Relevant Occupation/trade title: Electrician	**SAQA ID:** 91761	
Learning Area 8: Install power supply (Service entrance) and associated equipment to buildings and premises	**Total Hours:**	**88**
Learning Project 5: Locate faults in supply cables (above and below ground) and repair	**Total Hours:**	**8**
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):	• LA 8, LP1-4	
Learning project description: Apprentices learn to locate faults in supply cables (above and below ground) and repair the same.		

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-01-PS03, PM02-PS02-03, PM-06-PS02 PM08-PS01-05	KM07-KT01, KM07-KT04, KM09-KT01	WM-03-WE02 WM-05-WE01-03		
Planning/ Preparation	**Provide access to (Given):** Supply cables above or below ground with simulated faults, electrical diagram, materials and equipment as identified in last column; **Apprentices must be able to do/perform the following (hard and soft) skills:** • Perform a risk assessment on the task and obtain an authorisation permit • Interpret electrical diagram • Select the correct instruments to assist in identifying the fault as well the tools and materials required to fix the possible faults • Plan sequence of testing tasks	**Knowledge of:** • Typical faults on supply cables • Lockout procedures and electrical safety • Statutory requirements as per work conducted • Common fault finding techniques and procedures • Specialised testing instruments • Specific repair methods as per supply cable type and environment • Correct selection of splicing kit for the specific environment	**Under supervision:** • Locate faults in supply cables (above and below ground), where applicable	Lecture, presentations DVDs, audio-visual Demonstrations Practical applications	**Print materials, electronic files, software applications incl.:** • Training manuals for trainers and apprentices incl. multimedia software • Set of presentation aids (videos, slides) for overhead or LED/LCD projectors • Statutory requirements: • SANS 10142-Part1 • Municipal by-laws **Tools, equipment and materials incl.:** Range of materials and tools to be covered (minimum): • Electrical testing instruments • Electrical hand tools standard toolbox • Associated Powertools • Shovel • Pick
Implementation/ Execution **Repair**	• Transport testing instruments, generic materials and tools safely to site • Adhere to lock out procedure • Cordon off work area according to statutory requirements. Danger Tape; Marker Poles; Cones; Hazard Light • Follow testing procedure				

	• Identify cable fault
	• Repair and/or replace cable
	• Perform (power off) test
	• Perform (power on) test
					Materials:
					• *Replacement spares:*
					  • Ferrels
					  • Heat shrinks
					  • Insulation tape of different colours
					  • Cables
					  • Splicing/Jointing kit
					
					PPE:
					• Hard hat
					• Safety boots
					• Gloves
					• Safety glasses

Evaluation/ Documentation	• Clean work area after completion of task in accordance with work site procedures and housekeeping standards • Dispose of waste materials in accordance with safety standards and environmental requirements • Complete documentation and submit to designated personnel.				
Total	Hours: 8				
Specialisation additions					

Assessment guidance

- **Self assessment**
- **Group assessment**
- **Theory test**

Criteria for assessment:

- Planning for task
- Interpretation of electrical diagram
- Identification of risks
- Lockout procedures adhered to
- Correct identification of faulty cable
- Correct selection of testing instruments
- Use of appropriate equipment and tools and test instruments
- Testing conducted as per requirements
- Cable repaired as per manufacturer requirements
- Testing conducted as per requirements (post repair)
- Cable functioning correctly
- Clean worksite after completion of task and equipment returned safely to store
- All documentation and recording of faults completed correctly