

## INSTALLATION OF BUILDING SERVICES

**UNIT CODE: CON/CU/BUT/CR/05/4**

### RELATIONSHIP TO OCCUPATIONAL STANDARDS

This unit addresses the unit of competency: Install building services

**DURATION OF UNIT:** 70 hours

### UNIT DESCRIPTION

This Unit describes the competencies required to install building services. It involves installing water supply systems, Sanitary appliances, drainage systems and electrical conduit building and fittings.

### SUMMARY OF LEARNING OUTCOMES

1. Install water supply systems
2. Install sanitary appliances
3. Install drainage systems
4. Install electrical conduit, tubing and fittings

### Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested assessment methods
1. Install water supply systems	<ul style="list-style-type: none"><li>• Water supply system drawings</li><li>• Plumbing materials</li><li>• Types of pipes</li><li>• Plumbing tools and equipment</li><li>• Pipe connection sockets</li><li>• Pipe bending and cutting</li><li>• Pipe alignment</li><li>• Pipe threading</li><li>• Plumbing layout</li><li>• Safety and health standards</li></ul>	<ul style="list-style-type: none"><li>• Written assignments</li><li>• Written Tests</li><li>• Practical projects</li><li>• Practical Tests</li><li>• Oral questioning</li><li>• Observation of work procedures</li></ul>
2. Install sanitary appliances	<ul style="list-style-type: none"><li>• Types of sanitary appliances</li><li>• Plumbing tools and equipment</li></ul>	<ul style="list-style-type: none"><li>• Written assignments</li><li>• Written Tests</li><li>• Practical projects</li></ul>

	<ul style="list-style-type: none"> <li>• Installation procedures for sanitary appliances</li> <li>• Waste disposal act</li> </ul>	<ul style="list-style-type: none"> <li>• Practical Tests</li> <li>• Oral questioning</li> <li>• Observation of work procedures</li> </ul>
3. Install drainage systems	<ul style="list-style-type: none"> <li>• Drainage system drawings</li> <li>• Drainage materials</li> <li>• Collection chamber types</li> <li>• Collection chamber construction</li> <li>• Types of drainage systems</li> <li>• Drainage system installation</li> <li>• Drainage pipes</li> <li>• Drainage system testing</li> <li>• Waste disposal act</li> </ul>	<ul style="list-style-type: none"> <li>• Written assignments</li> <li>• Written Tests</li> <li>• Practical projects</li> <li>• Practical Tests</li> <li>• Oral questioning</li> <li>• Observation of work procedures</li> </ul>
4. Install electrical conduit, tubing and fittings	<ul style="list-style-type: none"> <li>• Types of electrical conduit, tubing and fittings</li> <li>• Electrical conduit tools and equipment</li> <li>• Electrical drawings</li> <li>• Electrical codes</li> <li>• Electrical conduit, tubing and fittings installation</li> </ul>	<ul style="list-style-type: none"> <li>• Written assignments</li> <li>• Written Tests</li> <li>• Practical projects</li> <li>• Practical Tests</li> <li>• Oral questioning</li> <li>• Observation of work procedures</li> </ul>

#### **Suggested Methods of Instruction:**

- Demonstration by trainer
- Practical work by trainee
- Demonstration videos
- Projects
- Group discussions

#### **Recommended Resources**

##### **Tools and equipment**

- Concrete mixer
- Trowel
- Plumb bomb
- Spirit levels
- Pipe wrench

- Pliers
- Hacksaw
- Welding machine
- Tester
- Hammer
- Pipe bending equipment

### **Materials and supplies**

- Cement
- Water
- Sand
- Ballast
- Timber
- Damp proof materials
- Hessian cloth
- Reinforcement bars
- Steel
- Hoop iron
- BRC
- Masonry units
- Nails
- Pipes
- Pipe fittings
- Gutters
- Rainwater drop pipe
- Manhole covers
- Sockets
- Conduit
- Tubing

### **Personal protective equipment (PPEs)**

- Overall
- Helmet
- Safety boots
- Masks
- Gloves
- First aid kit
- Reflectors

- Safety goggles

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