

Competency Based Training (CBT) Curriculum Guide for Tiles Fitter

[Market Oriented Short Term (MOST), Modular Curriculum]

Developed by



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1. INTRODUCTION:

The Technical Education and Vocational training (TVET) system has a large role to play in economic growth and social development as workforce provider to the labor market and as provider of skills to those who are looking for employment. In the case of Bangladesh, the TVET sector needs major reforms to ensure that issues of quality and capacity, relevance, and access are properly addressed.

This curriculum guide is designed and developed using competency based training (CBT) approach with the aim of producing skilled human resources for respective trade and occupation. This is based on the tasks to be performed for Tiles Fitter occupation. The modules are included in course structure section of this curriculum guide. The training methodology is learner friendly where theoretical inputs, demonstration, guided and individual practices will be sufficiently provided to **master the skills at the industry standards**. Sufficient and updated tools and equipment will also be used during the training to provide hands on skills to the trainees. The curriculum guide is developed in consultation with the trainer, mid-level industry supervisors, and skilled workers. SUDOKKHO engaged Training Institute for Technical Instruction (TITI), Nepal to develop the curriculum guide on Tiles Fitter.

2. AIMS:

The main aim of this training program is to produce medium level skilled workforce (semi-skilled workers) required for the construction sector in the formal and informal sector and create better opportunities for employment and increased revenue.

3. OBJECTIVES:

At the end of the training course, the trainees will be able to:

- Practice Occupational Health and Safety (OHS) Procedure;
- Apply Fundamental Skills of Tiles and Marble Fitting Works;
- Perform Tiles/Marble Cutting;
- Lay Tiles/Marble.

4. DESCRIPTION:

This is a competency based training package for the unemployed and underemployed workforce of Bangladesh. The curriculum is based on the tasks to be performed in the Tiles Fitter occupation and subsequently these tasks have been grouped to form various modules. This will provide flexibility for the trainees to learn one module at a time. The modules are included in the 'Course Structure' section of this curriculum guide. The training methodology will be **learner-centered** where theoretical input, demonstration, guided and individual practices will sufficiently be provided to the trainees to **master their skills at business and**

industry standards. Sufficient tools, equipment and aids will also be used during the training to provide hands on skills to the trainees.

5. COURSE STRUCTURE:

Job title: Tiles Fitter				Time (hrs.)		
S.N	Modules	Tasks	Nature	Th.	Pr.	Tot.
1	Practice Occupational Health and Safety (OHS) Procedure	5	T+P	2.5	3.5	6.0
2	Apply Fundamental Skills of Tiles and Marble Fitting Works	5	T+P	7.0	20.0	27.0
3	Perform Tiles/Marble Cutting	3	T+P	3.0	30.0	33.0
4	Lay Tiles/Marble	9	T+P	12.0	102.0	114.0
All total:		22		24.5	155.5	180

Timings are finalized subject to verification during implementation of training.

It should further be noted that although Health and Safety is dealt with as a separate module, the principles should be integrated into each task. It should be seen as a way of life and not an activity to be done during training only.

6. DURATION:

Total duration of the training is **180 hours** excluding soft skills and On-the-Job Training (OJT)/Apprenticeship. The participants will be sent for wage employment after completion of the training. Only technical modules with occupational health and safety procedure have been considered under this duration.

7. TARGET GROUP:

The target group of this training course will be dropped out youths from the formal schooling, job seekers/underemployed young men or women, disadvantaged people. Male and female both are entitled to receive this training. The basic education for the trainees would be grade-V or equivalent. Above 18 years of age trainees will be enrolled in the training course.

8. GROUP SIZE:

Maximum 20 trainees will be placed in each group and provided adequate resources.

9. TARGET LOCATION:

The training will be implemented in partnership with private training providers and industry led training situated in the different areas of the country.

10. MEDIUM OF INSTRUCTION:

The medium of instruction for this course will be Bangla but the trainees will be oriented on technical terminology in English.

11. PATTERN OF ATTENDANCE:

At least 90% attendee will be required during the theory and practical classes to appear in the internal and final assessment.

12. FOCUS OF THE PROGRAM:

Since this course is a competency-based training, the focus is given on the performance of the trainees rather than the theoretical input. Where practicable, at least 80% of the total training time is allocated for practical training and 20% for theory.

13. ENTRY CRITERIA:

The following criteria will be considered for the individual to enter into this training program:

- Education: Class 5 or equivalent
- Age: 18 years and above
- Physical and mental health

14. FOLLOW UP SUGGESTION:

The training institutes who implement CBT program will build rapport with the employers to link graduates with the industries for employment.

Placement: Within one month after completion of the training program, the graduates will be assisted in finding out appropriate and decent wage-based job relevant to the occupation concerned.

To measure the success in job, the follow up will be taken as below:

First follow-up- three months after placement of graduates in job and the next follow up six months after placement of graduates in job.

15. CERTIFICATE REQUIREMENT:

Training service provider and Industry Led Training will certify the graduates as a Semi-Skilled Tiles Fitter only after successful completion of the training program through systematic skills testing. Certification can also be linked to the Bangladesh Technical and Education Board (BTEB) at the relevant NTVQF level through Recognition of Prior Learning (RPL).

16. TRAINEES EVALUATION DETAILS:

Module wise evaluation will be conducted to ensure the performance of the learners. Final evaluation will be conducted to evaluate the participants at the end of the training course. Trainees must secure 100% marks in practical and 80% marks in theoretical examination.

17. TRAINERS' QUALIFICATION:

Preference will be given to the trainer's having the following criteria:

- Minimum five years' experience in the respective occupation in the construction industry
- Working experience as an Instructor/Trainer
- Trade course/Diploma in Civil Engineering

18. TRAINER – TRAINEES RATIO:

- For theoretical class, trainer and trainee ratio should be 1:20.
- For practical class, trainer and trainee ratio should be 1:10.
- And for final practical assessment 1:1

19. SUGGESTION FOR INSTRUCTION:

Where practicable:

- At least 80% time of the course will be allocated for practical purpose.
- Maximum 20% time of the course will be allocated for theoretical purpose.
- Follow the safety rules.
- Create a friendly learning environment.
- Arrange the materials and equipment at the right place.
- Trainer/Instructor will be available in the training classes/labs in time.
- Take attendance of participants.
- Learner centered training.
- Encourage the participants to speak.
- Arrange question and answer (Q&A) sessions.
- Make plans for classroom / workshop instructions.

- Prepare lesson plans for theoretical and practical classes.

20. LIST OF MODULES AND SUB MODULES:

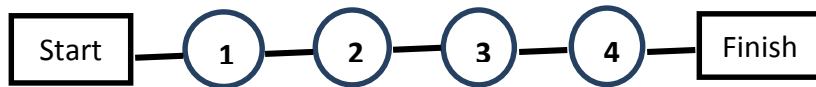
Module: 1: Practice Occupational Health and Safety (OHS) Procedure

Module: 2: Apply Fundamental Skills of Tiles and Marble Fitting Works

Module: 3: Perform Tiles/Marble Cutting

Module: 4: Lay Tiles/Marble

21. MODULE SEQUENCE:



22. DETAILS OF MODULES AND SUB MODULES:

Module 1: Practice Occupational Health and Safety (OHS) Procedure

22.1. Module- 1: Practice Occupational Health and Safety (OHS) Procedure						
	Description: It consists of skills and knowledge related to occupational health and safety applicable to the related performance.			Hours		
	Module outcomes: After completion of this module, trainees will be able to <ul style="list-style-type: none"> Follow safety sign and regulations; Apply personal protective equipment; Control house-keeping hazards; Apply First Aid on minor injuries; Control Electrical Fire Hazards. 			Th. 2.5	Pr. 3.5	Tot. 6.0
1.	Task: Follow safety sign and regulations	Terminal Performance Objective (TPO): Given: Simulated situation What: Follow safety sign and regulations. How well: <ul style="list-style-type: none"> All safety signs and regulations must be followed in the workplace 	Th. 0.5	Pr. 0.5	Tot. 1.0	
	Steps: <ol style="list-style-type: none"> Collect the safety sign, emergency exit plan and list of rules and regulation. Explain the application of safety sign and regulation. Follow the emergency exit plan. Comply with safety signs and regulations. 	Enabling objectives: <ul style="list-style-type: none"> Explain about the uses of safety sign and regulation. Explain how to use the regulation. Explain types of the safety sign. List the safety sign and regulation. Use the all safety items and rules. Explain the emergency exit way. 				
	Tools/equipment/materials required: Safety sign, visual aids, danger zone area indicators and regulation charts. PPE: Apron, Safety Shoe, Hand Gloves, Hamlet.					
2.	Task: Apply personal protective equipment	Terminal Performance Objective (TPO): Given: Protective equipment	Th. 0.5	Pr. 1.0	Tot. 1.5	

		<p>What: Apply personal protective equipment</p> <p>How well:</p> <ul style="list-style-type: none"> • The status of the protective equipment must be checked • Safety goggle, helmet, gloves to be worn at all times during execution of tasks and safety belt must be tightened properly 			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect the personal protective equipment. 2. Check the condition of protective equipment. 3. Use the protective equipment. 4. Maintain the protective equipment. 5. Preserve the protective equipment in organized way at safe place. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Explain about the uses of protective equipment. • Explain how to use the protective equipment. • Explain the function of the protective equipment in hazards works. • Use the protective equipment properly. • Explain the positive and negative side of uses the protective equipment. • List the protective equipment. 			
	<p>Tools/equipment/materials required: Hamlet, Life Jacket, Safety Goggles, Hand Gloves, Safety Belt and Safety shoes/Gumboot.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Hamlet.</p>				
3.	<p>Task: Control House-Keeping Hazards</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Simulated situation</p> <p>What: Control House-Keeping Hazards</p> <p>How well:</p> <ul style="list-style-type: none"> • Tools, equipment and safety materials of workplace must be placed in organized way • The periodical maintenance of tools, equipment and safety 	Th. 0.5	Pr. 0.5	Tot. 1.0

		materials of workplace must be done.			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. List the expected hazards exist in workplace. 2. Place the tools and equipment in workplace following organized way. 3. Follow up the periodic maintenance of tools and equipment. 4. Handle the tools/equipment carefully. 5. Follow up the maintenance of all the electrical fittings and fixtures. 6. Identify the faulty tools/equipment. 7. Dispose the wastage/outdated tools and equipment from workplace. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Define house-keeping hazards. • Identify the types of housekeeping hazards. • Explain the necessity of keeping the house neat and clean (including dinning place, washroom/toilets, store and exit path). • Understand safety precautions to be taken for housekeeping hazards. • List the expected house-keeping hazards in the workplace. 			
	<p>Tools/equipment/materials required: Tools and equipment including safety materials.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Hamlet.</p>				
4.	<p>Task: Apply First Aid on Minor Injuries.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Dummy of a simulated victim.</p> <p>What: Apply First Aid on Minor Injuries</p> <p>How well:</p> <ul style="list-style-type: none"> • Injured person must be isolated from the crowd. • Information of accident must be given to the administration. 	Th. 0.5	Pr. 1.0	Tot. 1.5
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Isolate the injured person. 2. Collect first aid box with necessary medicine, materials and equipment. 3. Clean the injured area. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Define the minor injury. • Explain about the first aid treatment. • Describe the steps of dressing. • List out the first aid medicine, equipment and materials. 			

	<ol style="list-style-type: none"> 4. Dress the injured portion properly. 5. Use the necessary medicine and other materials as per requirement. 6. Inform the administration. 7. Restore the First Aid Box. 									
<p>Tools/equipment/materials required: First Aid Box with required medicine and materials.</p> <p>PPE: Apron, Safety Shoe, Hamlet.</p>										
5.	<p>Task: Control Electrical Fire Hazards</p>	<table border="1"> <thead> <tr> <th data-bbox="764 569 1170 653">Terminal Performance Objective (TPO):</th> <th data-bbox="1170 569 1279 653">Th.</th> <th data-bbox="1279 569 1386 653">Pr.</th> <th data-bbox="1386 569 1489 653">Tot.</th> </tr> </thead> <tbody> <tr> <td data-bbox="764 653 1170 1163"> <p>Given: Work place situation (real/simulation)</p> <p>What: Control Electrical Fire Hazards</p> <p>How well:</p> <ul style="list-style-type: none"> • Firefighting aids must be checked periodically. • Emergency exit must be followed during evacuation. </td> <td data-bbox="1170 653 1279 1163">0.5</td> <td data-bbox="1279 653 1386 1163">0.5</td> <td data-bbox="1386 653 1489 1163">1.0</td> </tr> </tbody> </table>	Terminal Performance Objective (TPO):	Th.	Pr.	Tot.	<p>Given: Work place situation (real/simulation)</p> <p>What: Control Electrical Fire Hazards</p> <p>How well:</p> <ul style="list-style-type: none"> • Firefighting aids must be checked periodically. • Emergency exit must be followed during evacuation. 	0.5	0.5	1.0
Terminal Performance Objective (TPO):	Th.	Pr.	Tot.							
<p>Given: Work place situation (real/simulation)</p> <p>What: Control Electrical Fire Hazards</p> <p>How well:</p> <ul style="list-style-type: none"> • Firefighting aids must be checked periodically. • Emergency exit must be followed during evacuation. 	0.5	0.5	1.0							
<p>Steps:</p> <ol style="list-style-type: none"> 1. Check the availability of fire extinguishers, sands buckets/ reservoir. 2. Wear safety device to work closed to the electrification area. 3. Check the fire extinguisher. 4. Apply fire extinguisher during small electric fire. 5. Inform the police and fire station for mass electric fire. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Describe the possible electrical fire hazards in workplace. • List the types of electrical hazards. 								
<p>Tools/equipment/materials required: Safety materials like fire Extinguisher, Sands, Vacuum cleaner/hand blower etc.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Hamlet.</p>										

Module 2: Apply Fundamental Skills of Tiles and Marble Fitting Works

22.2. Module- 2: Apply Fundamental Skills of Tiles and Marble Fitting Works						
	Description: This module covers the fundamentals skills of tiles/marble fitting. It provides skills and knowledge required to apply and maintain tiles and marble fitting related tools, equipment and materials. Additionally, this module deals with measurement and calculation, and interpretation of drawing and specifications.			Hours		
	Module outcomes: After completion of this module, trainees will be able to: <ul style="list-style-type: none"> Identify tools, equipment and materials for tiles /marble fitting; Apply hand tools and power tools; Perform basic measurement and calculation (Square, Circular, and Rectangular); Interpret drawing and specifications; Maintain tools and equipment. 			Th. 7.0	Pr. 20.0	Tot. 27.0
1.	Task: Identify tools, equipment and materials for tiles /marble fitting.	Terminal Performance Objective (TPO): Given: Different types of tiles/marble materials, tools and equipment and simulated work place. What: Identify tools, equipment and materials for tiles /marble fitting How well: <ul style="list-style-type: none"> Tiles materials, tools, and equipment are identified and labeled 	Th. 2.0	Pr. 4.0	Tot. 6.0	
	Steps: <ol style="list-style-type: none"> Wear Personal Protective Equipment. Collect different types of tiles/marble materials tools and equipment. Place them separately on the table. Identify the tiles/marble materials, tools and equipment. List out the name of each materials, tools and equipment. 	Enabling objectives: <ul style="list-style-type: none"> Explain the necessity of PPE. List out the tiles/marble materials and their specification. Discriminate the tiles/marble materials, tools and equipment. Explain the application of different types of tools and equipment. 				

	<p>6. Label the nametag on each material, tools and equipment. 7. Clean the workplace. 8. Restore the material, tools and equipment.</p>				
<p>Tools/equipment/materials required: Hand Grinding Machine , Measuring Tape, Shovel, Diamond wet saw, Trowel, Nose trowel, Plumb Bob, Chipping Hammer, Soft Hammer, Cross, Tile Cutter, Try square, String, Level pipe, Mortar pan, Bucket, Wire brush, Cold Chisel, Hammer, Sprit level, Grinding Stone, Jar, Scrap, Jointer, Foam, Marker pen, Ceramic Tile, Homogeneous Tile, Marble, PVC tile, Mosaic Tile, Cement, Local Sand , Con Mix ,Adhesive Fire Extinguisher,.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves.</p>					
2.	<p>Task: Apply hand tools and power tools</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Simulated work place, various tools and equipment.</p> <p>What: Apply hand tools and power tools.</p> <p>How well:</p> <ul style="list-style-type: none"> • Safety precautions are taken while using hand tools and power tools. • Appropriate hand tools and power tools are selected for specific job. • Power tools are switched OFF/ON while it is operated. 	Th. 1.0	Pr. 7.0	Tot. 8.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Wear personal protective equipment. 2. Identify nature of job. 3. Select the appropriate hand tools and power tools as per nature of the job. 4. Apply hand tools and power tools for specific work. 5. Clean the tools after use. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Explain the functions of hand tools and Power tools used for Tiles/Marble works. • Describe the application of hand tools for Tiles/Marble works. • Explain how to different work to be done by one grinder machine. 			

	<p>6. Clean the workplace. 7. Restore the materials.</p> <p>Note: In case of using power tools, the power cable to be connected properly.</p>									
<p>Tools/equipment/materials required: Hand Grinding Machine , Measuring Tape, Diamond wet saw, Trowel, Nose trowel, Plumb Bob, Chipping Hammer, Soft Hammer, Cross, Tiles Cutter, Try square, String, Level pipe, Shovel, Mortar pan, Bucket, Wire brush, Sprit level, Grinding Stone, Jar, Scrap, Jointer, Foam, Marker pen and Fire Extinguisher.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Goggles, Mask, Ear Plug, Helmet.</p>										
3.	<p>Task: Perform basic measurement and calculation (Square, Circular and Rectangular).</p>	<table border="1"> <thead> <tr> <th data-bbox="764 646 1166 730">Terminal Performance Objective (TPO):</th> <th data-bbox="1166 646 1273 730">Th.</th> <th data-bbox="1273 646 1382 730">Pr.</th> <th data-bbox="1382 646 1487 730">Tot.</th> </tr> </thead> <tbody> <tr> <td data-bbox="764 730 1166 1465"> <p>Given: Actual site/classroom, Drawing and Specification, real objects, Measuring tools and calculator.</p> <p>What: Perform basic measurement and calculation (Square, Circular, Rectangular)</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement error is ± 2 mm for linear measurement of tiles/marble. • No calculation error found </td> <td data-bbox="1166 730 1273 1465">2.0</td> <td data-bbox="1273 730 1382 1465">3.0</td> <td data-bbox="1382 730 1487 1465">5.0</td> </tr> </tbody> </table>	Terminal Performance Objective (TPO):	Th.	Pr.	Tot.	<p>Given: Actual site/classroom, Drawing and Specification, real objects, Measuring tools and calculator.</p> <p>What: Perform basic measurement and calculation (Square, Circular, Rectangular)</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement error is ± 2 mm for linear measurement of tiles/marble. • No calculation error found 	2.0	3.0	5.0
Terminal Performance Objective (TPO):	Th.	Pr.	Tot.							
<p>Given: Actual site/classroom, Drawing and Specification, real objects, Measuring tools and calculator.</p> <p>What: Perform basic measurement and calculation (Square, Circular, Rectangular)</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement error is ± 2 mm for linear measurement of tiles/marble. • No calculation error found 	2.0	3.0	5.0							
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect measuring tape and materials. 2. Mark the start and end points 3. Measure the linear dimension (length and width) of tiles/marbles in MKS and FPS system. 4. Measure the length and width of actual work place area. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Explain the unit of MKS and FPS system. • Describe application of measuring tools. • List the available size and shape of tile/marble. • Explain different size and thickness of available use of tile/Marble. • State the formulas for calculating different types of Area (Square, rectangular, Circular). • Describe how to find out the required quantity of tiles and marble. 								

	<ol style="list-style-type: none"> 5. Measure the diameter/radius for round-shaped work place area in MKS and FPS system. 6. Record all measurements. 7. Calculate the area of square, rectangular and circular area. 8. Find out the required quantity of tiles/marble. 9. Estimate tiles/marble as per the calculation. 10. Restore all tools and materials. 				
<p>Tools/equipment/materials required: Measuring tape, Marker pen, Steel Ruler (1'), Try square, different type of shapes (straight line, circle), calculator.</p> <p>PPE: Apron, Safety Shoe, Helmet.</p>					
4.	<p>Task: Interpret drawing and specifications.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Working drawing of tiles/marble fitting area and specification.</p> <p>What: Interpret drawing and specifications.</p> <p>How well:</p> <ul style="list-style-type: none"> • Specifications and identified and explained. • Abbreviations are interpreted. • Signs and symbols are identified and explained. 	Th. 1.0	Pr. 3.0	Tot. 4.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect drawing and specification. 2. Identify the work area as per drawing and specification. 3. Identify the terms and abbreviations. 4. Identify signs and symbols. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Define specification and working drawing. • State different types of signs, symbols used for tiles/marble fitting works. • Explain how to interpret dimension, scale, signs and symbols. 			

	<p>5. Interpret the schedules, dimensions, signs/symbols in the drawing and specification.</p> <p>6. Restore the drawing and specification.</p>				
<p>Tools/equipment/materials required: Technical Specification and Drawing.</p> <p>PPE: Apron, Safety Shoe, Helmet.</p>					
5.	<p>Task: Maintain tools and equipment</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Different types of tools and equipment, Maintenance chart/schedule</p> <p>What: Maintain tools and equipment</p> <p>How well:</p> <ul style="list-style-type: none"> • Tools & equipment are inspected and found well. • Maintenance is done as per maintenance chart/schedule • No damage made while maintaining tools/ equipment • Non-functional tools and equipment are disposed. 	Th. 1.0	Pr. 3.0	Tot. 4.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools and equipment. 2. Check each tools and equipment individually. 3. Sharpen the cutting tools. 4. Remove dust and rust from tools & equipment. 5. Clean tools and equipment. 6. Dry the tools and equipment, 7. Check faults in tools and equipment. 8. Repair the minor faults. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • List the tools and equipment required for Tiles and Marble Fitting. • State the necessity of maintaining the tools & equipment. • Explain how to maintain tools & equipment. • Describe preventive maintenance methods, techniques and procedure. 			

	<p>9. Dispose nonfunctional tools & equipment, if any. 10. Restore the tools & equipment.</p>	
<p>Tools/equipment/materials required: Hand Grinding Machine , Measuring Tape, Diamond wet saw, Trowel, Nose trowel, Plumb Bob, Chipping Hammer, Soft Hammer, Cross, Tile Cutter, Try square, String, Level pipe, Shovel, Mortar pan, Bucket, Wire brush, Cue box, Fire Extinguisher, Sprit level, Grinding Stone, Scrap, Jointer.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Goggles, Mask, Ear Plug, Helmet.</p>		

Module 3: Perform Tiles/Marble Cutting

22.3. Module- 3: Perform Tile/Marble Cutting

Description: This module covers the skills and knowledge of cutting tiles/marble.		Hours			
Module outcomes: After completion of this module, trainees will be able to: <ul style="list-style-type: none"> • Cut ceramic tiles using pen cutter /Scriber; • Cut tiles using grinding machine; • Cut marble using circular saw. 		Th. 3.0	Pr. 30.0	Tot. 33.0	
1.	Task: Cut ceramic tiles using pen cutter /Scriber.	Terminal Performance Objective (TPO): Given: Any measurement/ size, layout and specification. What: Cut ceramic tile using pen cutter /Scriber. How well: <ul style="list-style-type: none"> • Measurement error is $\pm 2\text{mm}$ • Cutting edge is straight, smooth and right-angled. 	Th. 1.0	Pr. 5.0	Tot. 5.0
Steps: <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Place soaked tile on the table/floor surface. 3. Mark the tile using marker/pencil according to the measurement. 4. Scribe the tiles with pen cutter (Scriber) firmly. 5. Place a support on one side of the line. 6. Push firmly and evenly on each side of the tile. 7. Separate the tiles/marble. 8. Apply sharpening stone to smoothen the cut edge. 9. Clean the workplace. 10. Restore tools and materials. 		Enabling objectives: <ul style="list-style-type: none"> • State the purpose of soaking tile before cutting. • Explain the precautions to be taken while cutting tiles/marble. • Explain the procedure of cutting tile using pen cutter (Scriber). • State the process of pushing tile to get two portions of tiles. 			

	<p>Tools/equipment/materials required: Marker pen/pencil, measurement tape, steel ruler, tri square, pen cutter (Scriber), pumice stone (80/120), tiles.</p> <p>PPE: Safety Goggles (clear), Hand Gloves, Mask, Apron, Helmet, Ear plug.</p>				
2.	<p>Task: Cut tiles using grinding machine.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Any measurement/size, layout, specification.</p> <p>What: Cut tile using Grinding machine.</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement error is within $\pm 2\text{mm}$. • Tile is not cracked. • Cutting edge is smooth and right angled. 	Th. 1.0	Pr. 15.0	Tot. 16.0
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Place soaked tiles/marble on the table/floor surface. 3. Mark the tile/marble using marker/pencil according to the measurement. 4. Place the tile/marble on even table or floor. 5. Set appropriate attachment (cutting disc) with grinding machine. 6. Connect the grinding machine with power supply. 7. Switch ON the grinding machine. 8. Perform cutting according to mark line. 9. Apply water continuously during cutting tile/marble. 10. Apply sharpening stone to smoothen the sharp edges. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Explain the procedure of using grinding machine. • State the process of angular cutting of tile. • Describe the importance of applying water while cutting tile. 			

	<p>11. Switch OFF the Grinding Machine</p> <p>12. Clean the workplace.</p> <p>13. Restore the tools and materials.</p>				
<p>Tools/equipment/materials required: Marker pen/pencil, Measurement Tape, Steel Ruler, Try square, Grinding machine, Cutting disc, Pumice stone (80/120), Tiles.</p> <p>PPE: Safety Goggles (clear), Hand gloves, Mask, Apron, Helmet, Ear plug.</p>					
3.	<p>Task: Cut marble using circular saw.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Any measurement/size, layout and specification.</p> <p>What: Cut marble using circular saw.</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement error is within $\pm 2\text{mm}$. • Marble is not cracked. • Cutting edge is smooth and right angled. 	Th. 1.0	Pr. 10.0	Tot. 11.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Place tiles/marble on the table/floor surface. 3. Mark the tile/marble using marker/pencil according to the measurement. 4. Place the tile/marble on table/even surface 5. Connect the circular saw with power supply. 6. Switch ON the circular saw. 7. Perform cutting according to the marked line. 8. Apply water continuously while cutting. 9. Separate tiles/marbles. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Describe the method of tile/marble cutting. • Discuss precautions to be taken while cutting. • State the process of marking straight line on marble. • Explain the procedure of using circular saw. 			

	<p>10. Apply sharpening stone to smoothen the sharp edges. 11. Switch OFF the Circular Saw 12. Clean the workplace. 13. Restore the tools and materials.</p>	
<p>Tools/equipment/materials required: Marker pen/pencil, Measurement Tape, Steel ruler, Tri square, Circular saw, Pumice stone (80/120), Water paper, Marble.</p> <p>PPE: Safety Goggles (clear), Hand gloves, Mask, Apron, Helmet, Ear plug.</p>		

Module 4: Lay Tile/Marble

22.4. Module- 4: Lay Tile/Marble.						
	Description: This module deals with the skills and knowledge required for tiles/marble fitter to lay tile/marble on different places.			Hours		
	Module outcomes: After completion of this module, trainees will be able to- <ul style="list-style-type: none"> • Prepare surface for tile/marble laying; • Prepare mortar with cement and sand; • Prepare cement grouting /slurry; • Lay tiles on wall; • Lay tiles on the floor; • Lay marble on the floor; • Apply filler in tiles/marble joint; • Lay PVC tiles; • Lay Tiles/Marble in Floor and Wall using Commix/Adhesive. 			Th. 12.0	Pr. 102.0	Tot. 114.0
1.	Task: Prepare surface for tiles/marble laying.	Terminal Performance Objective (TPO): Given: Layout, specification, reference level What: Prepare surface for tile/marble laying. How well: <ul style="list-style-type: none"> • Surface is uniformly chipped. • Surface is clean and free from dust/foreign material. • No damage or crack seen on the surface. 	Th. 1.0	Pr. 5.0	Tot. 6.0	
	Steps: <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Remove material from work surface. 3. Chip the surface uniformly. 4. Remove the chipped materials and dusts. 5. Spray water to the surface. 6. Clean tools and the surface. 	Enabling objectives: <ul style="list-style-type: none"> • Identify tools used for chipping. • Explain the importance of chipping. • Discuss the reasons for spraying water on the working surface. 				

	7. Restore tools & materials.	<p>Tools/equipment/materials required: Trowel, Chipping Hammer, Shovel, Mortar pan, Bucket, Wire brush, Scrap, Sweep, Cold Chisel, Hammer.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Goggles, Mask, Ear Plug, Helmet.</p>			
2.	<p>Task: Prepare mortar with cement and sand.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Simulated work site/ Workshop, necessary tools, materials and Specification.</p> <p>What: Prepare mortar with cement and sand.</p> <p>How well:</p> <ul style="list-style-type: none"> • Mortar is mixed consistently and uniformly. • Sand and cement ratio is identified. • Water and cement ratio is maintained. 	Th. 1.0	Pr. 6.0	Tot. 7.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Clean the working surface. 3. Take cement and sand as per ratio. 4. Mix cement and sand uniformly with dry condition. 5. Add water to the dry mortar. 6. Mix the mixture uniformly. 7. Check for consistency and uniformity of the mortar. 8. Clean tools and workplace. 9. Restore tools and materials. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • List the required tools & materials for mixing mortar. • Explain the procedure of making mortar. • Discuss the quantity of water needed for mortar preparation (floor and wall). • Explain why the fresh mortar should be used. • Interpret the ratio of sand and cement in mortar preparation. • Describe why the mortar should be mixed consistently and uniformly. 			
<p>Tools/equipment/materials required: Cue box, Trowel, Shovel, Mortar pan, Bucket, Wire brush, Scrap, Sweep, Cement, Local Sand, fresh water.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves.</p>					

3.	<p>Task: Prepare cement grouting/slurry.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Working Site and Necessary tools, Materials and specification.</p> <p>What: Prepare cement grouting /slurry.</p> <p>How well:</p> <ul style="list-style-type: none"> • Consistency and uniformity of the grout/slurry is maintained during mixture. • Water and cement ratio is maintained. 	Th. 1.0	Pr. 3.0	Tot. 4.0
<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect necessary tools and materials. 2. Take cement as per the specification. 3. Prepare grout/slurry as per the given specification. 4. Check the consistency and uniformity of the grout/slurry. 5. Stir the grout/slurry time to time. 6. Clean the tools. 7. Restore tools & materials. 		<p>Enabling objectives:</p> <ul style="list-style-type: none"> • List the required tools & materials. • State the procedure to make grout/ slurry. • Explain application of grout/slurry. • Explain when use white cement to make slurry/grout. • Discuss the requirement grouting/slurry. 			
<p>Tools/equipment/materials required: Trowel, Mortar pan, Bucket, Portland Cement, White cement, Fresh water.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Mask, Goggles.</p>					
4.	<p>Task: Lay tiles on the wall.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Drawing, measurement sheet, specification, and wall.</p>	Th. 2.0	Pr. 20.0	Tot. 22.0

		<p>What: Lay tiles on the wall.</p> <p>How well:</p> <ul style="list-style-type: none"> • Joint's gap is uniform. • Surface is even. • Joint is linear. • No void seen between mortar and tiles. • Corner joint is right angled. 			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect required tools and materials. 2. Level the working surface by cutting and filling. 3. Clean the surface using stick broom. 4. Clean the wall by spraying water. 5. Set the horizontal level using spirit level/ pipe level. 6. Set vertical level using plumb bob. 7. Mix mortar maintaining given cement-sand ratio. 8. Apply cement grouting/slurry onto the wall surface with stick broom. 9. Apply mixed mortar on back side of tiles uniformly. 10. Place the tiles on the grouted wall surface. 11. Hit the tiles with wooden/rubber mallet as required. 12. Apply tile cross/spacer to maintain equal gap. 13. Fill/remove mortar as required. 14. Check the level using spirit level/plumb bob. 15. Clean the surface using jhut cloth/foam. 16. Clean tools and workplace. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • List the tools required for laying tiles. • State the importance of soaking tiles. • Explain the procedure of setting level. • Explain Saturated Surface Dry (SSD) condition. • Define tiles separator/spacer. 			

	17. Restore tools and materials.	<p>Tools/equipment/materials required: Tiles, cement, sand, water, trowel, mortar pan, water level pipe, wooden/rubber mallet, chipping hammer, bucket, nail, thread, spirit level, plumb bob, try square, measurement tape, spade, and shovel.</p> <p>PPE: Safety Goggles (clear), Hand Gloves, Mask, Apron, Helmet.</p>			
5.	<p>Task: Lay tiles on the floor.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Drawing, measurement sheet, specification, and floor.</p> <p>What: Lay tiles on the floor.</p> <p>How well:</p> <ul style="list-style-type: none"> • Joint's gap is uniform. • Surface is even. • Joint is linear. • Corner joint is right angled. • Equal gap is maintained during laying tiles. • No void seen between tiles and surface. 	Th. 2.0	Pr. 22.0	Tot. 24.0
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect required tools and materials. 2. Perform chipping on floor. 3. Clean the surface using stick broom. 4. Clean the floor with water. 5. Set the horizontal level using water level pipe. 6. Cut/fill uneven floor surface according to the set level. 7. Mix mortar maintaining given cement-sand ratio. 8. Apply grouting on the surface. 9. Apply mortar on the surface. 10. Place tiles on the mortar as per set alignment. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Explain the importance of curing after 24 hours. • State the procedure of maintaining slope. • Express the procedure for laying tiles on floor. • State water cement ratio of mortar for floor tiles. • 			

	<p>11. Press the tiles uniformly. 12. Pull out the tiles immediately. 13. Fill/remove mortar as required. 14. Apply cement grouting/slurry on the mortar. 15. Place tiles on the grouted mortar. 16. Hit the tiles with wooden/rubber mallet as required. 17. Maintain equal gap between tiles to tiles by using separator/spacer. 18. Check the level using spirit level. 19. Maintain the slope as required. 20. Clean the surface using jhut cloth. 21. Clean the workplace. 22. Restore tools and materials. 23. Perform curing after 24 hours for 7 days.</p>				
<p>Tools/equipment/materials required: Tiles, cement, sand, water, trowel, mortar pan, water level pipe, wooden/rubber mallet, chipping hammer, bucket, nail, thread, spirit level, tri square, measurement tape, spade, and shovel.</p> <p>PPE: Safety Goggles (clear), Hand Gloves, Mask, Apron, Helmet, Ear plug.</p>					
6.	<p>Task: Lay marble on floor.</p>	<p>Terminal Performance Objective (TPO):</p> <p>Given: Drawing, measurement sheet, specification, and floor.</p> <p>What: Lay marble on floor.</p> <p>How well:</p> <ul style="list-style-type: none"> • Joint's gap is uniform. • Surface is even. • Joint is linear. • No gap seen between mortar and marble. • Corner joint is right angled. 	Th. 2.0	Pr. 20.0	Tot. 22.0

		<ul style="list-style-type: none"> No void seen between marble and mortar. 			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect required tools and materials. 2. Perform chipping on floor. 3. Clean the surface using stick broom. 4. Clean the floor by water. 5. Level floor surface according to the set level. 6. Mix mortar maintaining given cement-sand ratio. 7. Apply grouting on the surface. 8. Apply mortar on the surface. 9. Place marble on the mortar. 10. Press the marble uniformly. 11. Pull out the marble immediately. 12. Fill/remove mortar as required. 13. Apply cement grouting/slurry on the mortar. 14. Apply cement paste on the back side of marble uniformly. 15. Place marble on the grouted mortar. 16. Hit the marble with wooden/rubber mallet as required. 17. Maintain the slope as required. 18. Clean the surface using jhut cloth. 19. Clean tools and workplace. 20. Restore tools and materials. 21. Perform curing after 24 hours for 7 days. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> Differentiate laying procedure of marble over tiles. Explain why cement paste should be kept at the back side of the marble. State the necessity of curing and duration. Discuss the functions of leveling the floor. Explain the importance of curing. 			
<p>Tools/equipment/materials required: Marble, cement, sand, water, trowel, mortar pan, water level pipe, wooden/rubber mallet, chipping hammer, bucket, nail, thread, spirit level, tri square, measurement tape, spade, and shovel.</p> <p>PPE: Safety Goggles (clear), Hand Gloves, Mask, Apron, Helmet.</p>					

7.	Task: Apply filler in tiles/marble joint.	Terminal Performance Objective (TPO): Given: Specification and Filler. What: Apply filler on tile/marble joint. How well: <ul style="list-style-type: none"> • Color is matched with tile/marble. • Filler is continuous in joint. • Width of filler is equal. 	Th. 1.0	Pr. 5.0	Tot. 6.0
Steps: <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Clean the tiles/marble joint using scriber/nail. 3. Wash the surface with water jet. 4. Prepare filler as required. 5. Apply filler using scraper/Formica 6. Remove excess filler using muslin cloth. 7. Perform curing after 24 hours for 3 days. 8. Clean the floor area using floor cleaner. 9. Clean tools and work place. 10. Restore the tools and materials. 		Enabling objectives: <ul style="list-style-type: none"> • Explain the procedure of mixing filler. • Explain importance of color matching with tile/marble. 			
Tools/equipment/materials required: Scraper, Formica, color pigment, white cement, floor cleaner, bucket, foam, markin cloth, and joint filler. PPE: Hand Gloves, Mask, Apron, Helmet.					
8.	Task: Lay PVC tiles	Terminal Performance Objective (TPO): Given: Specification and plastered surface.	Th. 1.0	Pr. 11.0	Tot. 12.0

		<p>What: Lay PVC tile</p> <p>How well:</p> <ul style="list-style-type: none"> • Surface is even. • No wrap is seen. • No gap is seen. 			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools and materials. 2. Level the surface by plaster (if required). 3. Apply neat cement finishing coat on the surface. 4. Perform curing for 7 days. 5. Wipe the surface with cloth. 6. Remove oily substances and dry. 7. Set the alignment for PVC tile by using water level pipe and thread. 8. Apply adhesive on the surface and back side of PVC tile. 9. Leave for 5-10 minutes for drying. 10. Place the tile on the surface as per alignment. 11. Rub the tile with a uniform pressure evacuate total air in between floor and tiles. 12. Clean the surface with thinner as required. 13. Clean workplace. 14. Restore tools and materials. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • Define neat cement finishing. • Explain how to level working surface by plaster. • Explain the procedure of applying adhesive on floor and PVC tiles. 			
	<p>Tools/equipment/materials required: PVC tile, adhesive (solution), cement, sand, trowel, pan, steel float, foam, spade, shovel, wooden float, Aluminum patta, and water level, thinner, Royal plug.</p> <p>PPE: Hand Gloves, Mask, Apron, Goggles.</p>				
9.	<p>Task: Lay Tiles/Marble in Floor and Wall using Conmix/Adhesive.</p>	<p>Terminal Performance Objective (TPO):</p>	Th. 1.0	Pr. 10.0	Tot. 11.0

		<p>Given: Pre prepared work place, Necessary tools, Materials and drawing.</p> <p>What: Lay Tiles/Marble in Floor and Wall using Conmix/Adhesive.</p> <p>How well:</p> <ul style="list-style-type: none"> • Measurement of level error is within $\pm 2\text{mm}$. • Gap between two tiles/marble and alignment is uniform. • Tiles are not cracked and scratched. • Joint Filler is uniform. 			
	<p>Steps:</p> <ol style="list-style-type: none"> 1. Collect tools, materials & drawing. 2. Level wall using plaster/pattern stone. 3. Check level using pipe as per layout. 4. Set the alignment for laying tile/marble. 5. Fix the thread in both ends of wall by maintaining alignment and level. 6. Add water with Conmix and mix properly on mortar pan. 7. Lay the Conmix on the working surface by notch trowel in 3 mm to 5 mm thickness. 8. Set the tile/marble with appropriate level and alignment. 9. Press on top of tile/marble for setting using soft hammer. 10. Set the cross between two tile/marble maintaining equal gap. 	<p>Enabling objectives:</p> <ul style="list-style-type: none"> • List the required materials for laying tiles/marble. • Explain the uses of conmix. • Describe the procedure of tile/marble laying by using conmix. • Explain the step of leveling. • State the procedure of applying filler. • 			

<p>11. Check the level with spirit level. 12. Remove the cross after setting of Commix. 13. Clean the joint and tile/marble surface using scrap and wet foam. 14. Fill the joint with jointing filler with proper color. 15. Remove and clean extra filler from the surface of tile/marble. 16. Clean the workplace. 17. Restore tools & materials.</p> <p>** Before using conmix in the wall surface, the surface of the wall must be plastered.</p>	
<p>Tools/equipment/materials required: Notch trowel, Trowel, Hand Shovel, Mortar pan, Soft hammer, Bucket, Wire brush, Thread, Sprit Level, Plumb bob, Scrap, Sweep, Foam, Fresh water, Conmix/Adhesive.</p> <p>PPE: Apron, Safety Shoe, Hand Gloves, Mask.</p>	

23. LIST OF TOOLS, EQUIPMENT AND MATERIALS:

LIST OF TOOLS AND EQUIPMENT:

S. No	Name of the items	Specification	QTY.	Unit
1.	Aluminum Float	4'6'	20	Pcs
2.	Ball Pin Hammer	1 lbs	20	Pcs
3.	Ball Pin Hammer	1/2 lbs	20	Pcs
4.	Bucket	20 liter	20	Pcs
5.	Chipping Hammer	1 lbs	20	Pcs
6.	Claw Hammer	1lbs	20	Pcs
7.	Cold Chisel	10"	20	Pcs
8.	Combination Pliers	8"	20	Pcs
9.	Cross/ Separator	Standard size	100	Pcs
10.	Cue box	Standard size	10	Pcs
11.	Hacksaw frame with blade	steel body	20	Pcs
12.	Water level/Pipe Level(6mm - 10mm dia)	10 m long	10	Pcs
13.	Measuring Tape	3m/5m, Steel	20	Pcs
14.	Mortar Pan (18 "/20" dia)	As required size	20	Pcs
15.	Notch Trowel	2"/4"	20	Pcs
16.	Plumb bob	100gm	20	Pcs
17.	Power Hand Grinding Machine	Standard size	5	Pcs
18.	Power Tile Cutter	4" dia disc	20	Pcs
19.	Scissor	10" Steel	20	Pcs
20.	Shovel	Standard size	10	Pcs
21.	Sledge Hammer	5 lbs	5	Pcs
22.	Soft Hammer	Standard size	20	Pcs
23.	Spirit level	12"/24"	20	Pcs
24.	Star Screw driver	8"-12"	20	Pcs
25.	Steel Float	10"	20	Pcs
26.	Stick Broom	Good quality	20	Pcs
27.	Tile cutter pen	6"	20	Pcs
28.	Trowel	6"	20	Pcs
29.	Try square	12"/24"	20	Pcs

LIST OF TRAINING MATERIALS:

S. No	Name of the items	Specification	QTY.	Unit
1.	Cement (Grey)	Standard	20	KG
2.	Ceramic tile	Available size	100	sft
3.	Coloring pigment	As required	500	gm
4.	Con Mix/Adhesive		5	Bag
5.	Floor Cleaner		1000	ml
6.	Homogenous tiles	Available size	100	sft
7.	Jhut Cloth		20	KG
8.	Joint Filler	Standard	10	KG

S. No	Name of the items	Specification	QTY.	Unit
9.	Marble	Available size	50	sft
10.	Marker pen		10	Nos.
11.	Markin cloth		20	Yard
12.	PVC tiles	Available size	50	sft
13.	Sand (F.M-1.5)	Standard	200	cft
14.	Steel Nail	1.5"-3"	5	lbs
15.	Water paper		10	nos
16.	White Cement		5	Bag
17.	Flower Broom	Good quality	20	Pcs
18.	Foam	Good quality	20	Pcs
19.	Hose pipe	¾" to 1" dia	200	Pcs
20.	Jar	2 liter	10	Pcs
21.	Manual tiles cutter	Standard size	5	Pcs
22.	Mixing Board	4'x8' size	10	Pcs
23.	Nylon Thread	0.5 – 1 mm dia	1	kgs
24.	Pointer	6"	20	Pcs
25.	Pumice Stone	2"x2"x4"	20	Pcs
26.	Royal plug	6 no	20	dozen
27.	Scraper	2"-4"	20	Pcs
28.	Wire brush	8"	20	Pcs
29.	Wooden Float	10"	20	Pcs
30.				

24. PHYSICAL FACILITIES FOR 20 TRAINEES:

S. No	Name of the items	Specification	QTY.	Unit
1.	Working Place/Practical Room	40' X 30'	1	Room
2.	Stool	Plastic (RFL)	20	Pcs
3.	Training wall	20' X 7'	2	Pcs
4.	Instructor Chair Arm Less	Size: 18" X 16" X 36"	2	Pcs
5.	Working Table	Size: 8' X 3' X 3'	5	Pcs
6.	Class Room Table	Size: 24" X 30" X 36"	1	Pcs
7.	Display Board	4' X8' X3/4", Surface Cover With White Formica, Border bracing with 3/4 " Aluminum Angle	1	Pcs
8.	White Board	6'X4'X3/4" Surface Cover With White Formica, Border bracing with 3/4 " Aluminum Angle	1	Pcs
9.	Steel Rack	44" X 72" X 15" 20-22 SWG	2	Pcs

S. No	Name of the items	Specification	QTY.	Unit
10.	First Aid Box with accessories		1	
11.	Steel Almirah	Standard Size , 20-22 SWG	2	Pcs
12.	White Board Marker	Red leaf	5	Doz
13.	Water Filter	40 Ltr	1	Pcs
14.	Safety Goggles	Plastic (Transparent)	20	Pcs
15.	Hand Gloves	Skin/ruber type	20	Pair
16.	Safety Shoes	APS	20	Pair
17.	Helmet	Plastic	20	Pcs
18.	Fire extinguisher	ABC/Co ₂	2	cylinder

25. LIST OF TOOLS IN THE HAND TOOL BOX:

S. No	Name of the items	Specification	QTY.	Unit
1.	Ball Pin Hammer	1 lbs	1	Pcs
2.	Ball Pin Hammer	1/2 lbs	1	Pcs
3.	Chipping Hammer	1 lbs	1	Pcs
4.	Cold Chisel	10"	1	Pcs
5.	Combination Pliers	8"	1	Pcs
6.	Cross/ Separator	Standard size	1	Pcs
7.	Foam	Good quality	1	Pcs
8.	Pipe Level(6mm - 10mm dia)	10 m long	1	Pcs
9.	Measuring Tape	3m/5m, Steel	1	Pcs
10.	Notch Trowel	2"/4"	1	Pcs
11.	Nylon Thread	0.5 – 1 mm dia	1	kgs
12.	Plumb bob	100gm	1	Pcs
13.	Pointer	6"	1	Pcs
14.	Pumice Stone	2"x2"x4"	1	Pcs
15.	Royal plug	6 no	1	dozen
16.	Scissor	10" Steel	1	Pcs
17.	Scraper	2"-4"	1	Pcs
18.	Screw	1.25"/2"	1	gross
19.	Soft Hammer	Standard size	1	Pcs
20.	Sprit level	12"/24"	1	Pcs
21.	Star Screw driver	8"-12"	1	Pcs
22.	Steel Float	10"	1	Pcs
23.	Tile cutter pen	6"	1	Pcs
24.	Trowel	6"	1	Pcs
25.	Try square	12"/24"	1	Pcs
26.	Wire brush	8"	1	Pcs
27.	Wooden Float	10"	1	Pcs

26. SUGGESTED REFERENCE BOOKS:

- Punmia B.C. Dr., Building Construction (Latest Edition)
- Punmia B. C. Dr., Hand Book of Civil Engineering (Latest Edition)
- Dutta B. N., Guide for Tiles and Marble Fitting (Latest Edition)

27. CURRICULUM TERMS AND DEFINITION:

Competency	Competency means a cluster of related abilities, commitments, knowledge, and skills that enable a trainees or person to act effectively in a job.
Curriculum Guide	A curriculum guide is a detail resource for trainers/instructors to conduct training programs effectively. The guide intends to add the trainers/instructors in developing lesson plan, handouts/learning materials, training manuals, and evaluation criteria etc, which are basic elements in the teaching learning process.
Curriculum	A plan for providing sets of learning opportunity to achieve broad goal and related specific objectives for the people by a single school center.
DACUM/RJA	Developing <u>A</u> Curriculum / Rapid Job Analysis. DACUM/RJA is a technique that is used to identify the competencies relevant to a particular occupation. Then the competencies of the DACUM/RJA have been formulated in details to build a curriculum guideline
Duty	Duty is an arbitrary clustering of related tasks in to broad functional area or general area of responsibility of trainees.
Enabling Objective	A statement expressing a knowledge, skills or attitudes those will enable the trainee to accomplish a terminal performance objective.
Instructional Guide	Instructional guide is a well-planned and structured document for the instructor to deliver effective instruction so that trainees can attain learning objectives as per training standards.
Module	A module is defined as a specific learning material. Modules are essentially self-contained. Self-instructional packages, with learning paced by each learner according to his/her individual ability and needs. A module covers either a single element of subject matter content or a group of content elements forming a discrete unit of subject matter or area of skills.
Occupational Analysis	Occupational analysis is a process used to identify the duties and tasks those are important to workers in any given occupation. A number of alternative and acceptable approaches to occupational analysis are available.
Program guide	A program guide is a comprehensive resource for trainers/instructors, planners, and top-level management for planning and implementation of any training programs.
Program Objectives	The objectives are set in a broad way to target to achieve mastery learning of the complete occupation.
Skill	The ability to perform on occupational task with the degree of proficiency required for a given occupation
Step	The smallest discrete or observable aspect of a task.
Task Analysis	Task analysis is the process of identifying and writing down the specific skills, knowledge and attitudes that distinguish someone who performs a task competently from someone who cannot perform the task at all.

Task	A unit of work complete in itself that forms a logical part of an occupation. It can be broken down into discrete steps.
Terminal Performance Objective	The objectives set to attain at the end of the training completion. It includes condition, unit of work and standard of teaching and learning.

28. CURRICULUM DEVELOPMENT TEAM:

SL #	Name	Designation	Organization	Contact Number
1.	Engr. Md. Khaled Hossain	Jr. Instructor	Dhaka Polytechnic Institute	01816-545481
2.	Engr. Md. Zillur Rahman Khan	Jr. Instructor	Dhaka Polytechnic Institute	01711-158084
3.	Engr. Md. Wahid Akhter	Project coordinator	Sami Engineers & Developments Ltd	01825-067741
4.	Engr. Aman Ullah	Sr. Project Engineer	Engineer's Foundation & Consultation	01778-822448
5.	Md. Mehadi Hasan Roni	Site Engineer	Monico Ltd	01921-118404
6.	Modan Chandra Dev Sharma	Instructor	Bismillah Technical Training & Testing Ins.	01989-439080

Overall Supervision: Md. Anisuzzaman

Workshop Facilitator(s): Md. Anisuzzaman, Anoj Bhattarai and Akim Shrestha

Record and Documentation: Anoj Bhattarai and Akim Shrestha

29. REFERENCES (FOR DEVELOPING CURRICULUMS)

- SUDOKKHO (2014, September). Rapid Job Analysis of Tiles Fitter. Dhaka Bangladesh.
- Bangladesh Technical Education Board. *National Competency Standards for Mosaic and Tiles Setter*. National Skills Certificate Level-1, 2 & 3 (Civil Construction)

30. LINKAGES OF SUDOKKHO CURRICULUM WITH BTEB COMPETENCY STANDARDS:

S.N.	SUDOKKHO Training Module	BTEB Competency Standards
1.	Practice Occupational Health and Safety (OHS) Procedure	GC100312A : Practice workplace cleanliness GC100412A: Practice occupational health and safety (OHS)
2.	Apply Fundamental Works of Tiles and Marble Fitting	CON100212A: Interpret Drawings and Specifications CON100412A: Use Hand Tools and Power Tools CON100312A: Perform Measurement and Calculations CON100512A: Maintain tools and equipment

		CONTMS100112A: Handle wall and floor tiles materials
3.	Perform Tiles/Marble Cutting	CONTMS100312A: Set floor tiles CONTMS200112A: Fix Wall tiles
4.	Lay Tiles/Marble	CONTMS100212A: Prepare surface for tiling CONTMS100312A: Set floor tiles CONTMS200112A: Fix Wall tiles

31. SPECIAL NOTE FOR TRAINING PROVIDERS:

Since the technology is moving fast, if there will have any new demand/skills beyond the curriculum guide, please send the comments and suggestions to the address given in the curriculum. The project believes that the development has no boundaries.

[SUDOKKHO](#)

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