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| Title | **Install electrical cables/ wires** |
| Level | **2** | **Credits** | **14** |

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| Purpose | The competency standard identifies the knowledge and skills required to install main distribution board, earthing, cables from sub circuit to branch circuit and till electrical appliances and test earthing, wiring joints and over all wiring etc. |

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| Classification ISCED | 0732 Building and civil engineering |

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| Available grade | Competent / Not yet competent |

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| Modification history | N/A |

|  **Competency Unit** | **Performance Criteria** | **Knowledge and Understanding** |
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| **E1:****Install main distribution board** | **Trainee must be able to:****P1-** Select Size of Distribution Board (DB) as per Requirement**P2-** Install Distribution Box  | **Trainee must know and understand:**K1- various sizes of distribution boardK2- proper fitting of distribution board  |
| **E2:****Install earthing connections properly** | **Trainee must be able to:****P1-** Select Location for earthing**P2-** Monitor digging of earth**P3-** Select earthing material. **P4-**select proper size of earthing cable and plate.**P5-** Install Earthing system**P6-** Connect earthing system with main distribution box **P7-** Perform earthing test | **Trainee must know and understand:**K1- Earthing.K2-Types of earthing materials and earthing componentsK3- Techniques and procedure for digging and installation of earthing systemK4-Techniques and procedure of connecting earthing system with a main distribution box**K5**- Various types of testing technique and procedure for earthing system  |
| **E3:****Install cables from main circuit to sub circuit** | **Trainee must be able to:****P1-** Select Wires/Cables as per calculation according to colour code**P2-** Inspect Wire**P3-** Lay Wires **P4-** Connect wires to the Switch Boards (Sub Boards) **P5-** Insulate Joints and Wires | **Trainee must know and understand:**K1- Wires/Cables Specification, Types and TrademarkK2-Types of Damages happens to wire K3- Use of magerK4- Use of multi meter K5- Use of basic wiring tools( steel wire pulling )K6- Types of electrical wiring jointsK7- Types of Insulating Material |
| **E4:****Install cables from sub circuit to branch circuit** | **Trainee must be able to:****P1-** Select The required Tools for performing connection **P2-** Perform Connections in-line with the cables/ wires colour coding **P3-** Wire the switch board**P4-** Insulate joints | **Trainee must know and understand:**K1- Types of tools/material used for connectionsK2- The colour codes standardK3- Technique and procedure for connecting wire with boards K4- Types of jointsK5- Types of insulating material |
| **E5:****Install cables from branch circuit to electrical appliance** | **Trainee must be able to:****P1-** Select The required Tools for performing connection **P2-** Perform Connections in-line with the cables/ wires colour coding **P3-** check wiring joints**P4-** Insulate joints | **Trainee must know and understand:**K1- Types of tools/material used for connectionsK2- The colour codes standardK3- Technique and procedure for connecting wire with boards K4- Types of jointsK5- Types of insulating materialK6- types of electrical circuits (series, parallel and series parallel ) |
| **E6:****Check all wiring joints** | **Trainee must be able to:****P1-**inspect the joints**P2-** strength the joints if required.**P3-** Insulate joints | **Trainee must know and understand:**K1- Types of tools/material used for connectionsK2- The colour codes standardK3- Technique and procedure for connecting wire with boards K4- Types of jointsK5- Types of insulating materialK6- types of electrical circuits (series, parallel and series parallel  |
| **E7:** **Check wiring and earth testing** | **Trainee must be able to:****P1-** Select The required testing Tools/equipment**P2-** Perform Physical Inspection of wiring/Cabling**P3-** Perform Continuity Test and fix the problem accordingly **P4-** Perform Insulation Test and fix the problem accordingly**P5-** Perform Earth Test and fix the problem accordingly**P6-** Install the appliances/equipments **P7-** Connect main supply to the Distribution box **P8-** Perform Appliances Functional Test  | **Trainee must know and understand:**K1- Types of Tools/equipment’sK2- Disadvantages of lose connectionK3- Techniques and procedure for performing Continuity, Insulation, earthing and appliance test.K4- Installation Techniques and Procedure of appliances K5- Types, specification of appliances  |