



THE REPUBLIC OF KENYA

**NATIONAL OCCUPATIONAL STANDARDS
FOR
BUILDING TECHNICIAN**

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



**TVET CDACC
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EXECUTE SUPERSTRUCTURE WORKS

UNIT CODE: CON/OS/BUT/CR/06/6/A

UNIT DESCRIPTION

This Unit describes the competencies required to perform superstructure works. It involves setting out and erecting superstructure walls, constructing superstructure columns, stairs, beams and upper floors, erecting building roof, constructing fire place and installing fixtures and fittings.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Set out and construct superstructure columns	1.1 Kickers are positioned and cast as per specifications 1.2 Reinforcement bars are positioned as per structural design drawings 1.3 Column formwork is erected and aligned as per construction regulations 1.4 Concrete is mixed as per design requirements 1.5 Concrete is cast and compacted into forms as per construction regulations
2. Set out and erect superstructure walling	2.1 Wall dimensions and door openings are marked on the solid ground floor according to the design details 2.2 Building wall mortar is prepared as per building codes of practice 2.3 Wall screeding is laid in accordance with the plan layout and construction methods 2.4 Damp proof course is laid as per specifications 2.5 Building wall courses are laid according to prescribed bonding methods , building regulations and design details 2.6 Window and ventilator openings are determined as per the design details

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	2.7 Wall openings are bridged according to building codes and client specification
3. Set and construct superstructure beams, stairs and upper floors	3.1 Beam, stairs and upper floor formwork is constructed as per construction regulations and design dimensions 3.2 Props are erected in accordance to construction regulations 3.3 Reinforcement bars are positioned as per structural design drawings 3.4 <i>Concrete materials</i> are mixed as per design ratio requirements 3.5 Mixed concrete is placed and compacted as per construction regulations
4. Set and erect building roof	4.1 <i>Type of roof</i> is identified as per building design 4.2 <i>Roofing materials</i> are determined according to the building design 4.3 <i>Roof truss</i> is constructed according to the building design 4.4 Roof cover is laid according to construction regulations
5. Construct fire place	5.1 Fireplace foundation is constructed as per construction methods 5.2 Brickwork to ground floor level is built up according to building regulations 5.3 <i>Fireplace elements</i> are constructed according to the <i>ground floor type</i> and construction regulations 5.4 Fireplace is lined with fireback as per building regulations

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	5.5 Metal baskets are installed as per construction requirements
6. Install fixtures and fittings	6.1 <i>Fixtures</i> are selected and installed according to the design specifications 6.2 <i>Fittings</i> are selected and installed according to the design specifications

RANGE

Variable	Range
1. Bonding methods may include but is not limited to:	<ul style="list-style-type: none">• Stretcher bond• English bond• Flemish bond• Header bond
2. Concrete materials may include but is not limited to:	<ul style="list-style-type: none">• Cement• Sand• Ballast• Admixtures and additives
3. Type of roof may include but is not limited to:	<ul style="list-style-type: none">• Flat• Pitched
4. Roofing materials may include but is not limited to:	<ul style="list-style-type: none">• Tiles• Iron sheets• Concrete• Wood shingles/shakes• any other approved covering materials
5. Roof truss may include but is not limited to:	<ul style="list-style-type: none">• Timber truss• Steel truss
6. Fireplace elements may include but is not limited to:	<ul style="list-style-type: none">• 5.1 Jamb• Lintels• Rendering• Hearth• Throat
7. Ground floor type may include but is not limited to:	<ul style="list-style-type: none">• 6.1 Concrete floor• Timber floor• Glass floor
8. Fixtures may include but is not limited to:	<ul style="list-style-type: none">• 7.1 electric sockets• light fixtures• plumbing installations• Security and fire alarm systems
9. Fittings may include but is not limited to:	<ul style="list-style-type: none">• Furniture• hand driers• soap dispensers• towel hangers

Variable	Range
	<ul style="list-style-type: none"> • cabinets

REQUIRED KNOWLEDGE AND SKILLS

Knowledge

- Measurement
- Formwork
- Scaffolding
- Wall construction
- Basic arithmetic
- Technical drawings
- Structural design
- Timber properties
- Steel properties
- Plan interpretation
- Occupational safety and health
- Codes of practice
- Roofing materials
- Types of roofs
- Materials science
- Concrete mix ratio
- Construction machines, tools and equipment
- Types of bonds
- Carpentry and joinery
- Waterproofing
- Types of fireplace
- Admixtures and additives
- Fixtures and fittings

Skills

- Estimating and costing
- Measurement
- Basic mathematic
- Communication

- Management
- Design
- Problem solving
- Critical thinking
- Construction tools handling
- Technical drawing
- Bonding
- Bar bending
- Interpreting
- Cutting and fixing

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. Set out and erected superstructure walls 1.2. Constructed columns, beams, stairs and upper floors 1.3. Erected building roof 1.4. Constructed fire place 1.5. Installed fixtures and fittings
2. Resource Implications	The following resources should be provided: 1.1 Training/assessment workshops 1.2 Construction tools and equipment 1.3 Occupational Safety and health manuals 1.4 Construction manuals 1.5 Construction materials 1.6 Qualified trainers
2. Methods of Assessment	Competency may be assessed through: 2.1 Practical Test 2.2 Written Test 2.3 Oral Questioning
3. 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.
4. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.