

# INSTALLATION OF DRAINAGE SYSTEMS

**UNIT CODE:** CON/CU/PL/CR/03/4/A

## Relationship to Occupational Standards

This unit addresses the Unit of Competency: Install drainage systems

**Duration of Unit:** 80 hours

## Unit Description

This unit covers the competencies required to install drainage systems. It involves interpreting the working drawings, setting out the drainage system, quantifying drainage system components and supplies, mounting and testing of drainage systems and carrying out housekeeping practices.

## Summary of Learning Outcomes

1. Interpret working drawings
2. Quantify drainage materials and supplies
3. Set out drainage systems
4. Mount drainage system
5. Test drainage system
6. Carryout housekeeping activities

## Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Interpret working drawing	<ul style="list-style-type: none"><li>• Terms and Concepts</li><li>• Symbols</li><li>• Scales</li><li>• Measurements</li><li>• Reference points</li></ul>	<ul style="list-style-type: none"><li>• Observation</li><li>• Oral questioning</li><li>• Third party report</li><li>• Interviewing</li><li>• Written tests</li></ul>
2. Quantify drainage system materials and	<ul style="list-style-type: none"><li>• Terms and concepts</li><li>• Drainage system materials and</li></ul>	<ul style="list-style-type: none"><li>• Observation</li><li>• Written tests</li></ul>

supplies	<p>supplies</p> <ul style="list-style-type: none"> <li>• Material and supplies schedule</li> <li>• Types of rainwater goods</li> <li>• Estimation of quantities</li> </ul>	<ul style="list-style-type: none"> <li>• Oral questioning</li> <li>• Interviewing</li> <li>• Third party report</li> </ul>
3. Set out drainage systems	<ul style="list-style-type: none"> <li>• Terms and concepts</li> <li>• Setting out methods</li> <li>• Leveling <ul style="list-style-type: none"> <li>○ Boning rods</li> <li>○ Hose pipe</li> </ul> </li> <li>• Drainage bends</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Interviewing</li> <li>• Third party report</li> </ul>
4. Mount drainage system	<ul style="list-style-type: none"> <li>• Terms and concepts</li> <li>• Installation procedure <ul style="list-style-type: none"> <li>○ Above ground</li> <li>○ Underground</li> </ul> </li> <li>• Types of drainage pipes</li> <li>• Types of drainage pipe fittings</li> <li>• Types of appliances</li> <li>• Types of traps</li> <li>• Types of drainage systems</li> <li>• Drainage trench excavation</li> <li>• Drainage pipe sizes and pipe laying</li> <li>• Construction of inspection chambers and manholes.</li> <li>• Mounting of drainage traps</li> <li>• Haunching drainage systems</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Interviewing</li> <li>• Third party report</li> </ul>
5. Test drainage system	<ul style="list-style-type: none"> <li>• Terms and concepts</li> <li>• Structural and Functionality test</li> <li>• Soundness test</li> <li>• Fault checks</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Interviewing</li> <li>• Third party report</li> </ul>

6. Carryout housekeeping activities	<ul style="list-style-type: none"> <li>• Meaning and significance of housekeeping activities</li> <li>• Waste management</li> <li>• Care, maintenance and storage of tools and equipment</li> </ul>	•
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**Suggested Methods of Instruction:**

- Demonstration by trainer
- Practice by the trainee
- Field trips
- Discussions
- Direct instruction

**Recommended Resources**

**Functional Workshop with the following:**

**Tools and Equipment**

- Measuring tools
- Leveling equipment's
- Mason trowels
- Mason square
- Spirit level
- Hose Pipe
- Boning rods
- Floats
- Mallet
- Ball hammer
- Masonry chisel

**Supplies and Materials**

- Various types and sizes of fittings

- Caulking tools
- Various types of pipe supports
- Clay pipes
- UPVC
- Cast iron
- Concrete

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