

Domain	PLUMBING	Unit ID: 1913
Title:	Apply basic welding techniques as part of plumbing operations	
Level: 2		Credits: 8

Purpose

This unit standard is intended for those who apply basic welding techniques as part of plumbing operations. People credited with this unit standard are able to select, assemble and set up arc welding components and equipment, perform routine welding using manual arc metal welding process, assemble and set up oxy-acetylene welding equipment and materials and perform routine welding using fuel gas process.

This unit standard is intended for those who work as plumbers.

Special Notes

1. Entry information:

Prerequisite

- 434 - Apply Occupational Health and Safety in Working Environment.
- 440 – Plan and organise as part of plumbing operation or demonstrated equivalent knowledge and skills.

2. To demonstrate competence, at a minimum, evidence is required of performing two given welding tasks. These are a fillet and butt weld in horizontal position, using 150mm continuous length on two pieces of low-carbon steel with the dimensions of 50 x 3 x 150mm. These tasks should be performed ensuring correct identification of requirements and finishing of the tasks, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.
3. Assessment evidence may be collected from a real workplace, or simulated real workplace or an appropriate simulated realistic environment in which plumbing operations are carried out.
4. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions.
5. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act No. 11 of 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
 - Environmental Management Act No. 7 of 2007

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: Select, assemble and set up arc welding components and equipment

Performance Criteria

- 1.1 Welding machine setting, accessories and consumables are identified.
- 1.2 Welding equipment is assembled and correctly set up.
- 1.3 Welding machine is set to correct welding current.

Element 2: Perform routine welding using manual arc metal welding process

Performance Criteria

- 2.1 Correct procedures are accessed from sources to enable welding to be performed in line with equipment manufacturers' specifications.
- 2.2 Manual metal arc welding is completed using approved methods and equipment in line with type of material and repairs required.
- 2.3 Manual metal arc welding procedures are completed without causing damage to components or systems.
- 2.4 Safety requirements are observed including the wearing of personal protective equipment.

Element 3: Assemble and set up oxy-acetylene welding equipment and materials

Range

Setting up may include the correct connection of hoses, blowpipes, regulators, cylinder valves, pressure regulators, flashback arrestors, welding tips and correct settings of gas mixtures.

Performance Criteria

- 3.1 Welding equipment including cylinders and regulators are identified.
- 3.2 Welding equipment is assembled and set up in line with standard operating procedures.
- 3.3 Welding tips, settings and consumables are selected against job requirements and welding procedures in line with standard operating procedures.

Element 4: Perform routine welding using fuel gas process

Range

Prescribed procedure is limited to forehand welding (flat position welding and vertical position welding).

Performance Criteria

- 4.1 Weld is undertaken safely and in line with prescribed procedures.
- 4.2 Welds are cleaned in line with standard operating procedures.
- 4.3 Welds are inspected for faults and identified faults are rectified.

Registration Data

Subfield:	Civil and Building Services Engineering
Date first registered:	15 November 2007
Date this version registered:	31 May 2018
Anticipated review:	2023
Body responsible for review:	Namibia Training Authority