



THE REPUBLIC OF KENYA

**NATIONAL OCCUPATIONAL STANDARDS
FOR
BUILDING TECHNICIAN**

**KNQF LEVEL 6
ISCED PROGRAM CODE: 0732 554B**



**TVET CDACC
P.O BOX 15745-00100
NAIROBI**

INSTALL BUILDING SERVICES

UNIT CODE: CON/OS/BUT/CR/09/6/A

UNIT DESCRIPTION

This Unit describes the competencies required to install building services. It involves installing ICT and specialised services, installing electrical services and installing mechanical services.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Install ICT and specialised services	1.1 ICT and specialised services drawings are sketched based on architectural and engineering drawings 1.2 Structural cabling layout is drawn as per ICT and specialised services sketches 1.3 CCTV and security service layout is drawn as per sketches 1.4 Internet and cable TV service layout is drawn as per sketches 1.5 ICT and specialised services are installed as per SOPs 1.6 ICT and specialised services are tested as per SOPs
2. Set up electrical system	2.1 Electrical drawings are sketched as per architectural drawings 2.2 Electrical materials are identified and assembled as per the design layout 2.3 Electrical tools and equipment are identified and assembled according to the electrical materials 2.4 Masonry units are hacked according to the electrical layout 2.5 Conduits are laid and connected according to the electrical design layout 2.6 Electrical connections are tested according to IEE regulations 2.7 Exposed conduits are sealed as per construction regulations
3. Install mechanical services	3.1 Mechanical services drawings are sketched as per architectural drawings and structural drawings 3.2 Mechanical service supply materials are identified according to mechanical service drawings 3.3 Mechanical tools and equipment are identified as per materials and job requirements 3.4 Mechanical services are fixed according to standard operating procedures

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
	3.5 Mechanical services are tested as per SOPs

RANGE

Variable	Range
1. Electrical materials may include but is not limited to:	<ul style="list-style-type: none"> • Sockets • Meter box • Meter • Wires • Bulb holders • Conduits
2. Electrical tools and equipment may include but is not limited to:	<ul style="list-style-type: none"> • Pliers • Testers • Voltmeter • Ammeter
3. Mechanical services may include but is not limited to:	<ul style="list-style-type: none"> • Gas supply • Cold and hot water supply systems • Plumbing system • Sewer system • Fire fighting • Ventilation system

REQUIRED KNOWLEDGE AND SKILLS

Knowledge

- Measurement
- Survey
- Basic arithmetic
- Plan interpretation
- Occupational safety and health
- Codes of practice
- Environment Act
- Mechanical systems
- Electrical systems
- Plumbing connections
- Welding and fabrication
- Ducting

Skills

- Threading, cutting and fixing
- Pipe bending
- Measurement
- Basic mathematic
- Interpretation
- Design
- Communication
- Technical drawing
- Management
- Problem solving
- Critical thinking
- Construction tools handling
- Welding and fabrication
- Ducting

EVIDENCE GUIDE

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

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Sketched ICT and specialised services layout 1.2 Installed simple ICT and specialised services 1.3 Tested simple ICT and specialised services 1.4 Sketched simple electrical services layout 1.5 Installed simple electrical services 1.6 Tested simple electrical services 1.7 Sketched simple mechanical services layout 1.8 Installed simple mechanical services 1.9 Tested simple mechanical services
2. Resource Implications	The following resources should be provided: 2.1 Training/assessment workshops 2.2 Construction tools and equipment 2.3 Occupational Safety and health manuals 2.4 Qualified trainers 2.5 Codes of practice 2.6 Computers
3. Methods of Assessment	Competency may be assessed through: 3.1 Practical Test 3.2 Written Test

	3.3 Oral interview
4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.