

Domain	BRICKLAYING	Unit ID: 40
Title:	Plan, set out and construct masonry drainage structures	
Level: 4		Credits: 8

Purpose

This unit standard specifies the competencies required to plan, set and construct masonry drainage structures. It requires the ability to interpret site specifications and drainage plans, set out drainage structures, measure materials, level and align earthworks and use relevant equipment and tools. This unit standard is intended for those who work as bricklayers and plasterers.

Special Notes

1. Entry information

Prerequisite:

- Unit 3 - *Apply safety rules and regulations in bricklaying operations* or demonstrated equivalent knowledge and skills.
2. To demonstrate competence, at a minimum, requires evidence of constructing at least two different basic drainage structures. This will involve planning and setting out the drainage structure, excavating the installation site, installing and testing the drainage structure and cleaning up the installation site. Perform these tasks 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. Types of drainage structures include manholes, gullies, catchpits and septic tank and pit latrine.
 4. Assessment evidence may be collected from a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which bricklaying operations are carried out.
 5. All inspection, operation and maintenance procedures associated with the use of tools, scaffolding and equipment shall comply with manufacturers' guidelines and instructions.
 6. '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, site and workplace specific requirements.
 7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act No 6, 1992
 - Occupational Health and Safety Regulations No.18, 1997 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: Plan and prepare for work

Range

Planning and preparation is to include but is not limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Tools and equipment may include spirit level, dumpy level, staff, boning rods, pegs, notebook, pencil and calculator, bricklaying, hand tool, plastering hand tool, cutting tools, pointing and jointing tools, setting out tools, rakes, shovels, spades, rollers, wheelbarrows, hoses and hose fittings, pumps and pump fittings, and fittings appropriate to the drainage system.

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied.
- 1.2 Safety requirements are followed in accordance with safety plans and policies.
- 1.3 Sign and barricade requirements are identified and implemented.
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement.
- 1.5 Material quantity requirements are calculated in accordance with plans and/or specifications.
- 1.6 Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use.
- 1.7 Environmental protection requirements for the project are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Plan layout of masonry drainage structure

Range

Types of drainage structures include manholes, gullies, catchpits and septic tanks, pit latrine.

Performance Criteria

- 2.1 Site for the drainage structure is identified according to the site and drainage plans.
- 2.2 Site inspection is undertaken to confirm job requirements.
- 2.3 Symbols and terms are interpreted to ensure that the drainage structure is clearly understood according to industry practice.
- 2.4 Quantity, location and type of structure is determined from design drawings, plans and elevations.
- 2.5 Layout of drainage structure is planned in accordance with the plans and standards.
- 2.6 Materials required are determined from the proposed design.
- 2.7 Plans are recorded in accordance with workplace requirements.

Element 3: Construct and test masonry drainage structure

Performance Criteria

- 3.1 Excavations are completed without damage to services, facilities, features and structures according to plan specifications.
- 3.2 Structure is set out and constructed according to the drainage plan and work procedures without damage to surrounding environment, existing pipework or other services.
- 3.3 Structure is finished in line with specifications.
- 3.4 Connections for alterations, additions or repair to existing structures are made in accordance with specifications and manufacturers' specifications.
- 3.5 Construction is checked for compliance with design drawings, specifications, site requirements, standards and authorities' requirements.
- 3.6 Structure is tested to comply with specifications and relevant authorities' requirements.
- 3.7 Supervisor is consulted and remedial action is taken when the drainage structure operation does not meet the plan specifications.
- 3.8 Earthworks are finished off to the plan specifications.

Element 4: Clean up

Performance Criteria

- 4.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations and job specifications.

- 4.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices.

Registration Data

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