

Domain	METAL FABRICATION-CORE	Unit ID: 235
Title:	Weld mild steel using the oxy-acetylene welding process in the down hand position	
Level: 2		Credits: 6

Purpose

This unit standard specifies the competencies required to weld mild steel work pieces using the oxy-acetylene welding process in the down hand position. It includes the selection and preparation of materials, equipment and accessories, post weld inspection and cleaning up. This unit standard is intended for those who work as welders and boilermakers.

Special Notes

1. Entry information

Prerequisite:

- *Unit 228* - Apply safety rules and regulations in a metal fabrication work environment or demonstrated equivalent knowledge and skills.
2. To demonstrate competence, at a minimum, evidence is required of performing one butt, T joint and one lap joint weld in the down hand position. 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 a simulated real workplace or an appropriate simulated realistic environment in which welding and boilermaker operations are carried out.
 4. Performance of all elements in this unit standard must comply with manufacturers' specifications and workplace specific requirements.
 5. Mild steel to be welded must not exceed 3 mm in thickness.
 6. '*Specifications*' refers to any manufacturers' specifications and recommendations as well as workplace specific requirements.
 7. Regulations and legislation relevant to this unit standard include the following:
 - Occupational Health and Safety Regulations No.18, 1997
 - Labour Act 6 of 1992
 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this Subfield may be awarded by institutions which meet the accreditation and 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 and prepare materials and equipment

Range

Materials and equipment to include oxy-acetylene welding equipment and accessories to include welding wire welding torch and nozzles.

Performance Criteria

- 1.1 Appropriate materials are selected and prepared in accordance with task requirements.
- 1.2 Oxy-acetylene equipment and accessories are selected, inspected and prepared in accordance with task requirements.

Element 2: Weld work pieces in the down hand position

Range

Safety clothing and personal protective equipment to include: welding goggles, skull caps, leather aprons, leather gloves, leather spats, safety boots and overalls.

Performance Criteria

- 2.1 Risks associated with oxy-acetylene equipment are identified and minimised prior to commencing of task.
- 2.2 Appropriate safety clothing and personal protective equipment is selected, inspected and used in line with manufacturers' and workplace specifications.
- 2.3 Material is positioned to minimise distortion.
- 2.4 Equipment start up procedure is implemented in line with manufacturer's and workplace specifications.
- 2.5 Metals are welded to specification in accordance with job requirements.
- 2.6 Equipment shut down procedure is implemented in line with manufacturer's and workplace specifications.

Element 3: Conduct post weld inspection

Range

Visual inspection of work pieces is to include but is not limited to metal control, penetration, undercutting and porosity.

Performance Criteria

- 3.1 Work pieces are cleaned using appropriate tools and techniques.
- 3.2 Welds are visually inspected for correctness in accordance with specified method.

Element 4: Complete work and clean up

Performance Criteria

- 4.1 Work is completed and appropriate personnel notified in accordance with worksite and workshop procedures.
- 4.2 Work area is cleared of waste, cleaned, restored and secured in accordance with worksite and workshop procedures.
- 4.3 Tools and equipment are cleaned, checked, maintained and stored in accordance with worksite and workshop procedures.
- 4.4 Work completion details are finalised and recorded in accordance with worksite and workshop procedures.

Registration Data

Subfield:	Mechanical Engineering
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