

<b>Domain</b>	<b>PLUMBING</b>	<b>Unit ID: 468</b>
<b>Title:</b>	<b>Plan, install and commission domestic irrigation pumps</b>	
<b>Level: 4</b>		<b>Credits: 4</b>

**Purpose**

This unit standard specifies the competencies required to plan, install and commission domestic irrigation pumps. It includes planning and preparing for work, identifying installation requirements, installing and commissioning pumps 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. To demonstrate competence, at a minimum, evidence is required of: installing and commissioning a centrifugal pump (25 mm suction and 25 mm delivery) for its operation. 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. Domestic irrigation pumps may be horizontal and vertical shaft centrifugal pumps, primed or self primed pumps, jet pumps and borehole/spear pumps.
5. Site location for work application may be either domestic or commercial, any may be new worksite, or an existing structure being renovated, extended, restored or maintained.
6. Tools and equipment include, but are not limited to hand and power tools, hand excavation equipment, concreting tools, levelling equipment, water flow, water pressure test equipment, lifting/load shifting equipment may also include hand trolleys, rollers, forklifts, chain blocks, hoists and jacks.
7. Materials include but are not limited to pumps, copper tube, polyethylene, stainless steel, UPVC pipes (Unplasticised Poly Vinyl Chloride), joints and components, cement and sand.

8. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or specifications.
9. Regulations and legislation relevant to this unit standard include the following:
  - Labour Act, No. 6, 1992
  - Occupational Health and Safety Regulations No. 18, 1997and 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](http://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 Irrigation plans and specifications are developed and the site is inspected.
- 1.2 Health and safety requirements associated with installing and commissioning domestic irrigation pumps, and the workplace environment, are adhered to throughout the work.
- 1.3 Quality assurance requirements are 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 installing and commissioning domestic irrigation pumps including personal protective equipment, are applied in line with workplace procedures.
- 1.6 Work area is prepared to support the efficient installation and commissioning of domestic irrigation pumps.

## **Element 2: Apply installation requirements**

### **Performance criteria**

- 2.1 Irrigation system requirements are identified from plans and specifications.
- 2.2 Pump is selected according to type, installation, range of flow rates, operating head and delivery distance.
- 2.3 Pump is identified and ordered/collected in accordance with workplace procedures.
- 2.4 Pump is checked for compliance with standards, docket/order form and for acceptable condition.
- 2.5 Joints are cleaned using appropriate tools and techniques in line with workplace procedures.

## **Element 3: Install and commission pump**

### **Performance criteria**

- 3.1 Pump set out position is made compliant with irrigation plans and manufacturers' recommendations.
- 3.2 Pump base is installed in line with plans and specifications.
- 3.3 Pump is fitted onto base, aligned to mark out and fastened/fixed into position.
- 3.4 Suction line is connected to pump in line with specifications and manufacturers' recommendations.
- 3.5 Discharge line is connected to pump in line with specifications and manufacturers' recommendations.
- 3.6 Piping and pump is pressure tested in line with manufacturers' specifications.
- 3.7 Operations of pump is tested and adjusted to achieve effective operation in accordance with manufacturers' specifications.
- 3.8 Details of test data are recorded and documented in the format required by quality assurance procedures.

#### **Element 4: Clean up work area**

##### **Performance criteria**

- 4.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 4.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 4.3 Plant, tools and equipment are cleaned, checked and maintained in line with workplace procedures.
- 4.4 Documentation is completed in line with workplace procedures.

##### **Registration Data**

<b>Subfield:</b>	General Construction
<b>Date first registered:</b>	15 November 2007
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<b>Body responsible for review:</b>	Namibia Training Authority