

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 2: Identify, use and maintain hand- and power tools and PPE			Total Hours:		16
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		• LA 1 (LP 1, 2, 6, 7, 9)			
Learning project description: Identify, use and maintain hand- and power tools and PPE (e.g. grinders, jig saws, drilling machines, hammers, chisels, pliers, screw drivers, crimping tools, Allen keys, shifting spanners...) for various trade specific work scenarios					
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	PM01-PS01 PM-01-PS02	KM-02-KT01	WM: None		
Planning/Preparation	<p><u>Provide access to (Given):</u> Standard trade-specific hand and power tools (see specification under Tools/equipment) and various trade specific work scenarios/work pieces, which require the use and care of hand- and power tools</p> <p><u>Apprentices must be able to do/perform the following (hard and soft skills):</u></p> <p>Prepare to identify, use and maintain hand- and power tools and PPE</p> <ul style="list-style-type: none">Recognise regular types and functions of hand- and power tools used for electrical installation worksIdentify the appropriate hand and power tools consistent with the	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none">OHSAGeneral safety regulationsManufacturers specifications and instructions <p><u>Knowledge of hand- and power tools:</u></p> <ul style="list-style-type: none">Different hand tools applicable to electricians toolboxTypes of trade specific power toolsTypes, applications, operating principles and characteristics of hand- and power tools in the electrical setting	<p><u>Under supervision:</u></p> <ul style="list-style-type: none">Identify required hand and power tools from existing toolboxes for given work scenariosInspect toolboxes for completenessInspect hand and power tools for any faults/ defectsCommunicate faults/ defects on hand/ power tools to superiorsPerform regular toolbox checksEngage in regular housekeeping	<ul style="list-style-type: none">Research /Desk studyCase studies /scenariosTechnical discussionsGroup workLecture/ instructionsTextbook work	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none">Text booksTraining manuals for trainers and apprentices incl. multimedia softwareSet of presentation aids (videos, slides) for overhead or LED/LCD projectors <p>Power tools:</p> <ul style="list-style-type: none">Angle grinders

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	<ul style="list-style-type: none"> needs of the work assignment Determine the risks associated with and the safe handling of the respective hand- and power tools Check tools for serviceability and safety Report damaged hand- and power tools Select appropriate personal protective equipment Select equipment to hold or support material for tool usage, where applicable Select power supply sources and extension cords, where applicable Identify appropriate route for power extension cables and power cords to keep clear of safety hazards 	<ul style="list-style-type: none"> Safe handling of hand- and power tools Methods of inspection of hand- and power tools Hazardous wear and tear signs of hand tools and power tools Manufacturer's procedures for maintaining and repairing hand and power tools Inspection reports & registers Care of hand – and powertools (incl. sharpening drill bits, chisels and flat screwdrivers) Work procedures and work documents related to the usage and maintenance of hand- and power tools Safe storage of hand and power tools 	<p>activities, tool and equipment maintenance</p> <ul style="list-style-type: none"> Safely use a range of hand- and power tools in given work scenarios Safely use common PPE used in the electrical work environment Clean and care for hand- and power tools and PPE Conduct simple maintenance and repair of hand- and power tools 		<ul style="list-style-type: none"> Drilling machines Rotary hammer drills Electric chippers Electrical jig and circular saws Electrical wall chasers Electrical sheet metal shears Glue gun Heat gun Portable electrical cross – cut/mitre saw Extension leads (cord) Lead-light or headlamp Portable, battery operated drilling machines and screwdrivers Hand conduit benders
Implementation/ Execution/ Processing	<p>Use and maintain hand- and power tools and PPE</p> <ul style="list-style-type: none"> Fit and use personal protective equipment Locate and hold materials into position, where applicable Safely handle hand- and power tools and PPE according to set specifications and requirements Store hand- and power tools safely away when not in immediate use Identify the scope of work required to maintain damaged hand- and power tools Confirm permissible extend of the maintenance work to be undertaken with appropriate personnel 	<p>Knowledge of typical hand and power tool faults encompassing:</p> <ul style="list-style-type: none"> Common faults and methods of fault finding in power tools such as: Mechanical wear and tear Electrical faults 			<p>PPE:</p> <ul style="list-style-type: none"> Safety gloves (insulated/leather) Safety boots Safety goggles Safety harness Hard hats / protective hoods Protective standard

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	<ul style="list-style-type: none"> • Hand over damaged hand-and power tools and PPE to third parties for repair/ replacement, where required • Conduct simple maintenance and repair works on damaged hand-and power tools and PPE including replacement of worn-out components within the confirmed scope of work • Disassemble and assemble hand-and power tools in appropriate sequence with all parts placed, secured and connected in accordance with manufacturer's guidelines • Carry out applicable maintenance and repair work efficiently without waste of materials or damage to hand- and power tools and the surrounding environment 				<ul style="list-style-type: none"> • clothing/ work wear • Hearing protection <p>Measuring and testing instruments incl.:</p> <ul style="list-style-type: none"> • Vernier calliper • Steel ruler • Steel square • Combination square • Measuring tape • Spirit level <p>Training workshop and laboratory equipment incl.:</p> <ul style="list-style-type: none"> • Workbenches for practical exercises • Pedestal/table grinding machine • Pedestal drilling machine
Evaluation/ Documentation/	<p>Complete work, clean up and report/document work activities</p> <ul style="list-style-type: none"> • Test/Evaluate functionality of maintained tools • Clean hand- and power tools • Safely store hand- and power tools in allocated areas • Clean work area in accordance with established procedures • Complete inspection documents for hand and power tools if applicable • Notify appropriate personnel of the completion of the work in accordance with established procedures 				

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Total	Hours: 16				
Specialisation additions					
Assessment guidance					
<ul style="list-style-type: none"> • Self assessment, Group assessment • Observation with combined theory test 					
Criteria for assessment: <ul style="list-style-type: none"> • Describing hand tools, PPE and their uses correctly • Identifying portable and fixed power tools and their uses • Using hand- and power tools and PPE correctly in given work situations • Replacing worn-out and defective components according to manufacturers' requirements • Determining functionality of hand- and power tool according to manufacturer's requirements • Care for hand- and powertools according to manufacturer's requirements 					

Work in progress