

# NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician				SAQA ID: 91761	
Learning Area 8: <b>Install power supply (Service entrance) and associated equipment to buildings and premises</b>				Total Hours:	88
Learning Project 2: <b>Terminate and connect conductors and cables from substation and power distribution points to buildings and premises</b>				Total Hours:	16
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		• LA 8, LP1			
Learning project description: <b>Apprentices learn to terminate glands and connect conductors from substation and power distribution points to buildings and premises</b>					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-05-PS06 PM-06-PS02	KM-07-KT04	WM-01-WE02 WM-03-WE01-03		
Planning/ Preparation	<p><b><u>Provide access to (Given):</u></b> Distribution board with switch gear and a scenario with a supply cable coming from point of supply to be terminated and connected at point of consumption, materials and equipment as identified in last column;</p> <p><b><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></b></p> <ul style="list-style-type: none"><li>• Read and interpret the electrical diagram</li><li>• Perform a risk assessment on the task</li><li>• Plan wiring layout according to diagram</li><li>• Identify the tools and materials required</li></ul>	<p><b><u>Knowledge of:</u></b></p> <ul style="list-style-type: none"><li>• Specific safety procedures related to termination and connection</li><li>• Statutory requirements as per work conducted</li><li>• Types and sizes of gland and methods for glanding</li><li>• Sizes of lugs and methods for lugging</li><li>• Labelling of cables and conductors</li><li>• Safe distribution of cables</li></ul>	<p><b><u>Under supervision:</u></b></p> <ul style="list-style-type: none"><li>• Terminate glands and connect cables and conductors into distributions boards (in a variety of contexts)</li></ul>	Lecture, presentations DVDs, audio-visual Demonstrations Practical applications	<p><b>Print materials, electronic files, software applications incl.:</b></p> <ul style="list-style-type: none"><li>• Training manuals for trainers and apprentices incl. multimedia software</li><li>• Set of presentation aids (videos, slides) for overhead or LED/LCD projectors</li><li>• Statutory requirements:</li><li>• SANS 10142-Part1</li><li>• Municipal by-laws</li></ul> <p><b>Tools, equipment and materials incl.:</b> Range of materials and tools to be</p>

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	<ul style="list-style-type: none"> <li>Identify obstacles and necessary precautions in relation to task</li> </ul>				covered (minimum): <ul style="list-style-type: none"> <li>Crimping tool</li> <li>Cable cutter/Hacksaw</li> <li>Bandit tool</li> <li>Electrical hand tools standard toolbox</li> <li>Associated Powertools</li> </ul>
<b>Implementation/ Execution Repair</b>	<ul style="list-style-type: none"> <li>Transport materials and tools safely to site</li> <li>Cordon off work area according to statutory requirements. Danger Tape; Marker Poles; Cones; Hazard Light</li> <li>Cut hole into DB as required</li> <li>Prepare cable and fit gland and shroud</li> <li>Route conductors to location</li> <li>Fit lugs</li> <li>Secure the lugs to switchgear/buzz bars</li> <li>Label conductors and cable according to drawing</li> <li>Repeat the above at the point of consumption</li> </ul>				<b>Materials:</b> <ul style="list-style-type: none"> <li>DB Board incl switchgear</li> <li>Supply cables sizes up to 16mm squared 1000 V AC/DC</li> <li>Glands</li> <li>Shrouds</li> <li>Lugs</li> <li>Cable trays</li> <li>Ducting and kick pipes</li> <li>Bandit straps</li> <li>Cable ties</li> <li>Heat shrinks</li> <li>Insulation tape of different colours</li> </ul>
<b>Evaluation/ Documentation</b>	<ul style="list-style-type: none"> <li>Perform power off test</li> <li>Clean work area after completion of task in accordance with work site procedures and housekeeping standards</li> <li>Dispose of waste materials in accordance with safety standards and environmental requirements</li> <li>Complete necessary documentation and submit to designated personnel.</li> </ul>				<b>PPE:</b> <ul style="list-style-type: none"> <li>Hard hat</li> <li>Safety boots</li> <li>Gloves</li> <li>Safety glasses</li> </ul>
<b>Total</b>	Hours: 16				
<b>Specialisation additions</b>					
<b>Assessment guidance</b>					
<ul style="list-style-type: none"> <li>Self assessment</li> <li>Group assessment</li> </ul>					

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- **Theory test**

### **Criteria for assessment:**

- Planning for task
- Interpretation of electrical diagram
- Identification of risks
- Correct selection of PPE
- Electrical cable is terminated and connected according to statutory requirements and worksite procedures
- Power off test after installation (earthing, resistance between conductors, etc.)
- Use of appropriate equipment and tools
- Clean worksite after completion of task and equipment returned safely to store

Work in progress