REGISTRATION STATUS		REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Reregistered		2015-07-01	2018-06-30	SAQA 10105/14
LAST DATE FOR ENROLMENT		LAST DATE FOR ACHIEVEMENT		
2019-06-30		2022-06-30		

In all of the tables in this document, both the pre-2009 NQF Level and the NQF Level is shown. In the text (purpose statements, qualification rules, etc), any references to NQF Levels are to the pre-2009 levels unless specifically stated otherwise.

This unit standard does not replace any other unit standard and is not replaced by any other unit standard.

PURPOSE OF THE UNIT STANDARD

The qualifying learner is capable of:

Demonstrating an integrated practical and theoretical grounding in crane operations according to safe handling and maintenance practices in compliance with crane manufacturer's and legislated standards.

The contribution to the national skills development strategy is the key developmental interface between learners and new competencies to be achieved.

Learners who master the applied competence described in this unit standard will contribute to the development of a professional community of civil engineering construction crane operators who are able to competently use

science and technology when applying operation techniques.

The contribution to socio-economic transformation is that learners will be able to undergo rpl-assessment and thereby receive recognition for previous learning and experience. This in turn will enhance the employability and career prospects of learners employed in this sector.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

The following knowledge, skills attitude and/or equivalent:

Learning assumed to be in place

NQF Level 1 Numeracy and NQF Level 1 Literacy

The driver should be declared physically fit and have completed an eyesight test (such as the Orthorator test, the Purdue University Test No. 3, etc.) and an industry recognised depth perception and hand-eye co-ordination test.

It is assumed that people starting to learn towards this unit standard have already undergone company induction, have an appropriate licence to operate in the work area, and are competent in unit standards which address:

- Relevant Code of practice
- Occupational Health, Safety and General Housekeeping
- Mechanical Awareness and Plant Appreciation

UNIT STANDARD RANGE

In the range of a rated capacity of up to 50 Tons

Limited to work carried out on a standard crane, or with standardised fittings

Major components include:

- Chassis
- Mobile & jib
- Counter weight, hoist
- Jib & cab
- Hoist & slew systems
- Brakes & Transmission
- Trolley & hookblock

Factors influencing safety and suitability of a crane:

- Stability
- Suitability
- State of repair
- Proximity of other machines and workers

Statutory requirements include but are not limited to:

- Relevant Code of practice
- Safety, Health & Environmental legislation
- Local Provincial authority requirements

Appropriate checklist is any one or a combination of the following:

- Manufacturer's checklist
- Pre-operational checklist
- Site-specific checklist
- Daily checklist
- Weekly checklist
- Site-specific checklist

Inspecting and recording the operational fitness of all components of the crane should cover:

- Structural Components
- Mechanical & Electrical Systems
- Cab, controls & levers
- Mast Sections
- Chassis & Ballast
- Hoist Ropes, Trolley & Hookblock

Worksite procedures include manufacturer's procedures, operators manuals and site operational requirements, or

- similar procedures
- Corrective action includes inspections and/or reporting
 - Controls include levers, switches forwards, reverse, left, right, gear selection, braking
 - All implement and attachment movements
 - Corrective action includes repairing and/or reporting

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Demonstrate knowledge of the functions of a mobile crane.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The main functions of Mobile Crane's are explained in terms of manufacturer's specifications.

ASSESSMENT CRITERION 2

The operation of all major components is explained in terms of their functions.

ASSESSMENT CRITERION 3

All safety features and warning devices on the crane are identified, and their purposes explained in accordance with manufacturer's specifications.

ASSESSMENT CRITERION 4

The maximum operating capacities are explained in terms of the designed crane capabilities.

ASSESSMENT CRITERION 5

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

ASSESSMENT CRITERION 6

Corrective actions are described or demonstrated in terms of neutralising warnings received.

SPECIFIC OUTCOME 2

Identify the safety and suitability of crane.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Demonstrate the ability to identify the suitability of the crane prior to utilisation.

ASSESSMENT CRITERION 2

Demonstrate ability to assess operational capability of lifting equipment (e.g. correct SWL of slings etc).

ASSESSMENT CRITERION 3

Demonstrate an understanding of the influence of load/range characteristics, manufacturers' requirements and environmental conditions.

ASSESSMENT CRITERION 4

Demonstrate an understanding of what constitutes safety in the broader working environment, and when operating a Mobile crane in compliance with statutory regulations.

SPECIFIC OUTCOME 3

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

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Pre-operational checks are carried out according to appropriate checklist.

ASSESSMENT CRITERION 2

Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and recordkeeping using a logbook.

ASSESSMENT CRITERION 3

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

ASSESSMENT CRITERION 4

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

SPECIFIC OUTCOME 4

Operate mobile crane.

ASSESSMENT CRITERIA**ASSESSMENT CRITERION 1**

The purpose of the various controls is explained in accordance with their designed use.

ASSESSMENT CRITERION 2

Functions of the various controls are demonstrated in accordance with the manufacturer's specifications.

ASSESSMENT CRITERION 3

Controls are used to effectively manoeuvre the crane within manufacturer's specifications.

ASSESSMENT CRITERION 4

Safe working procedures are followed according to manufacturer's specifications, site specific and statutory requirements.

ASSESSMENT CRITERION 5

Crane performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's specifications.

ASSESSMENT CRITERION 6

Crane is operated without risk of damage or loss to machine or property, or injury to people.

ASSESSMENT CRITERION 7

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.

ASSESSMENT CRITERION 8

Start-up and shutdown procedures are followed according to manufacturer's specifications.

ASSESSMENT CRITERION 9

Crane is set up according to manufacturer's and company requirements.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

N/A

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

- Mobile crane operating procedures and main functions of all major components and systems
- The maximum operating capacities of the designed working capabilities.
- Statutory requirements including the Relevant Code of practice and Safety, Health & Environmental legislation
- Recognized hand signals (and other methods of communication) to direct the crane movements.
- Selection of crane against environmental restraints

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):**UNIT STANDARD CCFO IDENTIFYING**

Identify and solve problems

Evident in the following specific outcomes and assessment criteria:

Demonstrate Knowledge of the functions of a Mobile Crane

- Corrective actions are described or demonstrated in terms of neutralising warnings received.

UNIT STANDARD CCFO WORKING

Work effectively with others

Evident in the following specific outcomes and assessment criteria:

Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane > Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications.

UNIT STANDARD CCFO ORGANISING

Employ self management

Evident in the following specific outcomes and assessment criteria:

Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane > Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and recordkeeping using a logbook.

UNIT STANDARD CCFO COLLECTING

Manage information

Evident in the following specific outcomes and assessment criteria:

Demonstrate Knowledge of the functions of a Mobile Crane

- Warnings from crane indicators and gauges are explained according to manufacturer's specifications.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively

Evident in the following specific outcomes and assessment criteria:

Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane > Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified.

UNIT STANDARD CCFO SCIENCE

Demonstrate scientific and technological competence

Evident in the following specific outcomes and assessment criteria:

Identify the safety and suitability of the crane.

- 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 Mobile Crane in compliance with statutory regulations.

UNIT STANDARD CCFO DEMONSTRATING

Understand contextual world-systems

Evident in the following specific outcomes and assessment criteria:

Identify the safety and suitability of the crane.

- Demonstrate an understanding of what constitutes safety in the broader working environment, and when operating a Mobile Crane in compliance with statutory regulations.

Operate a Mobile Crane

- 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.

UNIT STANDARD ASSESSOR CRITERIA

N/A

REREGISTRATION HISTORY

As per the SAQA Board decision/s at that time, this unit standard was Reregistered in 2012; 2015.

UNIT STANDARD NOTES

N/A

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	STATUS	END DATE	QUALITY ASSURING BODY
Elective	48961	National Certificate: Construction: Crane Operations	Level 2	NQF Level 02	Reregistered	2018-06-30	CETA
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	NQF Level 02	Reregistered	2018-06-30	As per Learning Programmes recorded against this Qual
Elective	48794	National Certificate in Quality Checking of Tyres and Tyre Components	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	71989	National Certificate: Automotive Components: Manufacturing and Assembly	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	58862	National Certificate: Electro-Mechanical Winding	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	58720	National Certificate: Engineering Fabrication	Level 3	NQF Level 03	Reregistered	2018-06-30	As per Learning Programmes recorded against this Qual
Elective	64829	National Certificate: Lifting Machine Operations	Level 3	NQF Level 03	Reregistered	2018-06-30	TETA
Elective	23255	National Certificate: Mechanical Engineering: Fitting and Machining	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	91926	National Certificate: Mechanical Engineering: Machining and Tooling	Level 3	NQF Level 03	Reregistered	2018-06-30	As per Learning Programmes recorded against this Qual
Elective	67609	National Certificate: Mechatronics	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	79666	National Certificate: Metal and Engineering Manufacturing Processes	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	64190	National Certificate: Metals Production	Level 3	NQF Level 03	Reregistered	2018-06-30	As per Learning Programmes recorded against this Qual
Elective	49449	National Certificate: Plastics Manufacturing	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	36155	National Certificate: Polymer Composite Fabrication	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	79407	National Certificate: Polymer Compound Manufacturing	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	21012	National Certificate:	Level 3	NQF Level	Reregistered	2018-06-	MERSETA

		Power and Telecommunication Cable Manufacturing		03	red	30	
Elective	24217	National Certificate: Thermoplastic Fabrication	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	48798	National Certificate: Tyre and Tyre Component Manufacturing	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	48795	National Certificate: Tyre Assembly	Level 3	NQF Level 03	Reregistered	2018-06-30	MERSETA
Elective	57886	National Certificate: Welding Application and Practice	Level 3	NQF Level 03	Reregistered	2018-06-30	As per Learning Programmes recorded against this Qual

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