

GOVERNMENT OF THE PUNJAB

TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR

TILE FIXER

Developed AUGUST - 2024

(6 – MONTHS COURSE)

(06BTLFX2024R1)

CURRICULUM SECTION
ACADEMICS DEPARTMENT

96-H, GULBERG-II, LAHORE

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TRAINING OBJECTIVES:

This course aims to develop the skillful work force in Construction Sector especially in Masonary course like Tile and Marble fixing on the face of walls and concrete. This course comprises of maximum practical work, as without practical work theory is useless. Therefore, TEVTA provide Ninety percent training on practical work and only Ten percent applied theory in the field of Tiles. In construction sector Tile fixing art facing a lot of difficulties for doing the Tile Work at Site.

In this course, students will learn the theory behind and reasons for proper tools, chemicals and equipments. Students completing the course will be adequately equipped to perform fixing or maintenance-related tasks involving marble, stone, masonry and ceramic tile on its surfaces.

The work of Tile Fixing is of paramount important in the field of concrete constructions relating to the specific areas / works. It is one of the major areas of skills, which is still ignored for formal training. Presently, they learn the skill, from senior artisan by working with them for many years as helper. This course covers all the related topics of studies & practicals, enabling the job market to have skillful persons resulting into better results for timely & safely completion of the civil works especially for the area of tile fixing.

CURRICULUM SALIENT:

Min. Entry level	:	Primary preferably Middle
Duration	:	6 – Months
Total Training Hours	:	800 Hours
		07 Hours / day
		(Friday 5 hours)
Ratio of Theory to Practical:		Theory 10 %
	:	Practical 90 %
Medium of Instruction	:	Urdu / English

SKILL COMPETENCY DETAILS:

On successful completion of this course, the trainee should be able to:-

1. Smear all safety precautions, personal and equipment.
2. Apply Basic information about marble
3. Use, sharpen and set common hand tools e.g. measuring, marking and planning tools.
4. Measure and cut the tile to given size
5. Construct the floor base for Tiling.
6. Maintaining and Facing the Tile Joints.
7. Use spirit level and plumb line for maintaining structural alignment
8. Erect tiles vertically and inclined position.
9. Make centering for arches before tiling.
10. Erect tiling at any height for construction work.
11. Operate tile cutting machine easily.
12. Practice basic art for tile designing work.
13. Use latest techniques and tools in tile processing
14. Design and fix tile pieces in different style.
15. Be capable of using cutting, grinding and polishing machines

KNOWLEDGE PROFICIENCY DETAILS:-

On successful completion of this course, the trainee should be able to:-

1. Gain insight into the Mason Marble & Tiling job role and its career prospects
2. Know general introduction to job role, role of a Mason Marble & Tiling in construction industry along with the future possible career development provisions
3. Learn laying and fixing tiles / marbles both horizontally & vertically on wall and floor
4. Describe the Make Tile / Marble In-Lays
5. Learn selection and use of tools for measuring, marking, cutting, laying and fixing marbles and tiles as per standard procedure.
6. Comprehend and apply grouts and sealants for flooring and cladding works which includes selection and use of different tools, equipment, grouts and sealants for sealing joints and finishing of flooring and cladding works.
7. Know to work effectively in a team to deliver desired results at the workplace
8. Plan and organize work to meet expected outcomes
9. Interpret according to personal health, safety and environment protocol at construction site.
10. Express the method of erecting timbering for trenches
11. Explain the different types of joints and their uses
12. Interpret all safety rules and precautions for personal and equipment
13. Explain the material wastage
14. Describe Handling of Cutting and polishing machines

CURRICULUM DELIVERY STRUCTURE

TILE FIXER (6-Months Course)

Week	Course Delivery	Make up Session	Revision	Co Curricula Activities / Vacations	Final Test	Total
	1-20	21-22	23-24	25	26	26
	21	2	1	1	1	

SCHEME OF STUDIES
TILE FIXER (6-Months Course)

Sr. No	Main Topics	Theory Hrs.	Practical Hrs.	Total Hrs.
1.	Trade Related Mathematics	06	100	106
2.	Introduction to Measuring Tools	8	54	62
3.	Reading Drawing	08	70	78
4.	Tiles & Floor Materials: (Tile Fixing on different surfaces)	18	140	158
5.	Preparation of Floor Base	08	70	78
6.	Curing and Cutting of Tiles with cutting tools	06	32	38
7.	Tile Layout Plans	05	44	49
8.	Laying & Method of Tiles Fixing (Horizontal, Vertical & Angular)	06	132	138
9.	Apply Grout & Sealant	05	22	27
10.	Health and Safety	08	36	44
11.	Work Ethics(Lab Theory)	2	20	22
Total		80	720	800

Detail of Course Contents

Tile Fixer (6 - Month Course)

Sr. No.	Detail of Topics	Theory Hrs.	Practical Hrs.
1.	Trade Related Mathematics		
	1.1 Basic Mathematic	1	3
	1.1.1. Additions & subtraction of whole number		
	1.1.2 Multiplication and division of whole numbers		3
	1.1.3 Multiplication & division of fraction		3
	1.1.4 Addition & subtraction of fraction	1/2	3
	1.1.5 Addition & subtraction of decimal fraction		3
	1.1.6 Multiplication & division of decimal fraction		3
	1.1.7 Percentage: change number to percent, change percent to decimal and fraction		3
	1.1.8 Solve problems related to addition, subtraction, multiplication, division and percentage		3
	1.2 Measurement System		3
	1.2.1 Foot pound system of measurement	1/2	3
	1.2.2 Parts / fraction of inches and foot		
	1.2.3 Metric system of measurement		3
	1.2.4 Multiples and parts of units		3
	1.2.5 Conversion of foot pound to metric system vise versa		
	1.2.6 Exercise to solve problems related to conversion, addition, subtraction and multiplication & division of measurements		3
	1.3 Angles	1/2	3
	1.3.1 Angle and its units		3
	1.3.2 Types of angles		
	1.3.3 Calculation (addition and subtraction etc.)		3
	1.3.4 Practice for Measuring Angle		3
	1.3.5 Practice for Calculation Angles & Multiple Angles		
	1.4 Surface Area		

	1.4.1 Surface area of rectilinear plane figures (square, rectangle, triangle & parallelogram etc. 1.4.2 Surface area of angular plane figures (circle, segment, sector etc.) 1.4.3 Practice in calculating area of different geometrical figures (circle, segment, sector etc.) 1.4.4 Practice to calculate plane figure area (Triangle, Rectangle and Parallelogram etc) 1.4.5 Area and perimeter of composite figures 1.4.6 Practice in calculating areas and perimeter of composite figures 1.4.7 Practice in calculating covered area of building from working drawing 1.5 Estimation & Wastage 1.5.1 Estimating cost of tile floor on the basis of surface area 1.5.2 Calculating wastage on the basis of area and length 1.5.3 Practice of solving problem regarding estimating and cost of tiles	$\frac{1}{2}$ 1 $\frac{1}{2}$ 1 1/2	3 3 3 3 3 3 4 3 3 3 3
2.	Introduction to Measuring Tools 2.1 Introduction & Importance for Tools 2.2 Type of Measuring Tools & it uses 2.2.1 Intvar Tape 2.2.2 Steel Tape (FPS & MKS) 2.2.3 Vernior Calliper (Digtal) 2.2.4 Micrometer 2.2.5 Steel Rule 2.2.6 Scriber 2.2.7 Angle Finder (Digital) 2.2.8 Estimating and costing with Microsoft Excel	2 2 2 2	54
3.	Reading Drawing 3.1 Introduction of Drawing 3.1.1 Necessity of drawing	1	10

	3.1.2 Importance of Drawing	1	
	3.1.3 AutoCAD based Drawing preparation	1	
	3.2 Free hand sketching	1	30
	3.2.1 Types and material for free hand sketching		
	3.2.2 Sketching of lines and geometrical figures	1	
	3.2.3 Exercise to draw different lines, circle, ellipse, triangle, rectangle & polygons	1	30
	3.2.4 Free hand pictorial sketching blocks	1	
	3.2.5 Practice of free hand sketches	1	
	3.2.6 Practice lettering		
4.	Tiles & Floor Material-Tiles and its Fixing on Surface		
	4.1 Introduction & uses of Tiles	1	
	4.1.1 Definition of tiles		10
	4.1.2 Importance of tiles	1	
	4.1.3 Manufacturing of Tiles		
	4.1.4 Textures of Tiles		10
	4.1.5 Color coding of Tiles	2	
	4.1.6 Shades of Tiles		10
	4.1.7 Preparation of Tiles in Pakistan		
	4.2 Type of Tiles	2	10
	4.2.1 Ceramic Tiles		
	4.2.2 Clay Tiles		
	4.2.3 Quarry Tiles	2	10
	4.2.4 Porcelain Tiles		
	4.2.5 Terrazzo Tiles		
	4.2.6 Vitrified Tiles	2	10
	4.2.7 Mosaic Tiles		
	4.2.8 Natural Tiles		
	4.2.9 P.V.C. Tiles	2	10
	4.2.10 Glazed Tiles		
	4.3 Tile Specification	2	10
	4.3.1 Standard specification		
	4.3.2 General Specification		10

	4.3.3	Design Specification		
	4.3.4	Material Specification	2	10
	4.3.5	Performance Specification		20
	4.6	Laying of Tiles		
	4.4.1	Laying on Walls	2	20
	4.4.2	Laying on Floors		
	4.4.3	Laying on Roofs		
	4.4.4	Laying on inclined surface		
5.	Preparation of Floor Base			
	5.1	Introduction & Importance	1	2
	5.2	Type of Floors		
	5.2.1	Concrete		
	5.2.2	Wooden		
	5.2.3	Fibre Glass	1	8
	5.2.4	P.V.C		
	5.3	Introduction of Floor Materials		20
	5.3.1	Cement; types and properties		
	5.3.2	Sand; types and properties	1	
	5.3.3	Aggregate; types and properties		
	5.3.4	Bricks; types and properties		
	5.3.5	Reinforcement; types and properties		
	5.4	Components of Tile Floor Base	1	
	5.4.1	Earth filling and Compaction		20
	5.4.2	Preparation Sub-Base and compaction		
	5.4.3	Preparation Base Course and Compaction		
	5.4.4	preparation Floor Base	1	
	5.4.5	Advance surface preparation techniques		
	5.4.6	Fixing Tiles with advance tools	1	
	5.5	Type of Base		20
	5.5.1	Hollow Base		
	5.5.2	Solid Base	1	
	5.5.2.1	Levelling of the Base Layer		
	5.5.2.2	Preparation of under layer of floor		

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	6.7.1 Bevelled Edge		2
	6.7.2 Round Edge		3
	6.7.3 Double Round Edge		1
	6.7.4 Bull Nose Edge		
	6.7.5 Rustic Edge		
7.	Tile Layout Plans		
	7.1 Introduction to Layout the tile plan	1	
	7.2 Importance for Layout	1	
	7.3 Methods / Pattern to Tile Layout Plans	3	
	7.3.1 Square set / Grid Pattern		
	7.3.2 Diagonal / On Point Pattern		
	7.3.3 Running Bond / Brick Laying Pattern		44
	7.3.4 Pinwheel / Hopscotch Pattern		
	7.3.5 Zigzag / Hearing bone Pattern		
	7.3.6 Chevron Pattern		
	7.3.7 Weavy Pattern		
	7.3.8 French / Versailles Pattern		
	7.3.9 Modular Tile Line Pattern		
	7.3.10 Drop & Insert Pattern		
	7.3.11 Boarder & Listellos Pattern		
	7.3.12 Modern tile layout design		
	Note: Prefer to Use Digital Devices instent Hard copies of Layouts for Paperless work		
8.	Laying & Method for Fixing Tiles		
	8.1 Introduction	1	
	8.2 Importance of Tile Laying and Fixing		
	8.2.1 Fixing on Floor	1	
	8.2.2 Fixing on Walls		
	8.3 Principles to Lay the tiles	1	
	8.4 Tile Installation steps		
	8.4.1 Preparing the floor surface	2	
	8.4.2 Plan / Begin Layout		132

	8.4.3 Apply Adhesive 8.4.4 Cut the tile if needed 8.4.5 Set the tile after curing 8.4.6 Grouting Joints 8.4.7 Cleaning of tile surface 8.4.8 Protection of Attached surface during renovation 8.5 Joints in Laying of Tiles 8.5.1 Vertical Jointing 8.5.2 Horizontal Jointing 8.5.3 Vertical and Horizontal Jointing 8.5.4 Herring Jointing Precautions: Before tile work ensure any activity	1	
9.	Apply Grout & Sealant 9.1 Introduction for Grouting 9.2 Importance for Grouting 9.3 Advantages for Grouting 9.4 Tools for Grouting 9.4.1 Bucket 9.4.2 Caulk Gun 9.4.3 Grout Float 9.4.4 Margin Trowel 9.4.5 Shop Vacuum 9.4.6 Stiff Putty Knife 9.5 Grout Steps 9.5.1 Cleaning Joints 9.5.2 Mix Grout 9.5.3 Load Grout Float 9.5.4 Load the Joints 9.5.5 Clean off excess Grout 9.5.6 Sponge the Surface 9.5.7 Tool the Grout Lines	1/2 1/2 1 1	2 10

10.	9.5.8	Towel off the Haze		
	9.5.9	Caulk inside corners		
	9.5.10	Modern Grouting techniques		10
	9.5.11	Eco-Friendly adhesies and Grouts for Green Enviornment		
	9.6	Sealant	1	
	9.6.1	Introduction for Sealant		
	9.6.2	Importance of Sealant		
	9.6.3	Type of Sealant		
	9.6.3.1	Penetrating Sealants		
	9.6.3.2	Surface Sealants	1	
	9.6.3.3	Innovative graouting chemicals		
	9.6.3.4	Stain resistant sealant		
	9.6.4	Step to apply sealant		
	9.6.4.1	Sweep Floor		
	9.6.4.2	Mix Sealer		
	9.6.4.3	Penetarat the sealer with gun		
	9.6.4.4+9	Apply 2 nd Coat of Sealer (if needed)		
		Note: Develop strategies for reducing waste, including recycling old tiles and minimizing scrap during cutting	1	
		Health and Safety		6
	10.1	Introduction		
	10.2	Importance for HSE	1	
	10.3	Elements of a Successful HSE Management System		15
	10.4	HSE Policy	1	
	10.5	Safety of Tools/Equipments		
	10.6	Maintenance of Tools/Equipment		
	10.7	Type of Hazards		
	10.7.1	Hazards involved at construction site		
	10.7.2	Hazards involved in different tiling work		

	10.7.3 Safety control from Hazards & its identification 10.7.4 Emergency Safety at work 10.7.5 Uses of fire estinguishers 10.7.6 First Aid Process 10.8 Using “PPEs” and its concepts 10.6.1 Safety Helmets 10.6.2 Face shield 10.6.3 Overalls 10.6.4 Safety Shoes 10.6.5 Knee Pads 10.6.6 Harness 10.6.7 Safety Goggles 10.6.8 Safety Gloves 10.6.9 Safety Mask 10.6.10 Ear Plug 10.6.11 Reflective Jackets 10.6.12 First Aid Box 10.6.13 Safety Tag 10.6.14 Fire Prevention Kit 10.6.15 Safety Notice Boards	1 <
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LIST OF LABS.

Tile Fixer (6-Months Course)

1- Tile & Marble Cutting Lab.

To cut the Marble and tiles pieces into entire shape, Design and sizes. Proper cutter should be installed at proper place for practices.

2- Construction Yard

To prepare new concrete and mortar for tiles. Curing for tiles (Construction tools may be supply and stored in this Lab.)

LIST OF PRACTICAL

Tile Fixer (6-Months Course)

Sr. No.	Description	Hours
1	Practice for Mathematics	09
2	Practice to reading and study Drawings	09
3	Develop concept of floor / wall tiling	06
4	Identify commonly available floor / wall tiles.	36
5	Identify design / pattern of floor /wall tiling.	24
6	Identify tools and equipment for wall/floor tiling.	36
7	Calculate the numbers of tiles required for a given floor/wall area.	40
8	Prepare 1:4 cement sand mortar.	06
9	Prepare background surface area for tiling.	25
10	Prepare 1:1 cement sand slurry.	06
11	Cut tiles as to required size.	15
12	Cut tiles with edge design.	25
13	Cut different color tiles and prepare design	36
14	Lay glazed common tiles on walls with 1:1 cement sand slurry	48
15	Lay decorative tiles on wall with 1:1 cement sand slurry	48
16	Lay boarder tiles on wall in 1:1 cement sand slurry.	48
17	Lay non-slippery tile on floor/ bathroom /tread / sill.	48
18	Lay non-slippery tiles on kitchen / living room floor.	48
19	Lay PVC tiles on floor using adhesive materials (glue).	16
20	Lay marble tiles in staircase.	45
21	Perform terrazzo-flooring work with various sizes of marbles chips.	45
22	Adapting Health & Safety measures at work place	25
23	Using PPEs at work place	20
24	Practice to use fire estanguishers	14
25	Practice to Fire Fighting at Site	20
26	Work Ethics	22
	Total Practical Hours	720

LIST OF TOOLS, EQUIPMENTS & MACHINERY

Tile Fixer (6-Months Course) (For the Class of 25 Students)

The following tools and equipment would be required for effective and comprehensive training of the trainees at the institute level their timely modifications, improvements and innovations are also recommended miniature sectional working models of tools, plants, machinery / equipment are preferred.

Sr. No	Name of Items	Specifications	Unit	Qty
1	Measuring Tape	METALLIC TAPE .30 m (100 ft) long .Brass wire woven nylon / cotton, ribbon 2 mm (1/12") wide. .Graduated both in metric and feet units .Complete in plastic case	No.	25
2	Trowel	Trowel (200-280 mm long steel) For general purpose .Tempered and hardened steel. .With wooden handle.	No.	25
3	Plumb bob	.100-130 gms weight .Brass polished .Replaceable blued steel pointer .Screw cap with strip indicator	No.	25
4	Tile cutter	Max. cutting thickness 12mm STEEL BASE SIZE 815 X 195cm THICKNESS OF BASE 2mm BLADE SIZE Φ - 16 X 6 X 3mm	No.	2
5	Rubber Hammer	2.25in (57mm) hard rubber face and 11in (280mm) long wooden handle	No.	25
6	Try square	600 x 400mm. Steel Framing Square Heavy gauge steel framing square with metric and imperial markings.	No.	25
7	Water Level pipe	Shape Round Thickness 1 Millimeter (mm) Length 100 Meter (m) Color Transparent	No.	25

8	Shovel	Shovels with handle Hardened and tempered steel blade, rounded point D-shape handle (wooden) 75cm long	No.	10
9	Mortar pan	Mortar Pan GI Sheet (20 SWG) Size 45 cm dia	No.	10
10	Bucket	Heavy duty tin sheet (20 SWG) conical shape with galvanized iron blade 100 feet (30m) * Capacity: 9-10 Ltr.	No.	10
11	Wire brush	Wire Brush for clearing	No.	25
12	Safety Helmet	Straps should be fitted such that minimum clearance be at least 30 mm and maximum clearance more than 80 mm. Chin strap should have minimum width of 19 mm and directly attached to shell. Nape strip should have minimum depth of 115 mm. The mass of helmet without attachments should be 400 g.	No.	25
13	Boot (Safety Shoes)	minimum impact resistance of 200 Joules and compressive strength of at least 15 kN at the toe cap, in addition to other characteristics such as being antistatic.	No.	25
14	Mixing board /Tray	Tray (Galvanised Iron, 14 SWG) SET 600X450X80mm, 600X600X80mm 750X750X80mm 80mm high	No.	5
15	Line and pins	6 inches in length and chrome plated	No.	25
16	Spirit level	Mason's Spirit Level * Aluminium = 2 ft. length * Three Vials	No.	25
17	Float	Steel float Set (Small, medium, large) Wooden Handle	No.	25
18	Pointer hammer	Ball Point - 800 gms, 1.3 Kg, 42 x 8 x 4 cm	No.	25

19	bolster tile remover set	Dimensions, 41.79 x 10 x 4.5 cm; 460 g	Sets	25
20	Straight edge (Aluminum)	Straight Edge Aluminium Tube = 2mm thickness Size = 5x2 cm length = 1 m	No.	10
21	Grinding stone	Particle Size 120 mm Shaft Diameter d 3mm Outer Diameter D 10mm Thickness T 13mm	No.	10
22	Tiling trowel	11" x 4 1/2" blade made with hard tempered steel Notch shape options: Square, U-Shape, V-Shape	Sets	25
23	Gloves	Good Quality	Sets	25
24	Mallet (Rubber)	MALLET • Hardwood head dia 75 mm • Complete with handle 400 mm long fixed into the head.	No	25
25	Electric mortar mixer	Dimensions (l x w x h) 530 x 390 x 715 mm Speeds (rpm) Low, High Paddle: 140 ± 5, 285 ± 10 Mixing Head: 62 ± 5, 125 ± 10 Rated Power 180 W Bowl Capacity 5 litres approx. Weight 54 kg	No	5
26	Power Wet Saw	1 HP, 3600 RPM direct-drive motor, ideal for handling small or large tile projects · 7 in	No	2
27	Hand Held tile cutter		No	5
28	Rubber bucket	weight, 1.3 Kilograms ; Product dimensions, 31L x 22W x 28H centimetres ; Capacity, 14 litres ;	No	5
29	Safety Belt	Belt Width: up to 2" (51 mm). • Belt Connection: slotted. • Overall Size: 6-3/4" (171 mm) x 10" (254 mm). • Weight (lbs.): .56	No	25
30	Safety goggles	Color: White, lens center thickness of 2.5 mm, weight 26 gr. Per piece in a plastic bag	No	25

31	Tile leveling plier	Part Number 10 guage Item Weight 450 weight approximately Product Dimensions 9.5 x 1.8 x 4.25 inches	No	25
32	Reflective jackets	Reflective Jacket made out of Polyester fabric with 1 1/2" wide Micro Prismatic reflective tape for night time vision	No	25
33	Diamond Drill bit kit	10-Piece Professional Grade Integrated Steel Diamond Hole Saw - 1/4 in. (6 mm), 5/16 in. (8 mm), 3/8 in. (10 mm), 1/2 in. (12 mm), 9/16 in. (14)	No	5
34	Electric Tile Cutter Machine	Table Size: 395 x 385mm Blade Size: Ø180 x 2.6 x Ø22mm Maximum Cutting Depth: 45°: 25mm Maximum Cutting Depth: 90°: 35mm Input Volt: 220V Rated Input Power: 500W Speed: 2800rpm Weight: 12kg	No	5
35	Tile Nipper	Material Carbide, Rubber Product Dimensions 8.5"L x 3.5"W Handle Material Rubber Item Weight 0.9 Pounds	No	5
36	Tile and glass circle cutter		No	5
37	Scraper	61inch Scraper Tool Long Handle Thickened Stainless Steel Material Sturdy and Durable	No	25
38	Heavy Duty knife cutter	155 x 40 x 18 mm (cutter). Blade Dimensions: 0.5 x 18 x 100 mm.Heavy Duty cutter	No	25
39	Silicone gun	9" caulking gun; Thickness : 1.0mm; Length: 230mm; Diameter:55mm; Iron shank with teeth; With cutting function;	No	25
40	Tile Gape regulator	2 x pump up suction cups · 2 x lip clamps · Spans between 170 - 225mm · Width: 250mm · Length: 655mm.	No	5

41	Tile Double vacuum suction cup	Suction cup diameter is 4.7in or 11.8cm. Made of durable aluminum material, able to handle heavy tiles, Glass, or other smooth material. large 4-3/4 dual suction cup design with locking tabs, great comfortable lifting hands.	No	5
42	Fire Extinguisher	Capacity (kg) 6 Type of Extinguishing Media Dry Powder Expellant Pressurized with N2 Gas/120 gm Gas Cartridge Minimum Effective Discharge (%) 85 Minimum Jet Length (mtr) More than 2 mtr	No	5
43	Fire prevention kit	Include Fire Alarm Systems; Smoke detector; Heat Detector; Fire Hydrant System; Fire Suppression System	No	5
44	Tile Trimmer	Heavy-duty tile cutter machine in Pakistan for Cutting All Kinds of Ceramic and Porcelain up To 120 cm / 1200mm / 48"	No	5
45	knee pad	Capped by large abrasion-resistance rubber caps for long-lasting wear. Excellent for non-slip, hard surface work environment	Pair	25
46	Tile Laser Leveler (Horizontal & Vertical)	3 LASER – DONGCHENG DFF 11 ; Vertical Line Angle, 150 ; Width of Laser Line, 2 (5mm) ; Battery Specification, 3×1.5V AA ; Working Temperature, -10 ~ +45.	No	5
47	Notched Spreader	4" wide spreader used for spreading base adhesive across the back of 6" wide vinyl or rubber cove base. Features a polished stainless steel blade and an attractive lacquered wood handle. The blade has 1/8" x 1/8" V- shaped notches which are typically the correct size for spreading this adhesive	No	1

48	Grout Spreader	length is 350mm, its width is 150mm and its thickness is 6.5mm.	No	10
49	Tile Rubbering Stone	rectangular Shape, 4" x 1" Black 60-90 Grit Stone	No	10
50	Tile Removing Chisel	heavy duty 1-1/2 x 10" tile chisel ; Length, 10.0"; Width, 1.5"	No	10
51	Grout Rake	4 in 1 Tile Grout Remover Grout Scraping Rake Tool with 2 Carbide Alloy Head Grout Remover Scraper (0.8mm,2mm,3mm,4mm)	No	10
52	Profile Gauge	Dimension, 5" inches width + 10" inches long ; Gross weight, 450 gram ; Net weight, 340 gram	No	10
53	Tile Hole Cutter	Metal Cutting Diameter : 25mm / 0.98inch;Shank Size : 8 x 25mm / 0.31inch x 0.98inch (D * L)	No	10
54	Tile Vibrator	Battery Voltage 16.8v max lithium, Battery maH 2000 maH, item weight Approx 2kg.	No	5
55	Zaptec six fold	Zaptec Six Fold Multi Function Aluminium Alloy Ruler With Hole Guide - Angle Measurement Finder Hole Opening Locator Template - For Builder Contractor Tiler Carpentry Woodworking (Black)	No	5
56	Montolit Tile Levelling Lifter	300mm,wrenchet lever handle,attatch to pump action metal plate form o	set	5

LIST OF CONSUMABLE MATERIALS

(For the Class of 25 Students)

Sr. No	Name of Items	Quantity
1	Tiles (Different size and Quality)	
	1. Ceramic (Glazed) tiles	Sq. meter 8
	2. Clay tiles	Sq. meter 8
	3. Quarry(Unglazed) tiles	Sq. meter 8
	4. Porcelain tiles	Sq. meter 8
	5. Terrazzo tiles	Sq. meter 8
	6. Mosaic tiles	Sq. meter 8
	7. Vitrified tiles	Sq. meter 8
	8. Natural tiles	Sq. meter 8
2	Cement	Bags 50
3	Sand	Cft 500
4	Crush	Cft 500
5	Spacers (1mm, 2mm, 3mm, 4mm & 5mm) Different types	Nos 500
6	Grouting Compound	kg 15
7	Adhesives waterproof	Nos 30
8	Adhesives Flexible	kg 30
9	Cement based grout : Sanded / Non Sanded	kg 13
10	Epoxy based grouts	kg 13
11	Buttering	kg 13
12	Caulk	kg 13
13	Listello (Different Design)	m 30
14	Clip and Wedge tile levelling	packet 3
15	Red oxide for layout	packet 12
16	Dori cotton	Nos 12

LIST OF FURNITURE

Tile Fixer (6-Months Course)
(For the Class of 25 Students)

Sr. No	Contents	Quantity
1	First Aid Box	02 No.
2	Steel Almirah	06 Nos.
3	Steel / Wooden Dismantling for Demonstration	01 No.
4	Demonstration table	01 No.
5	Wooden office chairs	02 Nos.
6	Student Chairs / STOOLS	26 Nos.
7	White Board	01 No.
8	Office table with Drawer	01 No.
9	File Cabinet	03 Nos.
10	Multimedia	02 Nos
11	White Board	02 Nos

MINIMUM QUALIFICATION OF TEACHERS

D.A.E in civil with Three years experience in relevant Teaching/ field.

OR

Certificate in Masonary / Tile and Marble Fixing trade with atleast Five years field experience .

Employability of Pass Outs

The pass out of this course will be able to work in the following industries / areas:-

1. Self- employment
2. Govt. Organizations
3. Semi – Government Organizations
4. Private Organization
5. Construction Industry
6. Town Planning where construction is running
7. Land escaping work where Tiling work is running
8. Tiles and Marble industries engaged in the business of marble cutting In-Lay
9. Start their own business for marble In-Lays
10. Opportunities to work abroad like Middle East, Europe

REFERENCE BOOKS

1. Advance tools from Internet search
2. Tile Fixing (Construction) By
 - a. Arura & Gupta
 - b. Sharma
 - c. Michel's
3. Building construction By Sharma
4. Building construction By Churly Vol 1–4
5. Tile & Marble Fixing By Development Cell, Lahore.

IMPORTANT JARGONS

Adhesive – used for bonding tile to a surface.

Battiscopa – the Italian term for a bullnose trim piece.

Border – a strip of tile with design, texture or contrasting color that creates a design concept.

Brushed finish – a finish resulting from treating the stone surface with a coarse wire rotary brush.

Bullnose – a trim tile with a convex radius or finished edge on one side. Used for finishing top of wainscot, turning of an outside corner, or floor base.

Buttering – The spreading of a bond coat to the back of a ceramic tile immediately before the tile is installed.

Caulk – a soft, water resistant plastic material used for sealing joints.

Coefficient of Friction (COF) – Slip resistance of a tile.

Cove – A trim tile with one edge a concave radius. Used to form a junction between the bottom wall course and the floor or to form an inside corner.

Cure – the time period that a tile installation setting material must be undisturbed and allowed to set for it to reach full strength.

Decorative tile – any tile face with a decoration on the surface.

Dry set mortar – cement based setting material for thin-bed installations.

Epoxy adhesive – a two part adhesive system consisting of epoxy resin and epoxy hardener. Used for bonding ceramic tile or stone to backing material.

Epoxy grout – a two-part grout system consisting of epoxy resin and epoxy hardener. Made to have impervious qualities, stain and chemical resistant. Used to fill joints between tiles.

Field tile – the primary tile used to cover a wall or floor.

Floating – a method of aligning mortar with the float strips or screeds using a straightedge.

Floor tile – a ceramic tile or natural stone tile durable enough to withstand traffic and abrasion.

Frost resistant – Vitreous tile that absorbs .5% to 3%

Frost proof – impervious tile that absorbs 0% to 0.5%. Strongest tile for outdoor use.

Grout – silica sand, cement and chemical mix for filling tile joints. Available in a wide variety of colors.

Glazed tile – a tile that has an impervious facial finish composed of gaseous ceramic materials fused to the surface of the tile.

Granite – a natural stone more dense than marble. Granite is molten lava that never rose above the surface of the earth. It is extremely durable and holds a polish. Available in polished, honed or flamed (rough) surfaces.

Impervious tile – has water absorption of 0.5% or less.

Limestone – sedimentary stone that could have fossils or shells. Usually comes with a honed (matte) finish. Not a wide variety of color; stones have little variety from piece to piece.

Listello – a decorative border, primarily for walls.

Marble – a natural stone product quarried from the earth. It gets a distinctive shine from the polishing process it goes through. Available in multiple finishes and a wide variety of colors.

Mastic – a ready to use organic glue.

Monocottura – method of producing tile by a single firing in which body and glazes are fired in kilns at temperatures over 2000 degrees.

Mosaics – ceramic, porcelain, glass, metal or stone tile mounted on mesh for ease of installation. May come in squares, octagons, hexagons or random shapes.

Mud – slang term referring to thick-bed mortar consisting of sand and cement.

Porcelain tile – Characterized by a dense and impervious body generally made of the dust-pressed method.

Quarry tile – a slang term usually 6x6 impervious unglazed tile.

Sealer – a penetrant applied to prevent the absorption of liquids or other debris. Used with porous materials including: quarry tile, grout, and natural stone. Sealer is not necessary for glazed ceramic tile.

Slate – a natural material that is known for its dynamic colors and "earthy" appeal. Colors range from grey to purple to black. Slate is used outside as well as inside because of its natural look and wonderful colors.

Spacers – plastic pieces that are used in installation to evenly separate tile. Manufactured in various thicknesses and shapes.

Substrate – the underlayment for the ceramic tile installation.

Thin-set – term used to describe the bond coat in a thin bed installation. It is made of sand, cement and usually a latex additive.

Tile – a ceramic unit, usually thin in relation to facial area. Made from clay or a mixture of clay and other ceramic material. Has a glazed or an unglazed face.

Travertine – similar composition to limestone but with holes created by hot springs. Colors include beige, red, yellow and brown, with some variation from piece to piece.

Trim pieces – various shaped of bases, caps, corners, moldings, angles, etc.

Tumbled – a finish achieved by placing stone tiles in a tumbling machine, sometimes with the addition of acids, to soften the edges and give the surface a worn look.

Unglazed tile – a hard, dense tile of uniform composition. No glaze.

Vitreous tile – has water absorption of more than 0.5%, but not more than 3%.

Wall tile – glazed tile with a body suitable for interior use. Not expected to withstand excessive impact or be subject to freezing/thawing conditions. It is not appropriate for use on a floor.

CURRICULUM REVISION COMMITTEE
Tile Fixer (6-Months Course)

Ref No:- TEVTA / ACAD / CUR. / 6-163 Dated 22.08.2024

Sr.No	Name and Designation	Status
1	Mr. Tahir Mehmood, Instructor Civil, GCT sialkot	Convener
2	Mr. Muhammad Ibraheem, Instructor Civil, GCT Rawalpindi	Member
3	Mr. Abdul Rauf, Instructor Civil, GCT Sialkot	Member
4	Mr. Waqas Ali Industry	Member