



THE REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS

FOR

CARPENTRY AND JOINERY ARTISAN

KNQF LEVEL 4

ISCED CODE: 0722 354B



**TVET CDACC
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NAIROBI**

CONSTRUCT & ERECT ROOF STRUCTURES

UNIT CODE: CON/OS/CAJ/CR/04/4/B

UNIT DESCRIPTION

This unit describes the competence in constructing and erecting roof structures. It involves interpreting architectural/structural drawings, setting out roof trusses, cutting out the joints, assembling of truss members and erecting roof trusses. It also includes performing fixing of purlins, performing trimming of roof members, fixing roof covering materials, performing finishing at the eaves and other finishing processes

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA (<i>Bold and italicized terms are elaborated in the Range</i>)
1. Interpret Architectural/structural drawings	1.1 Working drawing interpreted based on architectural design 1.2 Measurements converted as required by the working drawing 1.3 Symbols are identified and interpreted based on International technical drawing (ISO 128) 1.4 Sketched and labelled types of roof as per the working drawing 1.5 Identified <i>type of roof</i> as per the architectural/structural drawing
2. Set out roof trusses	2.1 Secured tie with pegs according to job requirement 2.2 Marked the center of the truss according to architectural/structural design 2.3 Marked the span of the building based on the architectural/structural drawing 2.4 Marked the king post as per the architectural drawing 2.5 Made plumb cuts on rafters as per the pitch specifications 2.6 Joined the <i>truss members</i> as per architectural drawing 2.7 Fixed ties and braces according to the architectural/structural drawing 2.8 Safety is observed during setting out of roof trusses
3. Cut out the joints	3.1 Selected tools and equipment for cutting out as per job requirements

ELEMENT	PERFORMANCE CRITERIA (<i>Bold and italicized terms are elaborated in the Range</i>)
	3.2 Cut out the joints as per job requirements
4. Assemble of truss members	<p>4.1 Constructed heads of the two rafters as per truss design specifications</p> <p>4.2 Joined rafters to the ties based on truss design specification</p> <p>4.3 Constructed king post to the ties and rafters as per truss design specification</p> <p>4.4 Joined braces to rafters according to truss design specification</p> <p>4.5 Fixed struts and braces to ties and rafters based on truss design specification</p>
5. Erect roof trusses	<p>5.1 Identified types of trusses as per the architectural drawing</p> <p>5.2 Placed the truss on the wall plate as per job requirements</p> <p>5.3 plumbed first truss on the wall and fixed it to the wall plate based on job requirement</p> <p>5.4 Plumbed the rest of the trusses temporarily on the wall plate as per the job requirement</p> <p>5.5 Safety is observed during erection of roof trusses according to job requirements</p>
6. Perform fixing of purlins	<p>6.1 Cut splice joint on the purlins as per selected roofing material</p> <p>6.2 Fixed the purlins on the rafters according to the roof covering material</p> <p>6.3 Trimmed purlin according to eaves details</p>
7. Perform trimming of roof members	<p>7.1 Roof members are identified as per the selected roof covering materials</p> <p>7.2 Trimmed the roof members according to the structural drawing</p>
8. Fix roof covering material	<p>8.1 Selected roof covering materials according to design specifications</p> <p>8.2 Fixed the covering material with appropriate devices</p>
9. Perform finishing at the eaves	<p>9.1 Eaves defined as per structural design</p> <p>9.2 Identified the types of eaves based on structural design</p> <p>9.3 Measured the sizes of eaves as per job requirement</p> <p>9.4 Marked the plumb cuts based on the measured sizes</p>

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
	9.5 Cut the eaves plumb as marked
10. Perform finishing processes	10.1 Cut and fixed the fascial board according to workplace procedures 10.2 Cut and fixed the soffits based on job requirements 10.3 Fixed the gutters and the down pipes as per

RANGE

Variable	Range
1. Types of roofs may include but is not limited to:	<ul style="list-style-type: none"> • Gabled • Hipped Lean to
2. Truss members may include but is not limited to:	<ul style="list-style-type: none"> • Rafters • Braces • Struts • Ties • Ridge board
3. Roof members may include but is not limited to:	<ul style="list-style-type: none"> • Beams • purlins • wall plate • ridge plate • hip rafter • valley rafter • battens • reapers
4. Roof covering materials may include but is not limited to:	<ul style="list-style-type: none"> • Thatch covering • Wood shingles • Tiles • Asbestos cement sheets • Galvanized corrugated Iron sheets
5. Eaves may include but is not limited to:	<ul style="list-style-type: none"> • Flush • Open • Closed • Sprocket

REQUIRED KNOWLEDGE

- Construction Material
- Joinery Tools And Equipment
- Site Management
- Safety rules and precautions
- Roof covering materials
- Roof members
- Truss members
- Types of eaves

SKILLS

- Communication skills
- Using carpentry and joinery tools and equipments
- Observing safety

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 Interpreted Architectural/structural drawings correctly 1.2 Set out roof trusses 1.3 Observed accuracy during cutting out the joints appropriately 1.4 Assembled truss members correctly 1.5 Erected roof trusses appropriately 1.6 Performed fixing of purlins 1.7 Was able to trim roof members accurately 1.8 Fixed roof covering material neatly 1.9 Performed finishing at the eaves 1.10 Performed finishing processes as per workplace procedures
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Written text 3.2 Interview 3.3 Observation

	3.4 Practical tests
4. Context of Assessment	Competency may be assessed 4.1 On-the-job 4.2 Off-the -job 4.3 During Industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.