Unit ID: 871

Domain ELECTRICAL ENGINEERING - CORE

Title: Install electrical cables and accessories

Level: 2 **Credits: 3**

Purpose

This unit standard is intended for those who install electrical cables and accessories. People credited with this unit standard are able to plan and prepare for work; select electrical cables and accessories; install and terminate electrical cables and accessories; join electrical cables; and clean-up work area.

This unit standard is intended for those who work in electrical workplace environment.

Special Notes

1. Entry information:

   Prerequisite

   - *Unit 1157 – Demonstrate basic knowledge of workplace health and safety*

2. Assessment evidence may be collected from a real workplace or simulated workplace environment in which electrical operations are carried out.

3. Glossary of terms:

   - *'Specifications'* refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements.
   - *'SANS'* refers to South Africa National Standards.
   - *MIMS* – Mineral-Insulate Metal Sheathed
   - *TPS* – Thermoplastic Sheathed
   - *SWA* – Steel Wired Armoured

4. Performance of all elements in this unit standard must comply with industry standards.

5. This unit standard can be co-assessed with other related unit standard(s).

6. Regulations and legislation relevant to this unit standard include the following:

   - Labour Act, No. 11, 2007.

- Regulations relating to the health and safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
- SANS 10142-1.
- SANS 10142-2.
- SANS 10198
- Namibia Electricity Safety Code 2009: Electricity Act, No 4, 2007 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Performance criteria

1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and interpreted.

1.2 Worksite is inspected for hazards and corrective action is taken according to the regulations relating to the health and safety of employees at work.

1.3 Personal Protective Equipment are selected in line job and safety requirements

1.4 Safety requirements are followed in line with safety plans and policies.

1.5 Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.

1.6 Material quantity requirements are calculated in line with plans, specifications and quality requirements.

1.7 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Select electrical cables and accessories

Range

Flexible cords and cables may include but not limited to flat-section, circular construction, polyvinyl chloride (PVC), tough plastic-sheathed (TPS) and rubber sheathed.

Cables for fixed wiring may include but not limited to (TPS), silicon wire, mineral insulated metal-sheathed (MIMS), conduit wire, neutral-screened (coaxial) cable, cross-linked polyethylene (XLPE) and steel-wire armoured (SWA).

Accessories may include but not limited to cable glands, lugs, ferrules, shrouds, shrinks, sleeves, and cable connectors.

Ratings may include but not limited to alternating current (ac) and direct current (dc) ratings, voltage rating, power rating and environmental restrictions

Performance Criteria

2.1 Type of cables and accessories are identified in line with industry practice.

2.2 Cable conductor size is determined for an assortment of common flexible cords and fixed wiring cables.

2.3 Application of each type of cable and accessory is identified according to industry practice and in accordance with the manufacturers' specifications.

2.4 Restrictions on the use of rip cord and other single insulation types of flexible cords are described according to industry regulations and standards.

2.5 Manufacturers' ratings are identified from accessory markings or material data sheets.

Element 3: Install and terminate electrical cables and accessories

Range

Electrical cables may include but are not limited to TPS, MIMS, conduit wire, neutral-screened (coaxial), XLPE, SWA and Paper Insulated Lead sheathed Cable (PILC).

Performance Criteria

3.1 Safety and workshop procedures to be followed in accordance with health and safety legislation.

3.2 Type of cable is chosen to match the application in terms of operating conditions and environment.

3.2 Cable size and accessory is determined from a given data in accordance with industry regulations and standards and manufacturers' data.

3.3 Cables are mounted using required accessories according to current regulations, standards and industry practice.

3.4 Cables are terminated using required accessories according to current regulations, standards and industry practice.

Element 4: Join electrical cables

Performance Criteria

4.1 Jointing method is matched to the cable in accordance with industry practice and current regulations and standards.

4.2 Jointing process is carried out in accordance with industry regulations and standards and manufacturers' instructions, where applicable.

4.3 Completed joint is tested for continuity and insulation resistance and, measured values are in line with the original cable.

4.4 Reports and documentation are completed in accordance with the job specifications and Standard Operating Procedures.

Element 5: Clean-up work area

Performance Criteria

5.1 Work area is cleared, cleaned, restored and secured in line with workplace procedures.

5.2 Tools and equipment are cleaned, checked and stored in line with manufacturer specifications and workplace procedures.

5.3 Materials and wastes are disposed of, reused, or recycled in accordance with legislation, regulations, codes of practice and job specifications.

Registration Data

Subfield:	Electrical Engineering
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