

Domain	PLUMBING	Unit ID: 458
Title:	Set out and install water services	
Level: 2		Credits: 6

Purpose

This unit standard specifies the competencies required to install hot and cold water services from the water supply to the fixture or point of discharge and storage. It includes planning and preparing for work, identifying installation requirements, installing and testing pipe system and cleaning up the work area.

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

Special Notes

1. Entry information:
 - Prerequisite
 - 434 - *Apply safety rules and regulations in plumbing operations or demonstrated equivalent knowledge and skills.*
2. 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.
3. The unit requires the installation of pipe work to carry drinkable water from a water meter, storage tank and/or hot water service to a point of discharge/storage. It may also include the installation of pipe work to carry non-drinkable water from a source to a point of discharge/storage. The point of discharge may be an isolating valve, tap or fixture. Site location for work application may be either domestic or commercial, and may be a new worksite, or an existing structure being renovated, extended, restored or maintained.
4. Tools and equipment include, but are not limited to hand and power tools, hand excavation equipment, measuring equipment, silver brazing equipment, flaring tools, crimping tools, pressure testing equipment, bending equipment, lifting/load shifting equipment, mechanical excavation equipment, trench shoring equipment, scaffolding, elevated work platforms, hand trolleys, rollers, forklifts, chain blocks, hoists and jacks.
5. Materials may include those authorised for use. Factors influencing choice of materials include type of usage, nature of water, conveyed, condition of ground, characteristics of materials and products and environmental factors.
6. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or specifications.

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 may include but is not be limited to workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Performance Criteria

- 1.1 Drawings and specifications are obtained.
- 1.2 Health and safety requirements associated with setting out and installing water services, and the workplace environment, are adhered to throughout the work.
- 1.3 Quality assurance requirements are identified and adhered to in line with workplace procedures.
- 1.4 Tasks are planned and sequenced in conjunction with others involved in or affected by the work.
- 1.5 Tools and equipment for setting out and installing water piping systems, including personal safety equipment, are selected and checked for serviceability in line with workplace procedures.
- 1.6 Work area is prepared to support the efficient setting out and installation of water services.

Element 2: Identify installation requirements

Performance criteria

- 2.1 Quantity and type of materials are calculated from drawings and specifications or site inspection and comply with standards.
- 2.2 Materials and equipment are identified and ordered/collected in line with workplace procedures.
- 2.3 Materials and equipment are checked for compliance with standards, docket/order form and for acceptable condition.

Element 3: Set out water services

Performance criteria

- 3.1 Pipelines and fixture connection points are set out in line with drawings and specifications, with consideration to the location of existing services.
- 3.2 Measurements of building line from boundary are determined from site drawing.

Element 4: Install and test pipe services

Performance Criteria

- 4.1 Trenches are excavated in line with standards and authorities' requirements.
- 4.2 Installation of supports and clips are checked for compliance with job specification, authorities' requirements and manufacturers' specifications.
- 4.3 Pipes are installed and jointed in line with job specifications, design layout and standards without damage or distortion to pipe work, or surrounding environment and other services.
- 4.4 Installation is tested to comply with standards and authorities' requirements and adjusted.

Element 5: Clean up work area

Performance criteria

- 5.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 5.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 5.3 Plant, tools and equipment are cleaned, checked and maintained in line with workplace procedures.

Registration Data

Subfield:	General Construction
Date first registered:	15 November 2007
Date this version registered:	15 November 2007
Anticipated review:	2010
Body responsible for review:	Namibia Training Authority