



THE REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS
FOR
BUILDING TECHNICIAN

KNQF LEVEL 6
ISCED PROGRAM CODE: 0732 554B



TVET CDACC
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NAIROBI

EXECUTE BUILDING EXTERNAL WORKS

UNIT CODE: CON/OS/BUT/CR/08/6/A

UNIT DESCRIPTION

This Unit describes the competency required to perform building external works. It involves laying cabro blocks and paving slabs, performing landscaping, constructing drainage systems, fences and gates.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA (<i>Bold and italicized terms are elaborated in the Range</i>)
1. Lay external paving	1.1 Paving ground is surveyed to determine topography 1.2 Paving base is prepared in accordance with civil engineers' specifications 1.3 Levelling dust is spread in accordance with civil engineers' specifications 1.4 <i>External paving</i> is laid as per civil engineers' specifications
2. Perform soft landscaping	2.1 Area of the space is determined in accordance with the site layout 2.2 Landscaping ground is prepared as per design specifications 2.3 Irrigation method is determined as per landscape design 2.4 <i>Beautification</i> is carried out as per design specifications
3. Construct drainage system	3.1 <i>Drainage channels</i> are excavated as per civil engineering drawings 3.2 <i>Drainage pipes</i> are laid as per civil engineering drawings 3.3 <i>Collection chambers</i> are constructed according to civil engineering drawings
4. Construct fences and gates	4.1 Gate measurements are determined according to the client specifications 4.2 Gate supporting columns are constructed according to codes of practice 4.3 Gate is installed as per design measurements 4.4 Building <i>perimeter fence</i> is constructed as per client needs and codes of practice

RANGE

Variable	Range
1. External paving may include but is not limited to:	<ul style="list-style-type: none">• tarmac• concrete blocks• clay• ceramic• rubble stones• paving slabs
2. Beautification	<ul style="list-style-type: none">• Ornamental trees• Grassing• Flowers• Shrubs• Ground cover• Garden furniture• Garden lighting
3. Drainage channels	<ul style="list-style-type: none">• Open channels• Closed channels
4. Drainage pipes	<ul style="list-style-type: none">• concrete pipes• PVC pipes• GI pipes• PPR pipes
5. Collection chambers	<ul style="list-style-type: none">• Septic tanks• Soak pits• Manholes
6. Perimeter fence	<ul style="list-style-type: none">• Masonry walls• Live fence• Reinforced concrete walling• Wooden post and chain link/barbed wire• Steel post and chain link• Concrete post and chain link

REQUIRED KNOWLEDGE AND SKILLS**Knowledge**

- Highway technology
- Measurements
- Basic arithmetic

- Mixture ratios
- Reinforced concrete
- Wall construction
- Drainage systems
- Plan interpretation
- Excavation tools and equipment
- Soil properties
- Pipe work
- Health and safety
- Formwork
- Welding
- Plumbing
- Landscape lighting

Skills

- Measurement skills
- Basic mathematic skills
- Reading skills
- Communication skills
- Management skills
- Design skills
- Problem solving skills
- Critical thinking
- Construction tools handling skills
- Technical drawing skills

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	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Laid external paving 1.2. Performed soft landscaping and beautification 1.3. Constructed drainage system 1.4. Constructed fences and gates
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Construction tools and equipment 2.2 Construction materials 2.3 Codes of practice

	<p>2.4 Computers</p> <p>2.5 Calculators</p> <p>2.6 Training workshops</p> <p>2.7 Qualified trainers</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1. Practical Test</p> <p>3.2. Written</p> <p>3.3. Oral Questioning</p>
4. Context of Assessment	<p>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.</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>