

<b>Domain</b>	<b>PLUMBING</b>	<b>Unit ID: 452</b>
<b>Title:</b>	<b>Perform basic concreting as part of plumbing operations</b>	
<b>Level: 2</b>		<b>Credits: 4</b>

### Purpose

This unit standard is intended for those who perform basic concreting as part of plumbing operations. People credited with this unit standard are able to Plan and prepare for work, Locate and prepare work area, Mix Concrete, Transport and place concrete, Screed, level and finish concrete and Cure concrete.

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

### Special Notes

1. Entry information

Prerequisite:

- 434 - Apply Occupational Health and Safety in Working Environment.
- 440 – Plan and organise as part of plumbing operation or demonstrated equivalent knowledge and skills.

2. To demonstrate competence, at a minimum, transport and place at least 3m<sup>3</sup> of concrete, screed to level and compact/vibrate to specifications; finish using a hand trowel at least 3m<sup>2</sup> of concrete slab to job specifications; apply a curing compound/method to at least 3m<sup>2</sup> of concrete to specifications using at least two of the compounds/methods specified in the range. 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. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or manufacturers' specifications.

5. Regulations and legislation relevant to this unit standard include the following:

- Labour Act No. 11 of 2007
- Regulations relating to the health & Safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments
- Local Authorities Act No. 23 of 1992
- Environmental Management Act No. 7 of 2007

### 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 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 but are not limited to measuring tapes/rules, shovels, wheel barrows, brooms, screed boards, chutes, trowels, wooden floats, steel trowels, rakes, bull floats, hoses, sprinklers, edging tools and v-jointers.

Materials may include but are not limited to concrete, water, curing compounds, water and plastic sheet.

#### **Performance Criteria**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied in line with workplace procedures.
- 1.2 Safety requirements are followed in accordance with safety plans and policies.
- 1.3 Sign and barricade requirements are identified and implemented in line with workplace procedures.
- 1.4 Plant, tools and equipment selected to carry out tasks that 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 in line with workplace procedures.
- 1.7 Environmental protection requirements for the project are identified and applied in line with environmental plans and regulatory obligations.

### **Element 2: Locate and prepare work area**

#### **Performance Criteria**

- 2.1 Location of concrete placement is determined from plans and specifications.
- 2.2 Location for placement is checked to ensure that it is free of debris and waste.
- 2.3 Safe working area is maintained around pour location using barriers and signage consistent with safety regulations.
- 2.4 Plant, tools and equipment is located to suit planned placement.

### **Element 3: Mix Concrete**

#### **Performance Criteria**

- 3.1 Materials required for concrete are identified according to job specifications.
- 3.2 Materials are batched according to job specifications.
- 3.3 Materials are mixed by hand or machine according to job specifications.

### **Element 4: Transport and place concrete**

#### **Performance Criteria**

- 4.1 Levels are checked by using straight edge in conjunction/combination with spirit level.
- 4.2 Concrete is transported to pour location by wheelbarrow.
- 4.3 Concrete is placed in horizontal layers into location to levels as indicated by markers, level pegs or lines.
- 4.4 Height of vertical drop of concrete is minimised to avoid segregation of concrete.
- 4.5 Poured concrete is vibrated and merged during process using hand compaction.

### **Element 5: Screed, level and finish concrete**

#### **Range**

Finishing techniques for concrete are to include but are not limited to steel trowel, straight edge, and mechanical troweling machine, broom finished, wood float, and brushed.

Evidence of two techniques for finishing concrete is required for assessment purposes.

#### **Performance Criteria**

- 5.1 Concrete is hand screeded to correct levels and grades.
- 5.2 Float and trowel are applied after initial screeding to assist in maintaining a level surface and remove screeding inaccuracies.
- 5.3 Control joints are installed, edges finished and concrete trowelled to specifications.
- 5.4 Final trowel/finish is applied to concrete surface to specifications.

### **Element 6: Cure concrete**

#### **Range**

Curing techniques and methods may include but are not limited to hosing, sprinklers, ponding, curing compounds, plastic sheeting, hessian sheeting and sand.

Evidence of the use of two techniques/methods is required for assessment purposes.

### **Performance Criteria**

- 6.1 Concrete is cured to specifications.
- 6.2 Curing compound/method is applied and maintained on concrete surface to specifications.
- 6.3 Concrete is protected during curing process by isolating and/or barricading the area.

### **Registration Data**

<b>Subfield:</b>	Civil and Building Services Engineering
<b>Date first registered:</b>	15 November 2007
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<b>Body responsible for review:</b>	Namibia Training Authority