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| Domain | Instrumentation and control |
| Title: | Carry out soldering and de-soldering tasks |
| Level: 2 | Credits: 3 |

Purpose

This unit standard specifies the competencies required to carry out soldering and de-soldering tasks. It includes preparing for soldering and/ or de-soldering and performing soldering and/or de-soldering. This unit standard is intended for those who work in instrumentation industry.

Special Notes

1. Special Notes

Prerequisite

- *Unit I&C01 - Apply and maintain safety rules in Instrumentation and Control Workplace environment*
- *Unit I&C02 - Plan and organise work in instrumentation work environment*

2. Assessment evidence may be collected from a real or a simulated workplace in which instrumentation operations are carried out.
3. To demonstrate competence, minimum evidence of preparation of soldering and de-soldering and perform soldering and de-soldering for at least one single layer printed circuit board containing a minimum of 20 pins
4. Soldering applications include, but are not limited to:
 - soldering electronic components onto printed circuit boards
 - Tinning of wire tips
 - soldering spliced wires
 - soldering wires to solder tags
5. Glossary of terms:
 - 'soldering' refers to joining metallic materials using an added metal (solder).
 - 'splice clips' refers to special connectors used with solder to ensure a rigid connection.
 - 'specifications' refers to any of the following: manufacturers' specifications and recommendations, workplace specific requirements.
 - 'OHS' refers to Occupational Health and Safety
 - IEC 60617-This standard is issued by the **International Electro-technical Commission** and this standard for electrical components symbols.
 - IEEE- Institute of Electrical and Electronics Engineers.
6. Performance of all elements in this unit standard must comply with industry standards.
7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 11, 2007.
 - Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 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 on www.nta.com.na.

Elements and Performance Criteria

Element 1: Prepare for soldering and/ or de-soldering.

Performance Criteria

Range

Soldering tools include but not limited to Soldering iron (gas, electrical, battery), soldering stations and Solder sucker.

- 1.1 Work area is inspected for safe working conditions and corrective action is taken where required.
- 1.2 Soldering or de-soldering and materials equipment selected as required by task.
- 1.3 Personal protective equipment is selected as per Occupational Health and Safety Act and worksite regulations.
- 1.4 Damaged and unsafe Soldering Equipment are identified and reported to the relevant personnel.

Element 2: Perform soldering and/or de-soldering.

Performance Criteria

- 2.1 Tools, equipment and materials are used safely to meet the requirements of the job.
- 2.2 All connections are cleaned from any dirt or oxidation.
- 2.3 Tinning of connections is done according to workplace standards.
- 2.4 Connections are soldered and/or de-soldered according to set specifications/techniques.
- 2.5 Soldered joints are inspected and tested for continuity and mechanical strength.
- 2.6 Equipment are cleaned and stored according to workplace procedures.

Registration Data

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| Subfield: | Electrical Engineering |
| Date first registered: | |
| Date this version registered: | |
| Anticipated review: | |
| Body responsible for review: | Namibia Training Authority |