

	<b>Unit ID: 821</b>
<b>Domain</b>	<b>ROAD CONSTRUCTION AND MAINTENANCE – CONCRETE OPERATIONS</b>
<b>Title:</b>	<b>Install precast concrete pipes as part of road construction and maintenance</b>
<b>Level: 2</b>	<b>Credits: 16</b>

### Purpose

This unit standard is intended for those who work in road construction and maintenance operations. People holding credit for this unit standard are able to: Demonstrate knowledge of methods how to install pre-cast pipes; prepare the work area before installing the concrete pipes; install pre-cast concrete units; finish the installation of concrete pipes; complete work related documents; and clean up work area.

### Special Notes

1. Entry information:
  - Prerequisite
    - Unit 712 - *Comply with health, safety and environmental rules and regulations in road construction and maintenance work operations*
2. Expected worksite production target are to be met.
3. Assessment evidence may be collected from a real workplace, a simulated workplace or an appropriately simulated environment in which road construction and maintenance operations are carried out.
4. This unit standard has the following scope:
  - Materials may include but are not limited to pre-cast concrete pipes, box culverts, cement, sand, stones and water.
  - Pre-cast concrete pipes include but are not limited to spigot and socket, in-the wall, and ogee type joints, with and without rubber rings.
  - Pipes are for storm water.
  - Methods of laying refers to manual and plant assisted procedures.
  - Off-loading refers to manual and plant assisted methods.
  - Testing may include but is not limited to visual inspection for any damages, cracks and alignment.
  - Finishing may include the removal of all excess materials.
5. Safe working practices include but are not limited to day-to-day observation of safety policies and procedures, and compliance with emergency procedures.
6. Performance of all elements in this unit standard must comply with all relevant workplace requirements contractual agreement and or manufacturers' specifications.
7. Regulations and legislation relevant to this unit standard include but are not limited to the following:
  - Labour Act, No. 11 of 2007

- Occupational Health and Safety Regulations No. 18, 1997
- Road Traffic and Transport Regulations No. 52, 1999 and Government Notice 53 on Road Traffic and Transport Regulations
- Road Ordinance 1972 and other relevant legislations 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. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website [www.nta.com.na](http://www.nta.com.na).

### **Elements and Performance Criteria**

#### **Element 1: Demonstrate knowledge of methods how to install pre-cast pipes**

##### **Performance Criteria**

- 1.1 The methods of installing pre-cast pipes are identified.
- 1.2 The applications and uses of the methods are demonstrated.
- 1.3 The correct and safe use and application of the methods is demonstrated.

#### **Element 2: Prepare the work area before installing the concrete pipes**

##### **Performance Criteria**

- 2.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 2.2 Work area is checked for hazards. All hazards are identified and corrective action is taken in line with worksite housekeeping procedures including eliminating and reporting.
- 2.3 The appropriate materials, tools and equipment are confirmed with immediate supervisor, requisitioned, received and prepared.
- 2.4 Plants, tools and equipment selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified and reported prior to commencement.
- 2.5 All legislated safety precautions are adhered to in terms of work carried out below ground level.
- 2.6 The excavated trench, bedding and work area is neat, free of obstructions, water, and loose material within specifications tolerances and adheres to all design specifications in accordance with given instructions and drawings.

- 2.7 The area is set out to line and level to receive the pipes in accordance with contract requirements.
- 2.8 Pre-cast concrete units are offloaded and stacked or placed along the trench (stringing) at a safe distance and according to site standard operating procedures.

### **Element 3: Install pre-cast concrete units**

#### **Performance Criteria**

- 3.1 Work is carried out in accordance with work place safety requirements.
- 3.2 Tools and equipment are used in accordance with work place safety requirements and manufacturers' specifications.
- 3.3 Personal protective equipment is used as required in accordance with the Occupational Health and Safety Act.
- 3.4 Concrete units and fittings are laid and levelled within specified tolerances and in accordance with design and project specifications.

### **Element 4: Finish the installation of concrete pipes**

#### **Performance Criteria**

- 4.1. The pipeline is cleaned according to project specifications.
- 4.2. The pipeline is tested in accordance with the specifications.
- 4.3. The pipe laying operation is finished-off to contract requirements.

### **Element 5: Complete work related documents**

#### **Performance Criteria**

- 5.1 Work related documents are completed in accordance with contract and workplace requirements.
- 5.2 Maintenance and service related documents are completed in accordance with manufacturers' and workplace requirements.
- 5.3 Documents related to accidents or other incidents are completed in accordance with workplace requirements.

### **Element 6: Clean up work area**

#### **Performance Criteria**

- 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environment management plan.

- 6.2 Plant, tools and equipments are cleaned, checked, maintained, serviced and stored in accordance with manufacturers' recommendations and standard work practices.
- 6.3 Unused materials are safely stored and stacked for future use.

### **Registration Data**

<b>Subfield:</b>	Road Construction and Maintenance
<b>Date first registered:</b>	
<b>Date this version registered:</b>	
<b>Anticipated review:</b>	
<b>Body responsible for review:</b>	Namibia Training Authority