

## **CORE UNITS OF COMPETENCY**

# **PVC SHEATHED CABLING, CONDUITING, TRUNKING AND CABLE TRAYS LAYING**

**UNIT CODE: EE/CU/ET/CR/01/3**

## **Relationship to Occupational Standards**

This unit addresses the unit of competency: Perform PVC sheathed cabling, conduiting, trunking and cable trays laying.

**Duration of Unit:** 300 Hours

## **Unit Description**

This unit describes the competencies required by an electrician in order to safely install electrical metallic and non-metallic conduits, trunking, cable trays, wire ways and distribution board frames based on the required performance standards.

## **Summary of Learning Outcomes**

1. Apply workplace safety
2. Perform basic metal works
3. Install PVC Sheathed cables
4. Install electrical metallic/non- metallic (PVC) conduits
5. Install wire ways, trunking and cable trays
6. Install distribution board frames and auxiliary components

## **Learning Outcomes, Content and Suggested Assessment Methods**

Learning Outcome	Content	Suggested Assessment Methods
1. Apply workplace safety	<ul style="list-style-type: none"> <li>• Meaning of term PPE</li> <li>• Purpose of PPE</li> <li>• Types of PPE</li> <li>• Safe and correct handling, use, maintenance and storage of different types of PPE</li> <li>• Organizational safety rules</li> <li>• Safety and environmental regulations</li> <li>• Occupational risks e.g. falling from heights, bites from insects, cuts</li> <li>• Types of hazards e.g. electric shock, arc flash, blast, burns, fire</li> <li>• Sources of hazards and ways of preventing them</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation <input type="checkbox"/></li> <li>Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> <li>• Types of fires and fire fighting</li> <li>• First aid</li> <li>• Methods of resuscitation</li> </ul>	
2. Perform basic metal works	<ul style="list-style-type: none"> <li>• Use of safety harness and PPE</li> <li>• Types of metals e.g. Mild steel, steel</li> <li>• Purpose of the metals</li> <li>• Application of metals</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation <input type="checkbox"/></li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
3. Install PVC Sheathed cables	<ul style="list-style-type: none"> <li>• Use of safety harness and PPE</li> <li>• Meaning of PVC sheathed cables</li> <li>• Types of sheathed cables</li> <li>• PVC sheathed cables wiring methods</li> <li>• Applications of sheathed cables</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation <input type="checkbox"/></li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>

4. Install electrical metallic/non-metallic conduits	<ul style="list-style-type: none"> <li>• Use of safety harness and PPE</li> <li>• Interpretation of electrical drawings and plans</li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Direct observation and Oral questioning</li> </ul>
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<b>Learning Outcome</b>	<b>Content</b>	<b>Suggested Assessment Methods</b>
	<ul style="list-style-type: none"> <li>• Identification, use, maintenance and storage of tools and equipment</li> <li>• Materials specification</li> <li>• Use of materials</li> </ul>	<input type="checkbox"/> Practical tests
5. Install wire ways, trunkings and cable trays	<ul style="list-style-type: none"> <li>• Use of safety harness and PPE</li> <li>• Interpretation of electrical drawings and plans</li> <li>• Use of tools and equipment</li> <li>• Types of trunkings and cable trays</li> <li>• Procedure in installation of wire ways, trunkings and cable trays</li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Direct observation and oral questioning</li> <li>• Practical tests</li> </ul>

<p>6. Install distribution board frames and auxiliary components</p>	<ul style="list-style-type: none"> <li>• Use of safety harness and PPE</li> <li>• Use of tools and equipment</li> <li>• Interpretation of electrical drawings and plans</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation and oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
<p><b>Learning Outcome</b></p>	<p><b>Content</b></p>	<p><b>Suggested Assessment Methods</b></p>
	<ul style="list-style-type: none"> <li>• Procedure in installation of distribution board frames and auxiliary components</li> <li>• Earthing of the distribution boards</li> <li>• Conducting final checks for workmanship, conformity with instructions and job requirements</li> <li>• Maintenance of tools</li> <li>• Storage of tools</li> <li>• Good housekeeping</li> <li>• Documentation and reporting</li> </ul>	

## **Suggested Delivery Methods**

- Instructor led facilitation of theory
- Demonstration by trainer
- Practical work by trainee
- Products show rooms and field visits
- On-site job training
- Viewing of related videos

## **Tools and Equipment**

- Spirit levels, hack saws, plumb bobs and line, steel files, stock and die, metal pipe benders, bending springs, electric drills, earth rods/mats/spikes, grinding machine, chisels, mason's hammers.
- PPE including working gloves, overalls/dustcoats, safety shoes, helmets, goggles, safety harness.

## **Materials and supplies**

- Distribution boards
- consumer control units
- utility boxes
- junction boxes
- PVC conduits and accessories
- Metallic conduits and accessories
- Trunking
- Cable trays
- Screws
- Glues
- Bolts and nuts