

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician				SAQA ID: 91761	
Learning Area 2: Use and care of basic, trade-specific hand- & power tools and equipment				Total Hours:	192
Learning Project 1: Safely use ladders (up to 9 meters) and assemble, erect, dismantle and store scaffolds (up to 2 meters)				Total Hours:	24
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none"> • LA 1 (LP 1, 2, 6, 7, 9) 			
Learning project description: Safely use ladders (up to 9 meters) and assemble, erect, dismantle and store scaffolds (up to 2 meters) for different electrical work scenarios, which require ladders/scaffolds					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content (Exposure to be given)	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM: NONE	KM-02-KT01	WM: NONE		
Planning/Preparation	<p><u>Provide access to (Given):</u> For materials, tools and equipment see last column and arrange for different electrical work scenarios which require the use of ladders/scaffolding</p> <p><u>Apprentices must be able to do/perform the following (hard and soft skills):</u></p> <p>Prepare to assemble/erect and secure ladders and scaffoldings</p> <ul style="list-style-type: none"> • Obtain and confirm work instructions, including plans, specifications, quality requirements and operational details from 	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • OHSA • Construction regulations • General Safety Regulations • SANS 10085-1 (Scaffolding) <p><u>Knowledge of planning and preparation including:</u></p> <ul style="list-style-type: none"> • Work site inspection • Equipment defect identification • Risk assessment methods (conditions, hazards, safety precautions) • Determination of work requirements <p><u>Knowledge of ladders:</u></p> <ul style="list-style-type: none"> • Types of ladders (e.g. 	<p><u>Under supervision:</u></p> <ul style="list-style-type: none"> • Carry out risk assessments prior to climbing ladders • Carry out risk assessments prior to erecting scaffolding • Select the appropriate PPE for use prior to climbing ladders • Select the appropriate PPE for use prior to erecting scaffolding • Select the correct type of ladder for use according to the specific work requirements • Select the correct type of scaffolding for use 	<ul style="list-style-type: none"> • Research /Desk study • Case studies /scenarios • Technical discussions • Lecture/ instructions • Textbook work • Group discussions 	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> • Construction regulations • General Safety Regulations • SANS 10085-1 (Scaffolding) • Text books • Training manuals for trainers and apprentices incl. multimedia software • Set of presentation aids (videos, slides) for overhead or

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	<p>relevant sources</p> <ul style="list-style-type: none"> • Conduct basic risk assessment prior to using ladders and scaffoldings • Follow applicable safety (OHSA) requirements • Plan and prepare workplace environment for the use of ladders /scaffoldings • Determine barricade/isolation and signage requirements • Determine applicable height restrictions, limitations and classifications/certifications for erecting ladders and scaffoldings • Determine design requirements and foundations for erecting scaffoldings and ladders • Identify the correct type of ladders and scaffoldings for the specific work task • Select correct tools, equipment and PPE to carry out tasks and check for serviceability and any defects • Acquire authorisation for PPE from appropriate personnel where required (e.g. harness) • Identify, obtain and prepare materials appropriate to the work application • Identify and report problems/concerns 	<p>extension ladder aluminium and fibre glass, a-frame ladder, wooden ladder, etc.)</p> <ul style="list-style-type: none"> • Purpose of ladders and where different types are used • Safe erection methods for ladders • Safety precautions concerning ladders • Correct positioning and demarcation of areas before climbing of ladders • Risk assessment methods before climbing ladders • Methods of inspection of ladders (visual and mechanical) • Angles and fastening of ladders when extended • Methods of checking rungs on ladders • Types of Non-skid devices for ladders • Methods of checking the spreader brace devices for ladders • Maximum heights of ladders • Different types of PPE used when climbing ladders • Ladder register (purpose of and completion) • Standard operating procedures with regards to ladders <p>Knowledge of scaffoldings</p>	<p>according to the specific work requirements</p> <ul style="list-style-type: none"> • Check ladders for compliance • Reject non compliant ladder and initiate repair/replacement process • Use ladders to install specific electrical equipment inside/outside structures • Check scaffolding for compliance • Reject, and label damaged scaffolding components and initiate repair/replacement process • Erect scaffolding and install components correctly for the stabilisation of the scaffolding to install specific electrical equipment inside and outside of structures up to 2m • Erect scaffoldings in various work environments and for various work scenarios • Complete ladder register prior to storing of the ladders. • Store ladders in accordance with the manufactures 		<p>LED/LCD projectors</p> <p>Stationary machinery, mobile plants, transport, access and lifting equipment incl.:</p> <ul style="list-style-type: none"> • Ladders up to 9 meters • Modular and prefabricated scaffoldings up to 2 meters • Steel tubing • Prefabricated scaffolding components • Supporting accessories and equipment (e.g. secured by nylon ropes, wheels, chains, couplings etc.) • Transport trolleys <p>Hand- & power tools and PPE incl.:</p> <ul style="list-style-type: none"> • Safety gloves • Hard hat • Safety jacket • Safety boots • Body harness, anchorage, lifeline, static line • Ropes, chains, fasteners, fixing devices
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	<p>regarding safety or quality requirements prior to work commencement</p> <ul style="list-style-type: none"> • Identify site access and escape routes • Complete ladder inspection documentation - if applicable • Determine loading on scaffold and supporting structure using load tables in accordance with appropriate limits 	<ul style="list-style-type: none"> • Types of visual inspection of scaffolding • Types of scaffolding • Purpose of scaffolding and where different types are used • The different components used in erecting of scaffolding • Methods of erecting scaffolding • Establishment of footings • Safe work methods to determine the bearing capacity of ground or working surfaces 	<p>specification or organisational specifications</p> <ul style="list-style-type: none"> • Complete scaffolding register prior to storing of scaffold • Store scaffolding in accordance with the manufactures specification or organisational specifications 		<ul style="list-style-type: none"> • Gin wheels <p>Measuring and testing instruments incl.:</p> <ul style="list-style-type: none"> • Tape measure • Wire gauge • Torpedo/ spirit level
<p>Implementation/ Execution/</p>	<p>Erect and secure ladders</p> <ul style="list-style-type: none"> • Confirm purpose for ladder and identify associated work tasks • Ensure area for ladder placement is free of obstructions • Place and position ladder on suitable, clean and level surface (top & bottom) • Check if ladder is placed at appropriate angle and has the correct height in accordance with given limits (up to 9m) • Secure and tie ladders (top or bottom) and/or obtain assistance to prevent slipping, where required • Safely use ladders for given work assignment following OHS requirements • Observe special safety 	<ul style="list-style-type: none"> • Techniques for using ropes • Types of scaffolding accessories • Lifting devices include cantilevered hoists and gin wheels • Rules and regulations associated with scaffolding • Different types of PPE for use when erecting scaffolding • Purpose and completion of the scaffolding register • Types of platforms for use on scaffolding • Support structures for scaffolding • Permissible alterations and repairs due to work damage, accidents, misuse and other changes 			

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	<p>measures when working close to electrical circuits</p> <p>Assemble and secure scaffoldings</p> <ul style="list-style-type: none"> • Confirm purpose for scaffolding and identify associated work tasks • Select, inspect and use correct sole/base plates and components • Inspect erected scaffolding for stability, damage, corrosion, wear and compatibility • Isolate, label/tag and reject/return damaged components • Set out and erect scaffoldings up to a height of 2m • Safely use ropes, chains and fasteners when erecting scaffolding • Secure scaffolding components through appropriate bracing in accordance with site conditions • Adhere to OHS requirements when erecting scaffolding • Erect and install fall protection and static lines, where specified • Complete inspection log and obtain sign-off from certified inspector 	<ul style="list-style-type: none"> • Standard operating procedures with regards to scaffoldings 			
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	<ul style="list-style-type: none"> Observe special safety measures when working close to electrical circuits 				
Evaluation/ Documentation/ Housekeeping	<p>Dismantle, handle and store ladders and scaffoldings</p> <ul style="list-style-type: none"> Isolate and barricade work area to ensure safe dismantling/taking down of scaffoldings and ladders after work completion Securely dismantle/take down ladders and scaffoldings using reverse procedures as for erection Clear work area and dispose, reuse or recycle materials Inform appropriate personnel about any observed defects Clean, inspect, maintain and care of ladders/scaffolds and utilised hand- and power tools Complete scaffolding/ladder register prior to storing Securely store ladders/scaffolds in designated area 				
Total	Hours: 24				
Specialisation additions					
Assessment guidance					
<ul style="list-style-type: none"> Self assessment Group assessment Observation with combined theory test 					

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Criteria for assessment:

- Selecting suitable ladders and scaffolds for loads and the environment in which they are to be erected
- Safe erecting/assembling of ladders/scaffolds in different structures
- Adequate using of support accessories/equipment
- Complying with legislation and standard operating procedures

Work in progress