

**REPUBLIC OF KENYA**

**COMPETENCY BASED MODULAR CURRICULUM**

**FOR**

**TILING**

**LEVEL 3**

**ISCED PROGRAMME CODE: 0732 254**

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# **FOREWORD**

The provision of quality education and training is fundamental to the Government’s overall strategy for social and economic development. Quality education and training contribute to the achievement of Kenya’s development blueprint and sustainable development goals.

Reforms in the education sector are necessary to achieve Kenya Vision 2030 and meet the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution, and this resulted in the formulation of the Policy Framework for Reforming Education and Training in Kenya (Sessional Paper No. 14 of 2012). A key feature of this policy is the radical change in the design and delivery of TVET training. This policy document requires that training in TVET be competency-based, curriculum development be industry-led, certification be based on demonstration of competence, and the mode of delivery allow for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that this curriculum has been developed. For trainees to build their skills on foundational hands-on activities of the occupation, units of learning are grouped in modules. This has eliminated duplication of content and streamlined exemptions based on skills acquired as a trainee progresses in the up-skilling process, while at the same time allowing trainees to be employable in the shortest time possible through the acquisition of part qualifications.

It is my conviction that this curriculum will play a great role in developing competent human resources for the construction Sector’s growth and development.

**PRINCIPAL SECRETARY**

**STATE DEPARTMENT FOR TVET**

**MINISTRY OF EDUCATION**

**PREFACE**

Kenya Vision 2030 aims to transform Kenya into a newly industrializing middle-income country, providing high-quality life to all its citizens by the year 2030. Kenya intends to create globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through lifelong education and training. TVET has a responsibility to facilitate the process of inculcating knowledge, skills, and worker behavior necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency-Based Education and Training (CBET).

TVET Act, CAP 210A and Sessional Paper No. 1 of 2019 on Reforming Education and Training in Kenya for Sustainable Development emphasized the need to reform curriculum development, assessment, and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry, as well as increase the global competitiveness of the Kenyan labor force.

This curriculum has been developed in adherence to the Kenya National Qualifications Framework and CBETA standards and guidelines. The curriculum is designed and organized into Units of Learning with Learning Outcomes, suggested delivery methods, learning resources, and methods of assessing the trainee’s achievement. In addition, the units of learning have been grouped in modules to concretize the skills acquisition process and streamline upskilling.

I am grateful to all expert trainers and everyone who played a role in translating the Occupational Standards into this competency-based modular curriculum.

# **ACKNOWLEDGEMENT**

This curriculum has been designed for competency-based training and has independent units of learning that allow the trainee flexibility in entry and exit. In developing the curriculum, significant involvement and support was received from industry and various organizations.

I appreciate National construction Sector Skills Committee who enabled the development of this curriculum. I recognize with appreciation the role of the SSC in ensuring that competencies required by the industry are addressed in this curriculum.

I also thank all stakeholders in the Construction sector for their valuable input and all those who participated in the process of developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that individual aspiring to work in the construction sector will acquire competencies that will enable them perform their work more efficiently and effectively.

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# **ABBREVIATIONS AND ACRONYMS**

1. PPEs- PERSONAL PROTECTIVE EQUIPEMENTS.

2. CBET- COMPITENCE BASED EDUCATION TRAINING.

3. TVET- TECHNICAL VOCATIONAL EDUCATION TRAINING

4. OS- OCCUPATIONAL STANDARDS

5. ISCED- INTERNATIONAL STANDARDS CLASSIFICATION OF EDUCATION

6. POE- PORTIFOLIO OF EVIDENCE

# **KEY TO ISCED UNIT CODE**



# **COURSE OVERVIEW**

Tiling Level 3 qualification consists of competencies that an individual must achieve to perform tiling activities. It involves perform tiling works estimates, preparing surfaces and setting out, and carrying out tile installation.

**Units of Learning**

SUMMARY OF UNITS OF LEARNING

**Core Units of Competency**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Learning Code** | **Unit of Learning Title** | **Duration**  **in**  **Hours** | **Credit Factor** |
| 0732 251 01A | TILING  WORKS ESTIMATES | 40 | 4.0 |
| 0732 251 02A | SURFACE PREPARATION AND SETTING OUT | 150 | 15.0 |
| 0732 251 03A | TILE INSTALLATION | 160 | 16.0 |
| 0732 251 04A | INDURSTRIAL TRAINING | 240 | 24.0 |
| **GRAND TOTAL** |  | **590** | **59.0** |

**Entry Requirements**

An individual entering this course should have any of the following minimum requirements:

1. Kenya Certificate of Primary Education (KCPE)

**Or**

1. Equivalent qualifications as determined by relevant regulatory body

**Trainer Qualification**

Qualifications of a trainer for this course include:

1. Possession of at least a certificate in building technician level 5 or in related trade area;
2. License by TVETA; and
3. License by regulatory body (where applicable)

**Credit Accumulation, Transfer, and Exemptions**

………… (QAI) Guidelines on credit accumulation and transfer shall apply.

**Industry Training**

An individual enrolled in this course will be required to undergo Industry training for a minimum period of 240 hours in tiling sector. The industrial training may be taken after completion of all units for those pursuing the full qualification or be distributed equally in each unit for those pursuing part qualification. In the case of dual training model, industrial training shall be as guided by the dual training policy.

**Assessment**

The course shall be assessed formatively and summative:

1. During formative assessment all performance criteria shall be assessed based on performance criteria weighting.
2. During summative assessment basic and common units shall be integrated in the core units.
3. Summative assessment shall involve practical assessment focusing more on critical aspects of the respective unit of competency.
4. Theoretical and practical weight shall be (10:90) for levels for each unit of learning;
5. Theoretical (written/oral) assessment shall have formative and summative assessments weighted at 60% and 40% respectively in the overall unit of learning score
6. Assessment performance rating for each unit of competency shall be as follows:

|  |  |
| --- | --- |
| **MARKS** | **COMPETENCE RATING** |
| 80 -100 | Attained Mastery |
| 65 - 79 | Proficient |
| 50 - 64 | Competent |
| 49 and below | Not Yet Competent |
| Y | Assessment Malpractice/irregularities |

1. Assessment for Recognition of Prior Learning (RPL) may lead to award of part and/or full qualification.

**Certification**

A candidate will be issued with a Certificate of Competency upon demonstration of competence in a core Unit of Competency. To be issued with Kenya **National Certificate TILING** Level 3 the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. A Statement of Attainment certificate may be issued upon demonstration of competence in a certifiable element within a unit.

The certificates will be issued by the Qualification Awarding Institution

# **TILING WORKS ESTIMATES**

**UNIT CODE**: 0732 251 01A

**Unit Description**

This unit specifies the competencies required to Perform Tiling Works Estimates. It entails Identifying tile types, estimating tile quantities as per area, preparing tiling work schedule.

SUMMARY OF LEARNING OUTCOMES,

|  |  |  |
| --- | --- | --- |
| S.NO | LEARNING OUTCOMES | **DURATION(HRS)** |
|  | Identify tile types | **10** |
|  | Estimate tile quantities as per area | **15** |
|  | Prepare tiling work schedule | **15** |
| **TOTAL** | | **40HRS** |

**Learning outcomes, content and suggested assessment methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Identify tile types | 1. Personal protective equipment    * 1. Types      2. Uses 2. Tile types and classification    * 1. Ceramic Tiles      2. Porcelain Tiles      3. Vitrified Tiles      4. Marble Tiles      5. Granite Tiles      6. Limestone Tiles      7. Sandstone Tiles      8. Mosaic Tiles      9. Glass Tiles      10. Cement Tiles (Encaustic Tiles)      11. Terrazzo Tiles      12. Quarry Tiles      13. Wooden Tiles 3. Tile application surfaces    * 1. Wall      2. Floor      3. Outdoor      4. Wet areas    1. Tile absorption rates and durability    2. Special-purpose tiles       1. Anti-Skid Tiles       2. Heat-Resistant Tiles       3. Acid-Resistant Tiles       4. Heavy-Duty Industrial Tiles       5. Soundproof Tiles | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests |
| 1. Estimate tile quantities as per area | * 1. Measurement of tiling surface areas.   2. Tile dimensions      1. Standard Floor Tile Sizes      2. Standard Wall Tile Sizes      3. Large Format Tiles      4. Subway Tiles      5. Plank Tiles (Wood-Look   3. Quantities estimation (tiles, adhesives, strips, spacers)and allowable waste factor. | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests |
| 1. Prepare tiling work schedule | * 1. Time allocation for tiling task is estimated   2. Materials and tools   3. Curing and drying   4. Work schedule documentation   5. Tiling progress monitoring | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests |

**Suggested Methods of Delivery**

* Demonstration
* Practice
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | | |
|  | Textbooks | Tiling | 5 | | 1:5 |
|  | Tiling works manuals | Tiling works | 5 | | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations | 5 | | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | | |
|  | Lecture/theory room | (30\* 40 sq. feet) | 1 | | 1:25 |
|  | Workshop | (30\* 40 sq. feet) | 1 | | 1:25 |
| **C** | **Consumable materials** |  |  | |  |
|  | Ceramic Tiles | Boxes | 5pcs | | 1:25 |
|  | Porcelain Tiles | Boxes | 5pcs | | 1:1 |
|  | Vitrified Tiles | Boxes | 5pcs | | 1:1 |
|  | Marble Tiles | Boxes | 5pcs | | 1:25 |
|  | Granite Tiles | Boxes | 5pcs | | 1:25 |
|  | Limestone Tiles | Boxes | 5pcs | | 1:25 |
|  | Sandstone Tiles | Boxes | 5pcs | | 1:1 |
|  | Mosaic Tiles | Boxes | 5pcs | | 3:1  3:1  1:1 |
|  | Grout | bag | 1 bag | | 1:25 |
|  | Cement | bag | 1 bag | | 1:25 |
|  | Water | adequate | adequate | |  |
| D | **Tools and Equipment** | | | | |
|  | Club hammer | 25 pcs | | 1:1 | |
|  | Mason's hammer | 25 pcs | | 1:1 | |
|  | Chisel | 25 pcs | | 1:1 | |
|  | Trowels (pointing, finishing trowels) | 25 pcs | | 1:2 | |
|  | Spirit level | 25 pcs | | 1:1 | |
|  | Bolster | 5 pcs | | 1:5 | |
|  | Cold chisel | 13 pcs | | 1:2 | |
|  | Hawk (Hand board) | 5 pcs | | 1:5 | |
|  | Sandpaper/Sponge | 25 pcs | | 1:1 | |
|  | Jointing knife/rod | 25pcs | | 1:1 | |
|  | Stepping ladder | 12 | | 1:2 | |
|  | Mason's line | 5 | | 1:5 | |
|  | Plumb bob | 13 | | 1:2 | |
|  | Measuring tools (Tape measure, builders square) | 13 | | 1:2 | |
|  | Power tools | 5 | | 1:5 | |

# **SURFACE PREPARATION AND SETTING OUT**

**UNIT CODE**: 0732 251 02A

**Unit Description**

This unit equips specifies the competencies required to perform tiling works. It entails levelling receiving surfaces, interpreting working drawings layouts, setting out tile layouts and carrying out water proofing and damp proofing. It applies in the construction industry.

LEARNING OUTCOMES,

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Elements** | **Duration(HRS)** |
|  | Level receiving surfaces | 20 |
|  | Interpret working drawing layouts | 40 |
|  | Set out tile layouts | 40 |
|  | Carry out water proofing and damp proofing | 50 |
| **TOTAL** | | **150** |

CONTENT AND SUGGESTED ASSESSMENT METHODS

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Level receiving surface | * 1. Surface condition      1. Uneven surfaces      2. Cracks      3. Loose materials      4. Contaminated surfaces   2. tools and materials for leveling      1. Spirit level      2. Straightedge      3. Notched trowel      4. Spacers      5. Rubber mallet      6. Screed board      7. Chalk line /Laser level      8. Sand-cement screed      9. Mortar      10. Bonding agent      11. Grout   3. Surface cleaning and priming   4. Leveling/ screeding   5. Uniformity checks   6. Curing | Competency may be assessed through:   * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Interpret working drawing layouts | * 1. Tile layouts   2. Tile scale drawings   3. symbols | Competency may be assessed through:   * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Set out tile layout | * 1. Work area dimensioning and measuring * 3.1.1 Tape measure method * 3.1.2 Grid method * 3.1.3 Laser method * 3.1.4 Chalk line method * 3.1.5 Diagonal measurement method * 3.1.6 Reference points and datum line * 3.1.7 Dry laying method   1. Reference lines   2. Tilling layouts   3. Tile positioing and marking   4. Dry laying and adjusting of tiles   5. Final layout confirmation an approval | Competency may be assessed through:   * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Carry out water proofing and damp proofing | * 1. Surface inspection   4.1.1 Flood test  4.1.2 Gaps  4.1.3 Cracks   * 1. waterproofing or damp-proofing materials   4.2.1 Damp-proof membranes  4.2.2 Cementitious waterproofing compounds.  4.2.3 Bitumen-based coatings.  4.2.4 Epoxy and polyurethane coatings.  4.2.5 Silicone sealants and waterproof grouts.   * 1. Waterproofing membranes, coatings, or sealants\   2. Joints, corners, and penetrations are sealing   3. Checks for uniformity and complete coverage.   4. Curing   5. Tests for water proofed or damp proofed area | Competency may be assessed through:   * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |

**Suggested Methods of Delivery**

* Demonstration
* Practice
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | | |
|  | Textbooks | Tiling | 5 | | 1:5 |
|  | Tiling works manuals | Tiling works | 5 | | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations | 5 | | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | | |
|  | Lecture/theory room | (30\* 40 sq. feet) | 1 | | 1:25 |
|  | Workshop | (30\* 40 sq. feet) | 1 | | 1:25 |
| **C** | **Consumable materials** |  |  | |  |
|  | Cement | Bags | 1 bag | | 1:25 |
|  | Sand | Tonnes | Adequate | | 1:1 |
|  | Water | Adequate | Adequate | | 1:1 |
| D | **Tools and Equipment** | | | | |
|  | Club hammer | 25 pcs | | 1:1 | |
|  | Mason's hammer | 25 pcs | | 1:1 | |
|  | Chisel | 25 pcs | | 1:1 | |
|  | Trowels (pointing, finishing trowels) | 25 pcs | | 1:2 | |
|  | Spirit level | 25 pcs | | 1:1 | |
|  | Bolster | 5 pcs | | 1:5 | |
|  | Cold chisel | 13 pcs | | 1:2 | |
|  | Hawk (Hand board) | 5 pcs | | 1:5 | |
|  | Sandpaper/Sponge | 25 pcs | | 1:1 | |
|  | Jointing knife/rod | 25pcs | | 1:1 | |
|  | Stepping ladder | 25pcs | | 1:1 | |
|  | Mason's line | 5 | | 1:5 | |
|  | Plumb bob | 13 | | 1:2 | |
|  | Measuring tools (Tape measure, builders square) | 13 | | 1:2 | |
|  | Power tools | 5 | | 1:5 | |

# **TILE INSTALLATION**

**UNIT CODE**: 0732 251 03A

**Unit Description**

This unit specifies the competencies required to carry out Tile Installation. It entails Applying adhesives, installing tiles, Performing Joint Filling and Performing House Keeping. It applies in the construction industry.

**Learning outcomes**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Elements** | **Duration (hrs)** |
|  | Apply adhesives | 50 |
|  | Install tiles | 50 |
|  | Perform Joint Filling | 50 |
|  | Perform House Keeping | 10 |
|  | **TOTAL** | **160** |

**Content and suggested learning methods**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Apply adhesive | * 1. surface inspection and cleaning   2. Tiling adhesives   1.2.1. selection  1.2.2 preparation and mixing  1.2.3 Spread  1.2.4 maintaining thickness  1.2.5 open time onitoring   * 1. Adhesive inspections | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Install tiles | * 1. Tiles inspection   2. Tools and materials      1. Spirit level      2. Straightedge      3. Notched trowel      4. Spacers      5. Rubber mallet      6. Screed board      7. Chalk line /Laser level      8. Sand-cement screed      9. Mortar      10. Bonding agent      11. Grout      12. Expansion joints   3. layout drawings interpretation   4. Tile positioning,cutting,spacing   5. Tile pressing and adjusting   6. tile edges installation   7. Alignment and levelness | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Perform Joint filling | * 1. Joint filling materials      1. Identification      2. Selection   2. Joint filling | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |
| 1. Perform house keeping | * 1. Surface cleaning   2. Waste strorage   3. Waste materials disposal | * Practical * Projects * Portfolio of evidence * Third party report * Written tests * Oral tests | |

**Suggested Methods of Delivery**

* Demonstration
* Practice
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

**Recommended Resources**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/No.** | **Category/Item** | **Description/ Specifications** | **Quantity** | | **Recommended Ratio**  (Item: Trainee) |
| **A** | **Learning Materials** | | | | |
|  | Textbooks | Tiling | 5 | | 1:5 |
|  | Tiling works manuals | Tiling works | 5 | | 1:5 |
|  | Charts | * Flip Charts * Rules and Regulations | 5 | | 1:5 |
| **B** | **Learning Facilities & infrastructure** | | | | |
|  | Lecture/theory room | (30\* 40 sq. feet) | 1 | | 1:25 |
|  | Workshop | (30\* 40 sq. feet) | 1 | | 1:25 |
| **C** | **Consumable materials** |  |  | |  |
|  | Cement | Bags | 1 bag | | 1:25 |
|  | Sand | Tonnes | Adequate | | 1:1 |
|  | Water | Adequate | Adequate | | 1:1 |
| D | **Tools and Equipment** | | | | |
|  | Club hammer | 25 pcs | | 1:1 | |
|  | Mason's hammer | 25 pcs | | 1:1 | |
|  | Chisel | 25 pcs | | 1:1 | |
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|  | Jointing knife/rod | 25pcs | | 1:1 | |
|  | Stepping ladder | 25pcs | | 1:1 | |
|  | Mason's line | 5 | | 1:5 | |
|  | Plumb bob | 13 | | 1:2 | |
|  | Measuring tools (Tape measure, builders square) | 13 | | 1:2 | |
|  | Power tools | 5 | | 1:5 | |