

MAINTAIN PLUMBING SYSTEMS

UNIT CODE: CON/OS/PL/CR/06/4/A

UNIT DESCRIPTION

This unit specifies the competencies required to maintain plumbing systems. It involves detecting faults in plumbing systems, quantifying requirements for repair, fixing plumbing system faults and testing functionality of plumbing system as well as carrying out housekeeping practices.

This standard applies in the construction industry.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Detect faults in plumbing systems	1.1 Faults in plumbing systems are identified based on functionality 1.2 Possible causes of the plumbing faults are listed based on routine maintenance reports, design purpose, manufacturer's manual and best practice. 1.3 Solution for the fault is identified based on best practice.
2. Quantify requirements for repair	2.1 <i>Materials</i> required for plumbing fault repair are identified based on requirements of the job. 2.2 Supplies required for plumbing fault repair are identified based on requirements of the job. 2.3 Materials and supplies required are measured and counted based on working drawings and specifications 2.4 <i>Appliances</i> that need replacement are identified based on the requirements of the job.
3. Fix plumbing system faults	3.1 Notice for maintenance operation are issued as per standard operating procedure. 3.2 Affected areas are closed/isolated based on best practice

	<p>3.3 Tools and equipment are identified and used based on job requirements.</p> <p>3.4 Faulty area is dis-assembled as per standard operating procedure.</p> <p>3.5 Fault is repaired based on specifications and working drawings.</p> <p>3.6 Work area is cleared as per standard operating procedure or best practice.</p> <p>3.7 Personal Protective Equipment is used in line with occupational safety and health regulations.</p> <p>3.8 Safety and health practices are observed based on OSHA.</p>
4. Test functionality of plumbing system	<p>4.1 Functionality of the plumbing system is tested based on expected outcome.</p> <p>4.2 Repair work area is returned to initial condition as per workplace policy</p> <p>4.3 Normal supply is reinstated as per the design</p>
5. Carryout housekeeping activities	<p>5.1 Wastes are segregated and disposed of in line with environment protection guidelines.</p> <p>5.2 Tools and equipment are cleaned and storage as per manufacturers' instructions.</p> <p>5.3 Surplus materials and supplies are stored as per manufacturers' instructions.</p> <p>5.4 Records are kept as per workplace procedure.</p>

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variables	Range
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<p>1. Materials for repair may include but not limited to:</p>	<ul style="list-style-type: none"> • Screws • Adhesives • Cement • Sand • Pipes • Traps • Electric cables • Caulking material • Fittings
<p>2. Appliances may include but not limited to:</p>	<ul style="list-style-type: none"> • Wash hand basin • Water closet • Bath tub • Urinal • Bidet • Kitchen sink • Jacuzzi • Shower head • Solar water heaters • Rain water harvester • Cisterns • Pumps • Instant Showers • Water Filters
<p>3. Personal Protective Equipment may include but not limited to:</p>	<ul style="list-style-type: none"> • Helmet • Gloves • Dustcoat / overall • Dust mask • Safety shoes / boots
<p>4. Tools and equipment may include but not limited to:</p>	<ul style="list-style-type: none"> • Pipe wrench • Pipe cutter • Hacksaw • Pipe Threading Equipment • Bench Vice • Taps • Punch • Files

	<ul style="list-style-type: none"> • Screwdrivers • Drill with various sizes of bits • Portable drill • Mallet • Ball pein hammer • Mason chisel • PPR machine / Heat Fusion equipment • Pipe bender • Trowel • De-clogging wire / de-clogging machine • Toilet pump
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Required Skills

The individual needs to demonstrate the following skills:

- Analytical skills
- Drawing skills
- Problem-solving skills
- Critical thinking skills
- Organizing skills
- Measuring skills
- Numeracy skills
- Cutting skills
- Threading skills
- Bending skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Trouble shooting process
- Preventive maintenance of all systems
- Corrective maintenance of all systems
- Plumbing systems
- Types of fitting and appliances
- Maintenance of each type of fitting and appliance

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Detected plumbing systems faults correctly 1.2 Quantified requirements for repair accurately 1.3 Fixed plumbing faults correctly 1.4 Tested functionality of plumbing systems according to standards 1.5 Conducted housekeeping on work area appropriately 1.6 Observed safety and health practise correctly
<p>2. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 2.1 A functional workshop with basic plumbing tools, instruments and equipment 2.2 Materials and supplies necessary for the tasks 2.3 Reference and maintenance manuals 2.4 Personal protective equipment
<p>3. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Observation 3.2 Written test 3.3 Third party report 3.4 Portfolio 3.5 Oral questioning 3.6 Interviewing
<p>4. Context of Assessment</p>	<ul style="list-style-type: none"> 4.1 On-the-job 4.2 Off-the-job 4.3 Work placement
<p>5. Guidance information for assessment</p>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended</p>

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